# POLARIZING CORPORATIONS:
# DOES TALENT FLOW TO "GOOD" FIRMS?

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March 2024

ABSTRACT. We conduct a field experiment in partnership with the largest job platform in Brazil to study how environmental, social, and governance (ESG) practices of firms affect talent allocation. We find both an average job-seeker's preference for ESG and a large degree of heterogeneity across socioeconomic groups, with the strongest preference displayed by highly educated, white, and politically liberal individuals. We combine our experimental estimates with administrative matched employer-employee microdata and estimate an equilibrium model of the labor market. Counterfactual analyses suggest ESG practices increase total economic output and worker welfare, while increasing the wage gap between skilled and unskilled workers.

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## 1. INTRODUCTION

The past decade has seen a tremendous rise in the pressure corporations face to do "good" not just to shareholders, but to society at large. This shift has brought the environmental, social, and governance (ESG) practices of corporations into the spotlight (Bénabou and Tirole, 2010; Hart et al., 2017). In parallel, a growing body of academic work studies how employees consider nonmonetary attributes—such as the organization's mission and values—when making employment decisions (Ashraf and Bandiera, 2018; Cassar and Meier, 2018; Mas and Pallais, 2020).

In this paper, we study whether and how corporate ESG practices affect talent allocation, and specifically whether different aspects of ESG are attractive to different types of job-seekers. While there is a large and growing body of work showing that various stakeholders of corporations care about specific aspects of ESG (e.g., diversity) and that certain nonwage amenities (e.g., work-from-home policies) are valued by workers, little is known about what ESG practices matter to job-seekers and, crucially, about the efficiency and distributional consequences of ESG on the allocation of talent in the labor market. We think these are policy-relevant aspects of the discussion that remain open empirical questions, and therefore represent the focus of our paper.

We study these questions in the context of Brazil, where we are able to combine: (i) a field experiment to estimate job-seekers' preferences for different job and firm characteristics, with an emphasis on ESG; (ii) matched employer-employee administrative data on the entire formal sector, combined with a new survey of firm-level ESG; and (iii) a structural model to evaluate the quantitative impact of ESG preferences on the labor market equilibrium.

In the first part of the paper, we describe our field experiment, which is conducted in direct collaboration with Catho, the largest job-matching platform in Latin America. Our experiment aims to estimate job-seekers' preferences for ESG, which is challenging to do when relying solely on revealed choice data due to myriad other characteristics that may be correlated with ESG practices. Our experiment is inspired by recent developments in the literature on labor market discrimination, and specifically by the nondeceptive incentivized resume rating approach proposed by Kessler et al. (2019). We design a variation of that approach, where Catho invites job-seekers to rate a set of job postings under the real incentive that Catho will match them to a curated set of active job postings in their database based on an artificial intelligence algorithm that filters the best matches according to individual preferences.[1] There is no deception since job

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[1]This new artificial intelligence tool aligns with Catho's existing approach of improving the search and matching process for their customers through personalized recommendations.

postings that job-seekers rate are designed to appear realistic, but the respondents are aware that they are synthetic postings created by our team. Importantly, this design allows us complete flexibility in creating the job postings and to orthogonalize ESG disclosures or certifications against other firm characteristics that a worker might value. Since job-seekers receive no other incentive to participate, this design provides a robust methodology to estimate individual preferences for ESG via simple regressions of the rating on an indicator for whether the job posting displays a positive ESG signal.

Our main result is that job-seekers have a strong preference for ESG. We find that job-seekers value the ESG signal as equivalent to about 10% of average wages. Not surprisingly, our respondents also have a preference for higher-paying jobs, as well as for jobs offering more nonwage amenities (such as transportation allowances, among many others). In terms of relative magnitude, ESG signals are comparable to private pension plans and more important than most other nonwage amenities, including working for a multinational company, various food and medical allowances, and professional development programs, in eliciting interest from job-seekers, and are about 60% as effective as work-from-home arrangements. Our results remain largely consistent even after controlling for individual socioeconomic characteristics and including individual fixed effects. We additionally include a control for the company's financial strength, which we also randomize and find does not impact individual ratings on average.

Our design includes the randomization of multiple aspects of a company's ESG practices. We find that the effects are strongest for companies that have an ESG certification (in particular, B Corp) and for those with positive *environmental* practices. We do not find a statistically significant effect on average for signals of positive *social* or *governance* practices. These results are corroborated by the textual analysis of responses to an open-ended question, in which we elicit what comes to respondents' minds when they think about working for companies with ESG practices in place.

Central to our analysis, we then examine the heterogeneity in ESG preferences across the sociodemographic spectrum. We show that preferences for ESG are concentrated among highly educated, white, and politically liberal individuals. In contrast, we observe no differences by gender or age.

Motivated by the sociodemographic heterogeneity in our reduced-form results on ESG preferences, we subsequently turn to analyzing the quantitative implications of ESG for labor market equilibrium. In particular, we examine how firm ESG activities impact the distribution of skilled and unskilled labor across heterogeneous firms, wage differentials between different demographics, allocative efficiency, and worker welfare. Towards that

goal, we develop a structural equilibrium model of the labor market featuring heterogeneous firms and heterogeneous workers, vertical and horizontal differential across firms, and allocative distortions due to firm monopsony power.

We combine the reduced-form estimates from our experimental work with rich matched employer-employee administrative data to estimate the structural parameters of the model that discipline the labor supply and demand curves. Specifically, we first use our experimental evidence to determine the valuation of ESG and the wage elasticity of the labor supply curve of a single firm. The valuation of other nonwage amenities is then computed as structural residuals rationalizing the actual firm employment shares observed in the data. Taken together, these estimates pin down the structural parameters governing labor supply. After calibrating the returns-to-scale of the production function from previous work, we use data on wages and employment levels from our employer-employee data to recover total factor productivity (TFP) and the skilled productivity multiplier at the firm level.

Our estimates of worker preferences regarding firm ESG are highly consistent with our previous reduced-form results. Skilled workers value firm ESG activities as equivalent to a 0.150-point increase in the log wage, while unskilled workers value firm ESG activities as equivalent to a 0.014-point increase in the log wage. Consistent with previous studies, the estimation of our structural model also reveals a positive correlation between firm TFP and the firm-specific skilled productivity multiplier. That is, skilled workers are more productive at high-TFP firms, leading to equilibrium assortative matching between skilled workers and productive firms.

Using our structural estimates, we proceed to quantitatively evaluate how firm adoption of ESG could impact the labor market equilibrium. To fully explore the economics of ESG adoption and its impact on labor market outcomes, we estimate a surface of counterfactual economies by varying both the types of firms that adopt ESG and the extent of ESG adoption within each type. We first document that the presence of ESG *increases* the wage differential on the order of 0–4% relative to a baseline economy with no ESG.

To understand why this increase in wage inequality arises, we further show that ESG adoption increases total output on the order of 0–0.7% relative to the baseline. In other words, the distributional changes in labor across firms due to the introduction of ESG improve the allocative efficiency of the economy compared to the baseline with no ESG. The distribution of labor in the baseline economy is inefficient in terms of maximizing total output for two distinct reasons. First, nonwage amenities distort labor allocation away from a configuration that would maximize total output since workers do

not only sort based on wages. Second, firms have monopsony power due to horizontal differentiation, leading to equilibrium marginal product of labor (MPL) wedges between firms that result in inefficiently low numbers of workers at high-productivity firms.

Since introducing ESG leads to a more allocatively efficient distribution of labor across firms, the total wage bill in the economy increases along with total output. The increase in the wage bill primarily accrues to skilled workers, as they are precisely the workers who value ESG and therefore respond to its introduction, thus increasing wage inequality.

We finally show that the introduction of ESG increases total worker utility on the order of 0–5% relative to the baseline economy, as measured in wage-equivalent terms. This increase arises from both direct and indirect general equilibrium (GE) effects. First, workers receive a direct utility benefit from working for firms that adopt ESG practices. Second, workers benefit from the increased allocative efficiency.

To better contextualize our counterfactuals and provide additional descriptive evidence, we also survey firms on their current and intended ESG practices, ESG drivers, and adoption barriers. We conducted the survey in July 2023 and obtained responses from 1,067 firms of various sizes. Our survey analysis reveals that firms with a higher TFP and a greater skilled productivity multiplier are more likely to express an intention to pursue ESG activities (including becoming a certified B Corp). Based on the firms' heterogeneous responses regarding their intention to pursue ESG certifications, our counterfactual analysis suggests that, relative to a baseline economy with no ESG, the equilibrium wage differential would increase by 56 bps, total output would increase by 10 bps, and worker welfare would increase by 1.14% in wage-equivalent terms.

Our findings contribute to three broad strands of literature. First, our study speaks to a growing literature on the role of organizational culture, mission, and values in shaping the workplace. Much of the work centers around the impact of pecuniary versus nonpecuniary incentives on applicant traits and subsequent performance within traditionally "mission-oriented" organizations such as NGOs and public sector organizations (Ashraf et al., 2014; Spenkuch et al., 2023).[2] A recent wave of studies has started to develop linking corporate and personal values to various worker and business outcomes in the

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[2]Dal Bó et al. (2013) demonstrate that higher wages can help attract both high-ability and motivated applicants for civil service jobs in Mexico, while Deserranno (2019) examines the signaling effect of financial incentives on recruiting NGO workers in Uganda, finding that financial incentives deterred candidates with strong prosocial preferences from applying. Similarly, Ashraf et al. (2020) examine how emphasizing career prospects versus community contributions in job postings affects the selection and performance of healthcare workers in Zambia.

private sector (Hussam et al., 2022; Ashraf et al., 2023).[3]  A subset of this literature studies the impact of organizational values on worker selection and sorting across firms.[4] Burbano (2016) and Burbano (2021) find that virtual workers on MTurk and Elance set lower reservation wages and are willing to do extra work for jobs at firms that provide information about their charitable activities. Hedblom et al. (2019) use a field experiment with data-entry workers in the U.S. and a structural model to discuss the labor selection and productivity effects of a firm's charitable practices.[5] We estimate preferences for ESG for a broad set of private sector workers in a new setting in Brazil. Importantly, the combination of a randomized survey design field experiment with a structural model and rich micro-data on an entire major economy allows us to provide, to the best of our knowledge, the first quantitative estimates of corporations' rising engagement with social and environmental values on labor market equilibrium and distributional outcomes.

Second, we contribute to the rapidly growing literature on ESG (see Gillan et al. 2021 and Christensen et al. 2021 for reviews), which has predominantly focused on the relationship between ESG and investment decisions. Several studies have shown that investors take into account firms' ESG activities when making investment and fundraising decisions, in part due to the presence of nonpecuniary motives.[6]  Several papers look at firms' decisions to become more green to access cheaper sources of capital (Broccardo et al., 2022; Edmans et al., 2023a; Hartzmark and Shue, 2023; Oehmke and Opp, 2023) and to attract customers (see Leonidou et al. 2013 for a review), while work on how ESG impacts the actions of other stakeholders remains more limited (Kitzmueller and Shimshack, 2012; Colonnelli et al., 2022a). We provide a direct estimation of the effect of ESG on a key set of stakeholders: workers. We document the strongest effects for corporate environmental practices, which is consistent with recent descriptive evidence by Krueger et al. (2023) that workers in Sweden earn substantially lower wages in more environmentally sustainable firms. Our findings therefore provide direct causal evidence

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[3]See, among others, Edmans (2011), Guiso et al. (2015), Gartenberg et al. (2019), Li et al. (2021), Pacelli et al. (2022), Graham et al. (2022), Rice and Schiller (2022) and Edmans et al. (2023b) for studies suggesting a positive correlation between organizational culture and business outcomes.

[4]Burbano et al. (2020) and Abraham and Burbano (2022) investigate the role of gender in preferences for meaning at work and related consequences for organizational structure. Colonnelli et al. (2022b) show that workers match with business owners sharing their same political views. Adrjan et al. (2023) study the impact of public announcements of socially and politically polarizing corporate policies on job-seeker interest and employee satisfaction. See Bond and Glode (2014) and Ferreira and Nikolowa (2023) for models of firms and workers with nonpecuniary preferences.

[5]See Choi et al. (2023) and LaViers and Sandvik (2022) for similar studies on the role of diversity.

[6]Examples include Hong and Kacperczyk (2009), Riedl and Smeets (2017), Hartzmark and Sussman (2019), Pedersen et al. (2021), Pastor et al. (2022), Pastor et al. (2021), Van der Beck (2021), Zhang (2022), and Gormsen et al. (2023).

on a potential quantitatively meaningful motive behind firms' decisions to invest in ESG: to attract and retain talent.

Finally, we speak to the labor literature on nonwage amenities dating back to the theoretical contributions by Rosen (1974, 1986) on compensating wage differentials.[7] Our structural modeling approach is based on work by Bhaskar et al. (2002), Manning (2013), Card et al. (2018), and Lamadon et al. (2022), who study how worker heterogeneity, nonwage amenities, and vertical and horizontal differentiation between employers impact firm monopsony power, earnings inequality, and employer rents in the U.S. A large body of empirical work, including field experiments, shows that employees value nonwage amenities such as work flexibility (Mas and Pallais, 2017; He et al., 2021; Maestas et al., 2023), job stability (Wiswall and Zafar, 2018), and fringe benefits (Eriksson and Kristensen, 2014).[8] After the COVID-19 pandemic, several studies find that employees value work-from-home policies (Barrero et al., 2021; Adrjan et al., 2021; Aksoy et al., 2022).

This paper is organized as follows. Section 2 motivates our study by establishing some facts about firms' ESG practices in Brazil and by introducing a simple model of ESG and the labor market. Section 3 describes the data sources and Section 4 details our experimental design. Section 5 reports the experimental results. Section 6 reports the structural estimation of the model to quantify the impact of ESG. Section 7 concludes.

## 2. MOTIVATION

To motivate and better contextualize our analyses, we briefly discuss some of the results of a new descriptive survey on ESG practices of Brazilian firms in Section 2.1. Then, in Section 2.2, we develop a simple model of the labor market equilibrium featuring ESG as a nonwage amenity. Using this model, we theoretically derive qualitative predictions regarding the relationship between firm ESG activities and a variety of important labor market outcomes. In particular, we will show that firm ESG activities have implications for the distribution of skilled and unskilled labor across firms, allocative efficiency, the distortionary effects of firm monopsony power, equilibrium wage differentials between skilled and unskilled workers, and total worker welfare. In our subsequent analyses, we will combine the results of a survey experiment with a structural extension of our theoretical model to quantify the strength of these channels.

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[7]For a review of the well-established literature in labor economics on firms, earnings inequality, worker sorting, and compensating differentials, see Card et al. (2018), Sorkin (2018), and Taber and Vejlin (2020), among others.

[8]See Mas and Pallais (2020) for a review of the literature on alternative work arrangements.

2.1. **A New Survey of Firm-Level ESG Adoption.** Most of the evidence on ESG practices and investment by firms focuses on large, publicly listed firms in advanced economies. We provide some descriptive facts about ESG in Brazil by means of a firm-level survey on ESG we conducted in July 2023. The objective of the survey is to better understand current ESG practices, ESG drivers, adoption barriers, and the relevance of ESG for firms' investment plans—a key ingredient of our structural model.

Our sampling frame relied on the firm panel of commercial market research company Dynata. We obtained a total of 1,067 responses by firm owners. We aimed to be representative of firms with more than 10 employees, which are typically the organizations that engage with ESG initiatives and advertise job openings on the major job platforms. In Panel A of Table I, we provide descriptive statistics on our sample.[9]

We start by establishing that firms are knowledgeable about ESG, as well as major certifications such as B Corp. As shown in Table I Panel B (under "Current ESG Adoption"), the median firm rates its self-reported knowledge and understanding of ESG at 4 out of 5. More concretely, 81% state they are currently implementing some form of ESG practices, and 41% indicate they are "extensively" implementing ESG considerations in their operations. In Appendix Figure A1 Panel A, we show that respondents perceive the main barriers to ESG adoption to be competing priorities (40%), limited human capital (30%), and cost constraints (29%). Importantly, in Panel B, we find respondents identify the primary benefits of ESG adoption to be alignment with firm values (59%), enhanced reputation and brand value (53%), regulatory compliance (40%), and—directly relevant to this paper—attracting and retaining talent (27%), which appears more relevant than easier access to finance and risk management considerations.

As discussed in detail later in this paper, our structural estimation benefits from an understanding of firms' ESG investment plans. To measure firms' plans to achieve high ESG standards, we present respondents with a range of ESG practices and ask them to identify the two practices most relevant for businesses similar to their own for each ESG category. For the selected practices, we detail the criteria for strong ESG performance and ask about respondents' estimated costs to meet these criteria and their likelihood of making such an investment in the next 1–3 years. We similarly ask about the likelihood of achieving a B Corp certification. As shown in Table I Panel B (under "Future ESG Implementation Likelihood"), across the four measures—environmental, social, governance, and B Corp—respondents on average signal a strong likelihood (around 70% or higher) of achieving high ESG standards within three years.

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[9]See Appendix Section A.3 and the supplementary appendix for details on the survey structure and questionnaire. Appendix Table AII provides an overview of the sectors that we target.

TABLE I. Firm Survey of ESG Practices

| Panel A: Sample Characteristics | Mean | Std. Deviation | $10^{th}$ Percentile | $25^{th}$ Percentile | Median | $75^{th}$ Percentile | $90^{th}$ Percentile |
|---|---|---|---|---|---|---|---|
| Company Age (years) | 16.16 | 10.89 | 4.00 | 8.00 | 13.00 | 23.00 | 33.00 |
| Full-Time Employees | 768.22 | 1,455.31 | 20.00 | 40.00 | 100.00 | 800.00 | 3,000.00 |
| Employees with College Degree (%) | 61.93 | 27.04 | 20.00 | 42.00 | 66.00 | 83.00 | 99.00 |
| Survey Duration (minutes) | 24.63 | 14.63 | 10.47 | 13.68 | 20.28 | 30.23 | 49.13 |
| Respondent Age | 35.62 | 8.82 | 25.00 | 30.00 | 35.00 | 41.00 | 47.00 |
| Female Respondent | 0.41 | 0.49 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| **Panel B: Firm ESG Practices** | | | | | | | |
| **Future ESG Implementation Likelihood (%)** | | | | | | | |
| Likelihood of Implementing Environmental Practices | 70.13 | 25.05 | 32.60 | 54.00 | 75.00 | 90.00 | 100.00 |
| Likelihood of Implementing Social Practices | 74.24 | 24.54 | 40.00 | 60.00 | 80.00 | 93.00 | 100.00 |
| Likelihood of Implementing Governance Practices | 75.23 | 24.30 | 40.00 | 61.50 | 81.00 | 96.00 | 100.00 |
| Likelihood of Achieving B Corp Certification | 73.06 | 25.55 | 31.60 | 59.00 | 80.00 | 94.00 | 100.00 |
| **Current ESG Adoption** | | | | | | | |
| Implemented ESG Practices (0/1=Yes) | 0.81 | 0.39 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Extensively Implemented ESG Practices (0/1=Yes) | 0.41 | 0.49 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Prior Knowledge of ESG Practices (1-Low; 5-High) | 4.04 | 0.93 | 3.00 | 3.00 | 4.00 | 5.00 | 5.00 |
| Prior Knowledge of B Corp (0-None; 1-Some; 2-Extensive) | 0.99 | 0.67 | 0.00 | 1.00 | 1.00 | 1.00 | 2.00 |

**Notes**: Panel A provides the summary statistics detailing the main characteristics of the firms and individual respondents in our firm survey sample. Specifically, we provide the mean, standard deviation (Std. Deviation), tenth percentile ($10^{th}$ Percentile), twenty-fifth percentile ($25^{th}$ Percentile), median, seventy-fifth percentile ($75^{th}$ Percentile), and ninetieth percentile ($90^{th}$ Percentile). *Company Age (years)*, *Full-Time Employees*, and *Survey Duration (minutes)* are winsorized at the $95^{th}$ percentile on the right tail, setting observations above this threshold to the $95^{th}$ percentile value. Panel B shows the summary statistics for the firm's future and current ESG practices. The survey sampled a total of 1,067 firms.

2.2. **Model of ESG and Labor Market Equilibrium.** The descriptive survey evidence in the previous section highlights that firm owners in Brazil identify talent attraction and retention as one of the key benefits of adopting ESG practices. In this section, we develop a simple model of the labor market featuring ESG as a nonwage amenity to derive qualitative predictions regarding the relationship between firm ESG activities and talent allocation.

2.2.1. *Workers.* The labor market is comprised of a large number of workers indexed by $i$. There are two representative firms, which we label as $A$ and $B$. The total mass of skilled workers is $\bar{L}_S$ and the total mass of unskilled workers is $\bar{L}_U$. Each worker inelastically supplies one unit of labor. Workers have preferences over the wage $W_{jg}$ and any ESG rating $E_j \in [0,1]$ of the firm. In the baseline economy, we assume that firms do not engage in any ESG activities.

In particular, we assume that the utility of worker $i$ of type $g \in \{S, U\}$ at firm $j \in \{A, B\}$ is given by:

$$u_{ij} = \log W_{jg} + \log \Upsilon_g (E_j) + \tau \varepsilon_{ij}, \qquad (2.1)$$

where $\varepsilon_{ij}$ is a Type-1 Extreme Value idiosyncratic shock and $\tau$ controls the dispersion of idiosyncratic preferences. We normalize the ESG utility such that $\Upsilon_g (E_{jt} = 0) = 1$. In this way, the model allows for both vertical and horizontal differentiation. In vertical differentiation, fixing group $g$, firms differ in their levels of ESG and other nonwage amenities. Horizontal differentiation arises because different demographic groups of workers can value ESG and other nonwage amenities differently. It additionally arises due to the idiosyncratic preferences of workers over firms captured by the Type-1 Extreme Value shock. Motivated by our future empirical results, we further assume that $\Upsilon_U (\cdot) = 1$. That is, unskilled workers place no value on firm ESG activities.

Workers observe posted wages and firms agree to hire immediately any worker willing to work at that wage. Wages are allowed to be a function of the worker's skill type, but cannot be conditioned on the idiosyncratic taste shock $\varepsilon_{ij}$, which is private information to the worker. Workers thus choose the job that maximizes their utility given the posted wages:

$$j(i) = \arg \max_j u_{ij}.$$

Standard logit math gives the probability

$$Pr(j(i) = j) = \frac{[W_{jg} \Upsilon_g (E_j)]^{1/\tau}}{\sum_{j'} [W_{j'g} \Upsilon_g (E_{j'})]^{1/\tau}} \qquad (2.2)$$

that worker $i$ chooses firm $j$. Higher wages and more ESG increase the probability that a worker chooses firm $j$.

2.2.2. *Firms.* Firm $j \in \{A, B\}$ faces an isoelastic (value-added) production function:

$$Y_j = \Xi_j L_j^{1-\eta} \tag{2.3}$$

where:

$$L_j = \sum_g A_g L_{gj} \tag{2.4}$$

are the efficiency units of labor. Here, $\Xi_j$ is firm TFP, $A_g$ is the productivity multiplier of skilled/unskilled labor, and $\eta$ is the return to scale in the production function. We normalize $A_U = 1$. Without loss of generality, we further assume Firm $B$ is more productive than Firm $A$, that is $\Xi_B > \Xi_A$. Firms engage in monopsonistic competition. When setting wages, firms ignore their impact on the overall market wage index. Under this assumption, each firm faces an upward-sloping labor supply curve for each skill group $g$:

$$L_{gj}(W) = \frac{\bar{L}_g \left[W_{jg} \Upsilon_g (E_j)\right]^{1/\tau}}{\Delta_g}, \tag{2.5}$$

with overall market wage index:

$$\Delta_{gt} = \sum_{j'} \left[W_{jg} \Upsilon_g (E_j)\right]^{1/\tau} \tag{2.6}$$

taken as given. Thus, the labor supply elasticity is given by $\sigma \equiv 1/\tau$. Under the assumption that firms set wages to maximize profits, the firm's first-order condition is:

$$(1 + \sigma_g) W_{jg} = \sigma_g (1 - \eta) \Xi_j A_g L_j^{-\eta}. \tag{2.7}$$

That is, wages are marked down from marginal products of labor (MPL) according to the wedge $\sigma / (1 + \sigma)$. Equilibrium wages are below MPL due to the idiosyncratic horizontal differentiation captured by the Type-1 Extreme Value preference shock. Due to this horizontal differentiation, a firm that is otherwise identical to another will not lose all of its workers if it reduces its wages. This creates individual firm market power in the labor market and results in markdowns from perfectly competitive wages.

2.2.3. *Equilibrium and Worker Utility.* Equilibrium in the labor market constitutes worker decisions $j(i)$, wages $W_{jg}$, labor demand $L_{jg}$, and market wage indexes $\Delta_g$ such that:

(1) Workers optimize over firms according to their utility as reflected in equation (2.2).

(2) Firms set wages $W_{jg}$ optimally to maximize profits, taking the labor supply curve and market wage indices as given, as in equation (2.7), and labor demand $L_{jg} = L_{jg}(W_{jg})$.

(3) Market wage indexes $\Delta_g$ as defined by equation (2.6) are internally consistent and generated from worker optimal decisions.

Finally, total ex-ante worker welfare is given by the usual logsum exponential:

$$U = \sum_g \bar{L}_g \tau \log \left[ \sum_j \exp \left( \frac{\log W_{jg} + \log \Upsilon_g (E_j)}{\tau} \right) \right], \qquad (2.8)$$

reflecting the distribution of wages and ESG across firms.

2.2.4. *Theoretical Results.* We now develop three theoretical results to illustrate how ESG activities by firms can impact the labor market equilibrium. In particular, we examine how ESG activities might impact the allocative efficiency of worker sorting in terms of output, the equilibrium wage differential between skilled and unskilled labor, and worker welfare. All formal proofs are in the appendix.

We first show that, relative to a baseline economy with no firm ESG activities, ESG activities by more productive firms can in fact correct for allocative distortions introduced by firm monopsony power, and thereby improve allocative efficiency and increase economic output.

THEOREM **2.1.** *Suppose that Firm B is more productive than Firm A, that is $\Xi_B > \Xi_A$. Suppose also that Firm A has no ESG activities ($E_A = 0$). Then total economic output $Y = Y_A + Y_B$ is increasing in the ESG activities $E_B$ of Firm B for sufficiently small values of $E_B$.*

Proof. See Appendix Section A.1. ∎

Intuitively, due to the horizontal differentiation across firms, driven by workers' Type-1 Extreme Value idiosyncratic preferences, firms have monopsony power in the labor market. That is, workers are not perfectly elastic in their labor supply across firms. Consequently, there are MPL wedges in the baseline equilibrium without firm ESG activities. That is, the marginal product of labor for skilled and unskilled workers is not equalized across firms. Since efficiency in terms of output requires the absence of MPL wedges, this implies that the baseline equilibrium is inefficient in terms of output.

To understand this, suppose that there were no MPL wedges across firms. Since workers are paid a constant markdown of their marginal productivity of labor, wages for skilled and unskilled workers would be equalized across firms. However, workers would then be equally distributed across the two firms due to the Type-1 Extreme Value

idiosyncratic shocks. Since Firm $B$ is more productive than Firm $A$, this would imply a higher marginal product of labor at Firm $B$, which creates a contradiction. A similar argument shows that the MPLs cannot be higher at Firm $A$ in the baseline equilibrium. If this were the case, wages would be higher at Firm $A$ than at Firm $B$ and more workers would work at Firm $A$. Yet, since Firm $A$ is less productive than Firm $B$, the MPL would be lower at Firm $A$, again leading to a contradiction.

Thus, in the baseline equilibrium, marginal products of labor are higher at Firm $B$. This implies that Firm $B$ hires too few workers, both skilled and unskilled, relative to the labor allocation that would maximize output. At the margin, relative to this baseline, an increase in ESG activities by Firm $B$ corrects for this, since it reallocates skilled workers from Firm $A$ to Firm $B$, reducing the equilibrium MPL wedge and increasing total output.

Another labor market equilibrium outcome of particular interest to both researchers and policymakers is wage inequality across demographics. Using our framework, we show that an increase in ESG activities by the more productive firm not only generates higher total economic output, but also increases the equilibrium wage differential between skilled and unskilled workers. We have the following result:

THEOREM **2.2.** *Suppose that Firm B is more productive than Firm A, that is $\Xi_B > \Xi_A$. Suppose also that Firm A has no ESG activities ($E_A = 0$). Define the total wage bill of skill group g as $W_g = L_{Ag}W_{Ag} + L_{Bg}W_{Bg}$. Then the total wage differential $\Delta_{SU} = W_S - W_U$ between skilled and unskilled workers is increasing in the ESG activities $E_B$ of Firm B for sufficiently small values of $E_B$.*

Proof. See Appendix Section A.2. ∎

This result is subtle and at first glance might appear counterintuitive. Indeed, given the higher valuation of ESG by skilled workers relative to unskilled workers, one might suspect firms could offer lower wages to skilled workers while still attracting the same amount of skilled labor, thus compressing the wage differential. This, however, is partial equilibrium logic.

First, note from Theorem 2.1 that total economic output increases in response to the ESG activities of Firm $B$ due to greater allocative efficiency. It can further be shown that the total wage bill in the economy is a constant fraction $(1 - \eta)\sigma/(1 - \sigma)$ of total economic output. From this, we can conclude that the total wage bill of the economy must increase. It thus suffices to show that the total wage bill of the unskilled workers actually declines in response to a marginal increase in Firm $B$'s ESG activities.

To this end, let us also observe from the previous theorem that the total effective labor rises at Firm $B$ and declines at Firm $A$, which increases unskilled wages at Firm $A$ and

decreases them at Firm $B$. There are now two first-order effects on the total unskilled wage bill to consider in response to a marginal increase in Firm $B$'s ESG activities. First, since unskilled workers do not value ESG, the marginal worker at Firm $B$ switches to Firm $A$. Since the wages at Firm $A$ are lower than those at Firm $B$ in the baseline equilibrium due to the MPL wedge, this lowers the total wage bill at the margin.

Turning to the second first-order effect, unskilled wages decline at Firm $B$ and rise at Firm $A$, which impacts the total wage bill of the inframarginal workers at the two firms. One can show that the increase (decrease) in the total wage bill of the unskilled workers at Firm $A$ (Firm $B$) is proportional to the current wage $W_j$, with proportionality constant $\eta L_{jU}/L_j$ for $j \in \{A, B\}$, equal to the scale parameter multiplied by the ratio of unskilled labor to total effective labor. In the baseline economy, however, the ratio of wages is the same for skilled and unskilled workers, which implies that skilled workers work at Firm $A$ with the same probability that unskilled workers work at Firm $B$. This further implies that the ratio of unskilled labor to total effective labor is the same at both firms, equal to $\bar{L}_U/(\bar{L}_U + A_S\bar{L}_S)$. Thus, the constants of proportionality are the same. Since wages are lower at Firm $A$ in the baseline economy, the increase in the unskilled wage bill of the inframarginal workers at Firm $A$ is dominated by the decline in the unskilled wage bill at Firm $B$.

Thus, both first-order effects are negative, which implies that the total unskilled wage bill declines in response to a marginal increase in Firm $B$'s ESG activities. Since the total wage bill increases, this implies that the increase in wages accrues to the skilled workers, increasing the wage differential between skilled and unskilled workers. Indeed, for the skilled workers, the marginal worker switches from Firm $A$ to Firm $B$ to take advantage of the nonwage amenities that ESG offers. In other words, the increase in the wage bill accrues to skilled workers since they are precisely the workers who respond to the introduction of ESG by migrating to the high-productivity, high-wage firm.

We finally turn to understanding the overall welfare impact of ESG activities on workers. We show that at $E_A = E_B = 0$, the local gradient of worker welfare with respect to ESG increases reflects only the direct utility effect of ESG. Specifically, we have the following result:

THEOREM **2.3.** *Suppose that Firm B is more productive than Firm A. That is, $\Xi_B > \Xi_A$. Further assume that $E_A = E_B = 0$, so that neither Firm A nor Firm B is pursuing ESG activities. Then the local derivative of worker welfare with respect to increases in ESG is given by:*

$$\frac{dU}{dE_{j^*}} = L_{jS}\Upsilon'_S(0),$$

*for $j^* \in \{A, B\}$.*

Proof. See Appendix Section A.3.  ∎

Intuitively, in discrete choice settings, a version of the envelope theorem holds, such that the re-optimizing behavior of workers does not have a first-order effect on total worker welfare. From this it follows that the local impact of an increase in firm ESG activities reflects only the direct utility effect $L_{jS}\Upsilon'_S(0)$ and the inframarginal effects of changes in the log wage. It is straightforward to show that the sum of these inframarginal effects is proportional to $\eta \sum_g (L_{Ag}/L_A - L_{Bg}/L_B)$. But this term is zero in the baseline economy since, as discussed above, the ratio of skilled/unskilled workers to total effective labor is constant across the two firms. Thus, the marginal increase in utility from increasing firm ESG activities, relative to the baseline economy, reflects only the direct effect.

Note that this result hinges crucially on the fact that the returns-to-scale parameter $\eta$ is constant across firms. If this were not the case, then the effect would be proportional to $\sum_g (\eta_A L_{Ag}/L_A - \eta_B L_{Bg}/L_B)$, which would not be equal to zero if $\eta_A \neq \eta_B$. Intuitively, as labor reallocation occurs, wage gains at one firm come at the expense of the other. In the specific case where the returns to scale are constant across firms, the gains and losses exactly offset.[10] Moreover, the sum of the inframarginal effects may not be zero in the presence of existing nonwage amenities, since then the distributions of skilled and unskilled labor across firms may differ.

## 3. Main Data Sources

In this section, we describe the main data sources used in our paper. First, we introduce the administrative data from the Brazilian Ministry of Labor's RAIS database on firms and workers (Section 3.1). Second, we briefly detail the data from the experimental survey we conducted jointly with our partner Catho (Section 3.2). Other secondary, complementary data sources are discussed throughout the paper.

3.1. **Matched Employer-Employee Data.** We leverage the Brazilian Ministry of Labor's RAIS database as our primary source of firm- and worker-level data (Brazilian Ministry of Labor and Employment, 2002–2020). With the exception of the informal sector and a subset of self-employed individuals, RAIS has nearly universal coverage of

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[10]This is analogous to a result in urban economics showing that, in the absence of spatial transfers, relative to the free mobility equilibrium, there are no welfare gains to reallocating workers across space even in the presence of agglomeration or congestion externalities, as long as the agglomeration/congestion spillover elasticity is constant across space. See, for example, Glaeser and Gottlieb (2008), Kline and Moretti (2014), and Fajgelbaum and Gaubert (2020).

Brazil's workforce and is widely considered to be a high-quality census of the formal labor market (Dix-Carneiro, 2014; Helpman et al., 2017). We focus on data from the years 2002 to 2020.

Unique administrative worker identifiers allow for tracking of individuals over time, across firms, and across establishments of the same firm. Following standard practices using RAIS (Colonnelli and Prem, 2022; Bernstein et al., 2022), we keep the highest paying job of the worker in cases where a worker is employed by more than one firm in a given year. Firm- and establishment-specific variables, such as tax identifier, location, and industry, as well as individual-specific variables, such as gender, age, race, and education, allow data aggregation at multiple levels of analysis, as we discuss later in the paper. In addition to information on wages, hiring and firing dates, and demographic characteristics, we also observe rich information on hours worked, reason for hiring and firing, contract details, and granular worker occupations, among other variables.

3.2. **Catho Experimental Survey.** Our experiment relies on an experimental survey we conducted in collaboration with the job-matching platform Catho. Over the period of September to November 2022, Catho sent survey invitation emails in four waves to a subset of active users on their platform. We received 238, 255, 337, and 422 responses, respectively, for a total of 1,252 responses.[11] We excluded respondents who took fewer than 8 minutes or more than 2 hours to complete the survey, resulting in a final sample of 1,206 responses.[12] We cover respondents located across all areas of Brazil, as shown in the map of Appendix Figure A4.

Column (1) of Table II displays the summary statistics of the socioeconomic characteristics of our survey participants. The table shows that 42.95% of respondents are female, 50% are 42 years old or younger, 51.91% identify as white, the median monthly wage is BRL 2,750, and 56.3% have attained a four-year college degree or higher. Columns (2) and (3) of Table II present the same information using the latest available data from RAIS (2020) and PNAD (2022).[13] Overall, the demographics of our survey respondents

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[11]Due to confidentiality reasons and since Catho was responsible for disseminating emails to their clients, we are unable to observe the pool of individuals who received the survey email but did not participate in the study.

[12]In Appendix Table AIV, we show robustness of all our main results using the entire raw sample without removing any low-quality responses. Our results remain largely unchanged.

[13]PNAD (*Pesquisa Nacional por Amostra de Domicílos*) is a large-scale, nationally representative survey conducted quarterly by the Brazilian Institute of Geography and Statistics (IBGE) (Instituto Brasileiro de Geografia e Estatística, 2022). The survey sample is designed to be representative of the entire Brazilian population, providing detailed information on the socioeconomic characteristics of the respondents, including employment status, wage, education level, and other demographics. Importantly, while RAIS only focuses on the formal labor market, PNAD offers accurate information on both the formal and informal labor markets (Rocha et al., 2018).

broadly resemble those of the Brazilian formal labor market with respect to gender, race, and age. However, our survey sample is characterized by individuals who have higher wages and are typically more highly educated. We later report the robustness of our findings by conducting a re-weighting procedure to ensure our sample is representative of the entire Brazilian labor market.

TABLE II. Summary Statistics

|  | Catho Survey | RAIS | PNAD |
|---|---|---|---|
| **Observations** | 1,206 | 31,761,221 | 91,456,031 |
| **Female** | 42.95% | 38.34% | 42.25% |
| **Race** | | | |
| White | 51.91% | 56.16% | 45.12% |
| Mixed | 34.99% | 37.52% | 42.58% |
| Black | 10.86% | 5.67% | 11.15% |
| Asian | 1.08% | 0.50% | 0.77% |
| Native | 0.66% | 0.14 % | 0.35% |
| Other | 0.50% | 0.00% | 0.03% |
| **Age** | | | |
| 1st Qu. | 32.00 | 31.00 | 31.00 |
| Median | 42.00 | 38.00 | 41.00 |
| Mean | 40.83 | 39.63 | 39.76 |
| 3rd Qu. | 47.00 | 47.00 | 55.00 |
| **Wage** | | | |
| 1st Qu. | 1,750.00 | 1,413.32 | 1,212.00 |
| Median | 2,750.00 | 1,854.76 | 1,600.00 |
| Mean | 4,180.14 | 2,871.21 | 2,636.67 |
| 3rd Qu. | 7,500.00 | 2,805.28 | 2,800.00 |
| **Education** | | | |
| Completed PhD | 0.50% | 0.21% | 0.50% |
| Completed Masters | 4.39% | 0.64% | 1.03% |
| Completed College | 51.41% | 19.38% | 27.98% |
| Incomplete College | 16.67% | 6.62% | 4.87% |
| Completed High School | 22.72% | 61.15% | 49.37% |
| Incomplete High School | 2.32% | 5.01% | 8.03% |
| Completed Middle School or Less | 1.99% | 6.99% | 8.22% |

**Notes**: This table provides summary statistics on the survey sample, the 2020 Relação Anual de Informações Sociais (RAIS), and the Q2/2022 *Pesquisa Nacional por Amostra de Domicílios* (PNAD). We report the percentage of female individuals in RAIS using RAIS 2019. We provide additional details on RAIS and PNAD in Section 3. We only focus on the subset of individuals in PNAD that are active in the workforce.

## 4. The Job Rating Experiment

In this section, we describe our main experimental survey design, which aims to estimate job-seekers' preferences for job characteristics and specifically for firms' ESG practices. In Section 4.1, we provide an overview of the experimental design. In Section 4.2, we describe the components of the synthetic job postings. Finally, in Section 4.3, we detail the two main questions we ask job-seekers in their evaluation of job postings.

4.1. **Experimental Survey Design.** Our experiment aims to quantify job-seekers' preferences for corporate ESG practices. Estimating preferences for ESG is empirically challenging for several reasons. First, isolating ESG practices is challenging due to confounding factors: firms engaged in ESG likely differ in observable characteristics from others. Second, different firms may selectively favor certain types of job-seekers, which may impact the equilibrium outcomes in the labor market.

Our experimental survey is inspired by the nondeceptive incentivized resume rating design proposed by Kessler et al. (2019), which aims to estimate preferences (in their case, employers' preferences for resume characteristics) while avoiding deception.[14] In our context, we collaborate with the leading job matching platform in Brazil—Catho (www.catho.com.br)—to invite job-seekers to report their interest in a set of synthetic job postings, whose components—corporate ESG practices, wages, nonwage amenities, among others—are fully randomized by our research team. There is no deception involved as respondents are aware the job postings are hypothetical. Job-seekers have a strong incentive to respond truthfully as we inform them that their ratings will be used to match them to real job openings matching their preferences. Our incentive structure ensures that job-seekers know that accurate ratings will maximize the value of the real job openings received.

4.1.1. *Recruitment.* Catho is responsible for the full implementation of the study. The survey targets only Catho customers, who do not receive any compensation for participating in the survey.[15] We present the survey tool as a new artificial intelligence solution designed to assist Catho in suggesting the most suitable jobs for every individual job-seeker. We report the recruitment email script in Appendix Figure A5. Section 3.2 provides more details on the final sample of 1,206 job-seekers.

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[14]See Low (2021); Macchi (2023); Colonnelli et al. (2024) for applications of this design in a variety of settings, and Harrison and List (2004) for a broader discussion of "framed field experiments."

[15]We only target job-seekers labeled as "engaged" by Catho, namely those that have opened Catho's emails within the past 60 days of our experiment and who are actively looking for employment.

4.1.2. *Survey Structure.* We illustrate the structure of our survey in Appendix Figure A2 and provide the survey text in the supplementary appendix. The survey begins with outlining the goal of the survey and incentives to participate, and confirming consent to proceed.[16] We then provide instructions on how to evaluate job postings using the 1–7 scale rating system. We also provide a brief definition of ESG practices and mention that companies can signal their ESG practices in the job postings. We explicitly tell job-seekers that we consider all job and employer characteristics when analyzing their responses and recommending real job openings that align with their preferences.

We next ask respondents a set of "filtering" questions on their level of education and their preferred professional area. We use these responses to avoid showing job postings that do not elicit any interest from the respondent for mechanical reasons, such as unsuitable job title or prerequisites. Then, we ask job-seekers to rate 20 unique, synthetic job postings, which are discussed in greater detail in the next subsection. Finally, we ask respondents questions about their demographic and socioeconomic characteristics, as well as their views on working for companies with ESG practices.

4.2. **Creating Synthetic Job Postings.** To construct the synthetic job postings, we first conducted a structured manual review of 1,000 randomly selected real job postings from Catho's platform. We analyzed the components of typical job postings, focusing on their content and visual layout, and estimated the probability distribution of each component. With these components and probabilities defined, generating synthetic job postings becomes a straightforward process of randomizing components based on their inclusion probabilities.

Job postings typically consist of a few main categories: primary job characteristics, general firm characteristics, general job characteristics, job prerequisites, hiring stages, and nonwage amenities. ESG characteristics, our focal interest, are typically included as part of the general firm characteristics, but we include and randomize them independently. For content randomization, we assign inclusion probabilities to components using the approximate distribution of actual job postings as a benchmark.

In Appendix Figures A6, A7, A8, and A9, we provide examples of synthetic job postings. In the subsections below, we provide additional details on all job posting categories. A summary of job categories and components, with respective inclusion probabilities, is reported in Appendix Table AI. The full material used to create the synthetic job postings is reported in the supplementary appendix.

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[16]The survey was conducted using the survey software Qualtrics.

4.2.1. *Primary Job Characteristics.* At the beginning of each job posting, we include four key components: (i) job title; (ii) location; (iii) wage; and (iv) contract type. Based on their responses to the filtering questions detailed in Section 4.1.2, respondents are shown relevant job titles and select at least one of interest. Respondents also select their preferred city and state for work, with an option to select additional cities. Job postings always display job title and location.[17] We always include the wage at the top of each job posting. To ensure realism, the wage follows different distributions based on respondents' education level and selected professional area (see the supplementary appendix for details). We also include the type of contract (the Brazilian "work regime") with probability 0.5.

4.2.2. *General Firm Characteristics.* Following the primary job characteristics, we include a brief description of the employer. Drawing inspiration from actual employer descriptions found on firm websites and social media channels, we developed several versions of realistic employer profiles. We randomize the firm's sector, age, number of employees, number of countries in which it operates, and financial strength. We report details on each firm characteristic in the supplementary appendix.

4.2.3. *Firm ESG Characteristics.* For a subset of job postings, we provide information about the firm's ESG activities in two independent ways: (i) ESG signaling sentences and (ii) third-party ESG certifications. There is a 26% unconditional probability that at least one ESG sentence is displayed (with an equal probability that one or two sentences are shown) and a 10% probability that an ESG certification is displayed. ESG signaling sentences highlight the company's efforts in relation to a specific ESG practice. We developed the signaling sentences based on real-world examples of firm ESG statements (e.g., on websites and job postings). We randomize firms' ESG sentences across the following three categories: (i) *environmental* practices, covering topics related to emissions, recycling, land footprint, waste, and energy; (ii) *social* practices, featuring diversity & inclusion and professional development; and (iii) *governance* practices, covering anti-lobbying, anti-bribery and -corruption, and whistleblowing. In the supplementary appendix, we provide the comprehensive list of ESG sentences shown to respondents.

For third-party ESG certifications, we include the certification logo and a descriptive sentence based on similar statements made by certified corporations. We randomly select one of three common real-world ESG certifications: *B Corp*, *Great Place to Work*, and

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[17]In the supplementary appendix, we tabulate the job titles available to respondents based on their level of education and professional area and report the complete list of cities by state.

*Green Business Bureau.* We provide additional details on these ESG certifications in the supplementary appendix. If a job posting does not include ESG information, we include an "auxiliary sentence" (that is, a filler sentence) to match the approximate length of job postings containing ESG information. This ensures our experimental estimates do not pick up spurious effects related to textual length.

4.2.4. *General Job Characteristics and Job Prerequisites.* Next, we independently randomize several general job characteristics: (i) on-the-job opportunities; (ii) on-the-job activities; (iii) workload; and (iv) work-from-home arrangements. We also always include an "auxiliary sentence" about the job opening to provide additional structure to the job posting. We designed the job prerequisites to be sufficiently broad to not discourage respondents from the job opportunity. We also always include major requirements for all respondents who have completed college and when prerequisites are displayed.[18]

4.2.5. *Hiring Stages.* Next, we specify the hiring stages for the position. We select the hiring stages by randomizing from the following categories: (i) application, (ii) online assessments, (iii) other assessments, and (iv) final interview (see the supplementary appendix for details).

4.2.6. *Nonwage Amenities.* Finally, we add several nonwage amenities to each job posting. We classify nonwage amenities into two categories: (i) "amenities," which includes all nonmonetary nonwage amenities, such as wellness programs or office gyms; and (ii) "benefits," which consists of all monetary nonwage amenities, such as food or transportation allowances. We randomly draw between 2–4 nonwage amenities. For a description of all nonwage amenities, see the supplementary appendix.

4.3. **Rating Jobs.** We measure job-seekers' interest in specific job and firm characteristics by asking respondents to evaluate a random set of 20 synthetic job postings.[19] A key advantage of our experimental methodology is that we can obtain more granular measures of job-seekers' preferences compared to correspondence study approaches that solely rely on call-back rates (Kessler et al., 2019). We use a 7-point Likert scale to measure the rating, which allows us to observe job-seekers' preferences towards characteristics of inframarginal job postings. Our main dependent variable is captured by the following question:

(1) *"How interested would you be in receiving an offer for this job position?"*

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[18]For a complete list of general job characteristics and job prerequisites, see the supplementary appendix.
[19]For each respondent, the 20 synthetic job postings are randomly drawn (with replacement) from the pool of all possible job postings generated by our process of content randomization as described in Section 4.2.

We measure the response on a scale of 1 to 7, where 1="Moderately interested" and 7="Dream job!"[20] We indicate the responses to this question as *Interest*, which represents our main dependent variable, to capture how interested a job-seeker is in a given job posting. We also specify: "Imagine that the employer guarantees you a job offer—consider only your perception of the quality of the position." This allows us to isolate the job-seeker's interest in the job posting from their perceived hiring chances.

We then ask an additional question to further motivate job-seekers to strictly focus on their interest in the given employer's job posting when answering the main question. On its own, this additional question allows us to explore job-seekers' perceptions about the likelihood of receiving an offer from an employer. The question asks the following:

(2) *"How likely do you think it is that the company will offer you the position?"*

We measure the response on a scale of 1 to 7, where 1="Not likely" and 7="Extremely likely." We also specify: "Imagine that you applied for the job—consider only whether you think the employer would make you an offer based on your qualifications and experience."

## 5. Estimating Preferences for ESG

In this section, we describe our experimental results. In Section 5.1, we outline the econometric specifications used to analyze our survey experiment. In Section 5.2, we report our main results on average preferences for job posting characteristics, and specifically for corporate ESG practices. In Section 5.3, we show heterogeneities across socioeconomic groups. In Section 5.4, we discuss additional results and robustness checks.

5.1. **Estimating Equations.** We estimate specifications of the following form:

$$Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 \ln\left(Wage_{ij}\right) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + \epsilon_{ij}, \qquad (5.1)$$

where $i$ indicates the job-seeker who is responding to the survey, and $j$ indicates the synthetic job posting that is evaluated. *Interest* is our main dependent variable, which indicates the level of interest a respondent has in a given job posting as described in Section 4.3. The main parameter of interest is $\beta_1$, which measures the average effect of rating a job posting with ESG information about the employer relative to one without any ESG signal. Specifically, *ESG* is a binary indicator equal to one if the job posting contains an ESG signaling sentence or third-party ESG certification, as detailed in Section 4.2.3.[21] Given that the job postings consist of a randomized set of features (of

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[20]The rating scale is set to begin at "Moderately Interested" because our initial filtering questions ensure that respondents have at least a moderate interest in all job postings being presented to them.
[21]In additional analyses we will also include different indicator variables for different ESG sentences and for ESG sentences versus actual certifications.

which ESG is one of many), $\beta_1$ allows us to capture an unbiased estimate of individual preferences for ESG. We use heteroscedasticity-consistent (robust) standard errors for statistical inferences (Abadie et al., 2023).

The parameters $\beta_2$, $\beta_3$, and $\beta_4$ capture job-seekers' average preferences for wages, nonwage amenities, and the employer's financial strength, respectively. *ln(Wage)* is the natural logarithm of the monthly wage shown on the job posting. *NWA* is the number of nonwage amenities. *FS* is a binary indicator equal to one if the job posting contains information signaling the firm is performing well financially.

5.2. **Average Job-Seeker Preferences.** We report our main experimental results in Table III. In particular, we show regression results where the dependent variable is *Interest*, which measures the job-seeker's interest in job postings on a scale of 1–7.[22] We control for strata fixed effects, which are binary indicators for each combination of education level and professional area that respondents select in the filtering questions. This ensures that our analysis treats all components in the job postings presented to an individual as independently randomized.

We uncover the presence of a large *responsible firm premium*. The *ESG* coefficient in Column (1) is positive and statistically significant at the 1% level, indicating that, on average, job-seekers prefer to work for companies that signal their ESG practices in job postings. This result remains robust when we control for socioeconomic characteristics of the respondent (Column (2)), and when we include individual fixed effects (Column (3)).

Not surprisingly, our respondents also have a preference for higher-paying jobs and for jobs with more nonwage amenities, as indicated by the positive coefficients on *ln(Wage)* and *NWA*. Reassuringly, these findings likely indicate that the respondents are paying attention when rating jobs. On the other hand, signals of the company's financial strength do not affect job ratings. This latter finding indicates that the positive preference for ESG is unlikely to be driven by individuals thinking that firms with ESG signals are also more financially responsible employers, or employers that have a lower likelihood of shutting down.

We can further quantify the average ESG preference in monetary terms. In Appendix Table AVI we run an identical specification to equation (5.1), but where we include the wage in *levels* (in BRL 1,000). We find that, on average, ESG signals elicit the same marginal interest in a job posting as approximately a BRL 426 increase in monthly salary. Such an increase is equivalent to 10% (15%) of the mean (median) monthly wage

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[22]We report the distribution of interest scores in Appendix Figure A10.

TABLE III. Job-Seekers' Preferences for Corporate ESG

|  | *Interest* (1) | *Interest* (2) | *Interest* (3) |
|---|---|---|---|
| ESG | 0.098*** (0.026) | 0.099*** (0.025) | 0.085*** (0.020) |
| Ln(Wage) | 1.117*** (0.031) | 1.130*** (0.030) | 1.205*** (0.026) |
| Nonwage Amenities | 0.059*** (0.014) | 0.060*** (0.014) | 0.064*** (0.011) |
| Financial Strength | −0.003 (0.041) | −0.006 (0.040) | 0.015 (0.032) |
| Observations | 24,120 | 24,120 | 24,120 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: This table reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Demographic\ controls_i + e_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Individual FE + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. $ESG$ is an indicator variable equal to one if the job posting displays at least one ESG sentence or certification. $ln(Wage)$ is the natural logarithm of the monthly wage displayed in the job posting. $NWA$ is equal to the number of nonwage amenities. $FS$ is an indicator variable equal to one if the job posting displays a signal of financial strength. See supplementary appendix for additional details. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

of our survey respondents, who, as shown in Table II, earn above-average wages.[23] The same increase in wage is equivalent to 15% (23%) of the mean (median) monthly wage in the entire formal sector (as seen in the RAIS summary statistics of Table II).

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[23]The estimates are similar in magnitude to the wage differences between similar workers at ESG and non-ESG firms documented by Krueger et al. (2023) in administrative data from Sweden.

A unique feature of our experimental design is that we are independently cross-randomizing a number of other features that typically appear in the job postings, including those that have been studied in prior work, such as the dominant role played by flexible work-from-home policies in attracting employees' interest during the recent Covid pandemic—issues very much salient at the time of our survey (Barrero et al., 2021). As a result, we can precisely benchmark the impact of ESG signals on eliciting interest from job-seekers to that of other nonwage amenities and firm characteristics. We do so in Figure 1. In Panel A, we segment the point estimates into four categories: ESG signals, work-from-home arrangements, nonwage amenities, and multinational status. Our results underscore that, on average, job-seekers place greater value on ESG signals than on most other nonwage amenities. In Panel B, we provide a granular breakdown of both ESG signals (comprising environmental, social, and governance sentences and three ESG certifications) and various types of nonwage amenities. Notably, we find work-from-home arrangements are highly attractive to job-seekers; ESG signals elicit the equivalent of about 60% as much interest among job-seekers as work-from-home arrangements. They are comparable in magnitude to food allowances or private pension plans, but hold greater significance than the majority of other nonwage amenities, such as working for a multinational company, various food and medical allowances, as well as mentoring, training, and professional development programs.

5.3. **Heterogeneity Across Socioeconomic Groups.** So far, we have documented an economically meaningful ESG preference for the average job-seeker in our sample. An important goal of our paper is to understand the quantitative implications of ESG for talent allocation in the labor market. To do so, in Section 6.3, we will combine the reduced-form estimates from our experimental work with administrative match employer-employee data to structurally estimate an equilibrium model of the labor market. A key aspect of our model is that it features workers with heterogeneous ESG preferences (see Sections 2.2 and 6.1). In Table IV, we explore this heterogeneity and examine whether job-seekers' preferences for ESG vary across socioeconomic groups.

To do so, we first classify job-seekers into binary partitioning groups based on their level of education (1 if college degree or higher, Column (1)); race (1 if white, Column (2)); political views (1 if liberal or moderate, Column (3)); age (1 if 45 years old or younger, Column (4)); and gender (1 if female, Column (5)). We then interact *ESG* with the partitioning indicators (*ESG Interaction*) and control for strata and individual fixed effects. The individual fixed effects absorb the main effects of the partitioning indicators.
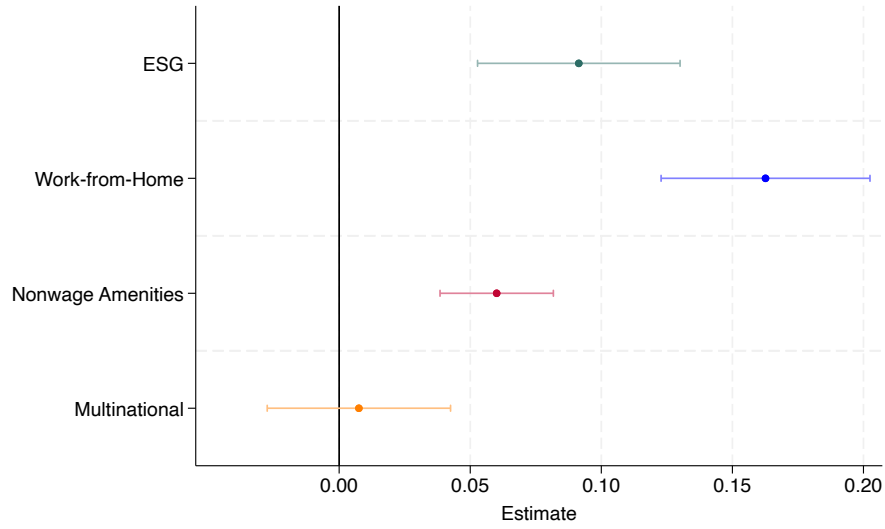
**A.** Aggregate ESG Signals and Nonwage Amenities
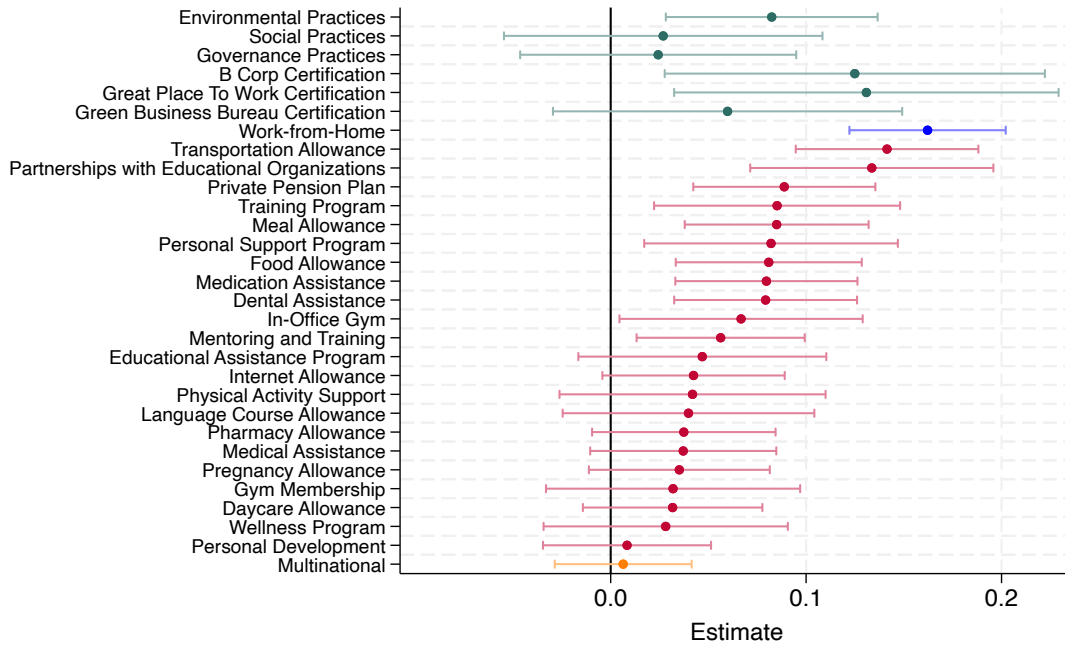


**B.** Granular ESG Signals and Nonwage Amenities

FIGURE 1. ESG Signals and Nonwage Amenities on Job-Seeker Interest

**Notes**: Panel A shows the estimates and 95% confidence interval for the coefficients $\beta_2$ to $\beta_5$ for the regression: $Interest_{ij} = \alpha + \beta_1 Wage_{ij} + \beta_2 ESG_{ij} + \beta_3 WFH_{ij} + \beta_4 NWA_{ij} + \beta_5 Multinational_{ij} + IndividualFE + e_{ij}$. Panel B shows the estimates and 95% confidence interval for the coefficients $\beta_2$ to $\beta_8$ for the regression: $Interest_{ij} = \beta_0 + \beta_1 Wage_{ij} + \beta_2 Enviromental_{ij} + \beta_3 Social_{ij} + \beta_4 Governance\epsilon_{ij} + \beta_5 BCorp_{ij} + \beta_6 GPTW_{ij} + \beta_7 GBB_{ij} + \sum_{k=1}^{N} \alpha_k NWA_{ijk} + \beta_8 Multinational_{ij} + IndividualFE + \epsilon_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. $NWA$ is equal to the number of nonwage amenities. $NWA_k$ is an indicator variable equal to one if the $k_{th}$ out of $K$ nonwage amenities is displayed in the job posting.

In Table IV Column (1) to (3), the coefficient on *ESG Interaction* is positive and statistically significant at the 95% level or higher, indicating that ESG preferences are significantly stronger for individuals who are highly educated, white, and self-identify as politically liberal or moderate. In fact, the main effect on *ESG* is close to zero and statistically insignificant for all three columns, implying that less-educated, non-white, and politically conservative job-seekers do not have preferences to work for ESG-responsible firms. In contrast, in Column (4) and (5), we examine the roles of gender and age but do not find statistically significant differences in ESG preferences.

TABLE IV. Heterogeneous Preferences for ESG Across Socio-Economic Groups

|  | (1) High Education | (2) White | (3) Liberal or Moderate | (4) Young | (5) Female |
|---|---|---|---|---|---|
| ESG Interaction | 0.114*** | 0.078** | 0.093** | −0.047 | −0.015 |
|  | (0.040) | (0.039) | (0.039) | (0.040) | (0.040) |
| ESG | 0.020 | 0.044 | 0.040 | 0.114*** | 0.091*** |
|  | (0.030) | (0.028) | (0.027) | (0.031) | (0.025) |
| Ln(Wage) | 1.207*** | 1.205*** | 1.205*** | 1.205*** | 1.205*** |
|  | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) |
| Nonwage Amenities | 0.063*** | 0.064*** | 0.064*** | 0.064*** | 0.064*** |
|  | (0.011) | (0.011) | (0.011) | (0.011) | (0.011) |
| Financial Strength | 0.015 | 0.015 | 0.015 | 0.015 | 0.015 |
|  | (0.032) | (0.032) | (0.032) | (0.032) | (0.032) |
| Observations | 24,120 | 24,120 | 24,120 | 24,120 | 24,120 |
| Individual FE | Yes | Yes | Yes | Yes | Yes |
| Strata FE | Yes | Yes | Yes | Yes | Yes |

**Notes**: This table reports the coefficients for the following specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} \times SDC_{ij} + \beta_2 ESG_{ij} + \beta_3 ln(Wage_{ij}) + \beta_4 NWA_{ij} + \beta_5 FS_{ij} + IndividualFE + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. $SDC$ is an indicator representing respondents' socio-demographic characteristics and equal to one if: in Column (1), the respondent has completed college; in Column (2), the respondent is white; in Column (3), the respondent self-identifies as liberal or moderate; in Column (4), the respondent is 45 years old or younger; and, in Column (5), the respondent is female. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

5.4. **Additional Results and Robustness Tests.** In this section, we present several additional results and robustness tests. First, we unpack job-seekers' ESG preferences into several more granular features of ESG. In Appendix Table AIII Panel A, we find

that both the (uncertified) description of the employer's ESG practices and third-party ESG certifications have a significant positive effect on job-seekers' preferences. The impact of an ESG certification is almost twice the magnitude of an ESG signal without certification. In Appendix Table AV, we report results split by environmental, social, or governance activity and type of ESG certification. We find that environmental sentences and B Corp certifications are the only ESG signals that have a significant positive effects on respondents' preferences. We corroborate these results using open-ended responses to the following survey question: "*When you think of working for companies with Environmental, Social and Governance (ESG) practices in place, what are the main considerations that come to mind?*" In Appendix Figure A11, we generated word clouds for the most common words and bigrams. The word clouds show that "environment" and "care environment" appear most frequently, indicating that the majority of respondents primarily value employers' environmental practices when considering working for a company with strong ESG practices. These open-ended responses are useful as they corroborate our experimental findings, indicating that individuals' answers align with the outcomes observed in our experiment.

Second, we rely on the above open-ended responses to also better understand how respondents might interpret the ESG signals in the job postings. Specifically, we train research assistants to categorize responses into those that associate ESG with better "Monetary or Job-Related Benefits" (e.g., better future financial prospects, more stability, etc.) versus those that interpret ESG positively because they resonate with respondents' "Values." Of the responses we are able to distinctly categorize into one of these two main categories, we find that the vast majority of respondents (92%) point to the importance of *shared values* as a mechanism through which respondents interpret the ESG signals.[24]

Third, we estimate the effect of ESG signals on respondents' reciprocal interest in job postings using the second rating question described in Section 4.3. This question measures respondents' perception of how likely they are to receive a job offer for the position given their qualifications. We report the results in Appendix Table AVII and observe no effect of ESG signaling on this second measure. On average, respondents do not believe that employers' ESG practices impact their likelihood of receiving a job offer.

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[24]We are able to clearly categorize according to this framework a total of 672 responses. We drop from this analysis the "other" responses—which include blank text and other responses that capture a variety of thoughts that are less explicitly focused on values or monetary benefits.

Fourth, we perform multiple robustness tests to confirm the validity of our findings. In Appendix Table AVIII, we show that our results remain robust when we use a re-weighting technique that ensures our sample is representative of the Brazilian population in all socio-demographic dimensions. Next, our results hold for all possible combinations of socioeconomic controls, which we illustrate in Appendix Figure A12 with a stability plot for our *ESG* coefficient. Finally, our results also continue to hold when we add controls for job posting characteristics.[25]

## 6. Quantitative Impact of ESG on Equilibrium Labor Outcomes

Motivated by our theoretical model and reduced-form results, we now turn to understanding the quantitative implications of ESG for the labor market equilibrium. We are particularly interested in examining quantitatively how a firm's engagement in ESG activities might impact the allocation of labor across heterogeneous firms, wage inequality between different demographic groups, allocative efficiency and, ultimately, worker welfare. To achieve this objective, we build on the model of Section 2.2 to develop a rich structural model of the labor market that incorporates heterogeneous workers and firms, as well as both vertical and horizontal differentiation across firms.

Combining the reduced-form estimates from our experimental work with rich employee-employer matched administrative data, we estimate the structural parameters of the model that govern labor supply and labor demand. Subsequently, we use the estimated structural model to perform counterfactual simulations that illustrate the impact of firm ESG activities on equilibrium wage differentials, total economic output, and total worker welfare.

6.1. **Model.** As in Section 2.2, we assume that the labor market is comprised of a large number of workers indexed by $i$. On the other side of the market, there is now a large number $J$ of firms, which we index as $j = 1, ..., J$. Workers have heterogeneous preferences over firm wages and nonwage amenities. Firms compete according to monopsonistic competition for workers.

There is a total mass of workers, which we denote as $\bar{L}$. We now allow for workers to belong to some demographic group $g = 1, ..., G$, which captures rich worker characteristics such as education level, race, and gender. The total mass of demographic $g$ is denoted as $\bar{L}_g$. As in Section 2.2, workers inelastically supply one unit of labor and have

[25]Specifically, job posting characteristics include the number of on-the-job activities, number of on-the-job opportunities, firm industry, firm establishment year, number of job prerequisites, and a binary indicator equal to one if the job posting is not located in the respondent's primary chosen city.

preferences over the wage and nonwage amenities, including the ESG activities of the firm.

In particular, the utility of worker $i$ at firm $j$ is given by:

$$u_{ijt} = \log W_{jg(i)t} + \log \Upsilon_{g(i)} (E_{jt}) + \log \Theta_{g(i)} (X_{jt}) + \tau_{g(i)} \varepsilon_{ijt}, \qquad (6.1)$$

where $g(i)$ denotes the demographic group of worker $i$, $\varepsilon_{ijt}$ is a Type-1 Extreme Value idiosyncratic shock, $E_{jt}$ is the ESG rating, and $X_{jt}$ are other nonwage amenities. We normalize the ESG utility such that $\Upsilon_{g(i)} (E_{jt} = 0) = 1$. Following the same logic as in Section 2.2, the equation:

$$Pr (j_t (i) = j) = \frac{\left[ W_{jg(i)t} \Upsilon_{g(i)} (E_{jt}) \Theta_{g(i)} (X_{jt}) \right]^{1/\tau_{g(i)}}}{\sum_{j'} \left[ W_{j'g(i)t} \Upsilon_{g(i)} (E_{j't}) \Theta_{g(i)} (X_{j't}) \right]^{1/\tau_{g(i)}}} \qquad (6.2)$$

gives the probability that worker $i$ chooses to work at firm $j$.

Firms are heterogeneous in their ESG ratings $E_{jt}$, nonwage amenities $X_{jt}$, total factor productivities $\Xi_{jt}$, and demographic-specific productivity multipliers $A_{jgt}$. In each period, a firm produces according to the isoelastic value added production function given in equation (2.3) in Section 2.2, where the total amount of effective labor employed $L_{jt}$ is given by equation (2.4).

Firms again face an upward-sloping labor supply curve for each demographic group $g$ given by equation (2.5), taking the overall market wage index in equation (2.6) as given. Note that we now allow the labor supply elasticity to be demographic specific, equal to $\sigma_g = 1/\tau_g$. Firms maximize profits and set equilibrium wages according to equation (2.7) in Section 2.2.

Equilibrium in the labor market constitutes worker decisions $j(i)$, wages $W_{jgt}$, labor demand $L_{jgt}$, and market wage indexes $\Delta_{gt}$ such that workers optimize over firms, firms set wages optimally, and the market wage indexes are internally consistent and generated from worker decisions, as described in Section 2.2.3.

6.2. **Identification.** In this subsection, we describe how we use our randomized experiment and matched employee-employer data to estimate the structural parameters governing labor supply and labor demand in our model. This will allow us to quantitatively understand the distributional consequences of firm ESG ratings and to perform counterfactual analyses.

6.2.1. *Labor Supply.* The key structural parameters governing labor supply are $\tau_g$, $\Upsilon_g (E_j = 1)$, and $\Theta_g (X_{jt})$. For each demographic group, these parameters represent the dispersion of the idiosyncratic preference shock, the utility multiplier effect of firm

ESG activities, and the valuation of other nonwage amenities $X_{jt}$, respectively. We estimate the first two of these structural parameters, $\tau_g$ and $\Upsilon_g\left(E_j=1\right)$, using our experimental results. Given a set of firm wages, ESG ratings, and other nonwage amenities, respondents provide a complete ranking of the possible choices. Similar to the derivation of equation (6.2), which provides the probability that any given option is optimally chosen, Beggs et al. (1981), Hausman and Ruud (1987), and Allison and Christakis (1994) extend the analysis of the logit model to derive a maximum likelihood estimator for rank-ordered data. We implement this procedure using our experimental data to recover the labor supply structural parameters. In particular, the coefficient on the log wage recovers $\sigma_g = 1/\tau_g$, the elasticity of labor supply, while the coefficient on the ESG dummy recovers $\Upsilon_g\left(E_j=1\right).$

Subsequently, we use our employee-employer matched data to recover a nonwage amenity valuation $\Theta_g\left(X_{jt}\right)$ at the individual firm level.[26] Using the historical data, we assume first that $E_j = 0$ for all firms in prior years. We consider this a reasonable assumption since, in the past, ESG practices were not widely documented and were likely not salient to most workers. Normalizing $\Theta_g\left(X_{jt}\right) = 1$ for a single baseline firm $j^*$, we then recover from equation (6.2):

$$\Theta_g\left(X_{jt}\right) = \left(\frac{L_{jt}}{L_{j^*t}}\right)^{\tau_g}\frac{W_{j^*t}}{W_{jt}}.$$

That is, the $\Theta_g\left(X_{jt}\right)$ are structural residuals that rationalize the actual employment shares we see in the data.

6.2.2. *Labor Demand.* Given the parameters governing labor supply, the key structural parameters governing labor demand are firm TFP $\xi_{jt}$, the productivity $a_{jg}$ of demographic $g$ at firm $j$, and the firm return-to-scale parameter $\eta$. In the subsequent analysis, we allow lowercase variables to denote logs, i.e. $w_{jt} \equiv \log W_{jt}$. To proceed, we first assume the following data-generating process for firm TFP:

$$\xi_{jt} = \bar{\xi}_t + \bar{\xi}_j + \omega_{jt}.$$

This implies TFP is determined by a time fixed effect shared by all firms, a firm fixed effect, and a firm-specific transitory component.

Taking logs of the labor demand equation gives:

$$w_{jgt} = c_g + \xi_{jt} + a_{jg} - \eta l_{jt},$$

[26]We selected firms from our employee-employer dataset (RAIS) that had more than 10 employees each year from 2002 to 2020. Typically, these firms are the ones that engage in ESG initiatives and advertise job openings on the Catho platform.

where:

$$c_g = \log \left[ \frac{(1 - \eta)\,\sigma_g}{1 + \sigma_g} \right]$$

$$l_{jt} = \log \left[ \sum_g A_{gj} L_{gjt} \right].$$

Here, $c_g$ is a demographic-specific constant determined by the return-to-scale parameter $\eta$ and firm markdowns $\sigma_g/(1 + \sigma_g)$. The log of effective labor at firm $j$ is given by $l_{jt}$. Substituting the specification for firm TFP, we get:

$$w_{jgt} = c_g + \bar{\xi}_t + \bar{\xi}_j + a_{jg} - \eta l_{jt} + \omega_{jt} + \nu_{jgt},$$

where we also allow for an i.i.d. measurement error term $\nu_{jgt}$.

As discussed above, we estimate $\sigma_g = 1/\tau_g$ from our randomized experiment. Thus, we need to estimate the time fixed effects $\bar{\xi}_t$, the firm fixed effects $\bar{\xi}_j$, the firm-specific demographic productivity $a_{jg}$, and the return-to-scale parameter $\eta$. The key endogeneity problem is that $l_{jt}$ is correlated with the error $\omega_{jt}$. More productive firms will hire more workers. This would bias the OLS regression estimate of $\eta$. We therefore calibrate $\eta$ based on previous work. In particular, we set $\eta = 0.21$ based on Lamadon et al. (2022).

We next normalize the demographic group $g = 0$ to $a_{j0} = 0$. We can then identify the firm-specific demographic productivities $a_{jg}$ from the moment:

$$E\left[w_{jgt} - w_{j0t} - c_g - c_0 - a_{jg}\right] = E\left[\nu_{jgt} - \nu_{j0t}\right] = 0.$$

That is, the difference in log wages at firm $j$ determines the relative productivities of different demographics at firm $j$. Consequently, we have the following moments to determine the TFP time and firm fixed effects:

$$E\left\{D_t \left[w_{jgt} - \left(c_g + \bar{\xi}_t + \bar{\xi}_j + a_{jg} - \eta l_{jt}\right)\right]\right\} = 0$$

$$E\left\{w_{jgt} - \left(c_g + \bar{\xi}_t + \bar{\xi}_j + a_{jg} - \eta l_{jt}\right)\right\} = 0,$$

where $D_t$ is a time indicator variable.

6.3. **Estimation.** For our baseline specification, we estimate our model with two demographic groups: skilled workers, characterized by those with a college degree, and unskilled workers, representing those without a college degree. As described in the previous subsection, we implement a rank-ordered logit maximum-likelihood estimation on our experimental data. This approach allows us to recover the labor supply parameters that determine the dispersion in worker idiosyncratic preferences and the valuation of firm ESG activities.

The results from this estimation are reported in Appendix Table AIX. Assessing worker valuation of firm ESG, we observe a high degree of consistency with our earlier reduced-form results. Specifically, skilled workers place significantly greater value on high-ESG firms compared to unskilled workers. Quantitatively, skilled workers value firm ESG activities as equivalent to a 0.150-point increase in the log wage. This result is highly statistically significant at the 1% level. Conversely, unskilled workers value firm ESG activities as equivalent to a 0.014-point increase in the log wage. This valuation is statistically indistinguishable from zero. Both demographic groups appear to value other nonwage amenities, although the point estimate is larger for skilled workers.

In addition to the valuation of firm ESG activities, a key structural parameter for our counterfactual simulations is the dispersion in idiosyncratic preferences $\tau_g$, which determines the labor supply elasticity $\sigma_g = 1/\tau_g$. We can determine the implied labor supply elasticity $\sigma_g$ as the coefficient on the log wage in the rank-ordered logit. Our analysis shows that these implied elasticities exhibit a broad similarity between the two demographic groups, albeit with unskilled workers appearing slightly more elastic. These estimates imply that structural parameters $\tau_g = .943$ for unskilled workers and $\tau_g = 1.066$ for skilled workers.

With these estimates in place, we recover estimates of TFP $\bar{\xi}_j$, the worker multiplier $a_{jg}$, and the nonwage amenity valuation $\Theta_g(X_j)$ at the individual firm level. One natural question that arises is the extent to which firm TFP $\bar{\xi}_j$ is correlated with the firm-specific skilled worker productivity $a_{jg}$. That is, are skilled workers more productive at high-TFP firms? We find this to be the case. Appendix Figure A3 shows the binscatter of firm TFP against the skilled worker productivity shifter and demonstrates a clear positive relationship. Specifically, as reported in Appendix Table AX, a 10% increase in firm TFP increases the skilled worker productivity multiplier by 1.26%, statistically significant at the 1% level.

To achieve dimensional reduction for our counterfactual analysis, we use k-means clustering to identify natural groupings based on these characteristics. In our baseline specification, we use 10 clusters derived from a k-means clustering procedure on the $\bar{\xi}_j$, $a_{jg}$, and $\Theta_g(X_j)$ firm characteristics. As a test of robustness, we also conduct k-means clustering with 20, 30, 40, and 50 clusters, confirming the consistency of our quantitative results.

6.4. **Counterfactuals.** Using our structural estimates, we evaluate how firm adoption of ESG might impact the labor market equilibrium. First, we estimate a surface of counterfactuals by varying both which clusters adopt ESG and the probability of ESG adoption within each cluster. Specifically, we assume that there is a TFP cutoff $\xi^*$ such

that only firms in clusters with a TFP $\xi_j$ exceeding $\xi^*$ will adopt ESG practices. This captures the idea that only highly productive, profitable firms may find it worthwhile to expend the fixed costs involved in adopting ESG practices. Furthermore, for those clusters satisfying this productivity condition, the probability that any given firm within the cluster adopts ESG practices is denoted by $\phi \in [0,1]$. This allows for firms within a cluster to pursue or not pursue ESG for potentially idiosyncratic reasons. To construct the counterfactual surfaces, we repeatedly solve for the labor market equilibrium as we vary $\xi^*$ and $\phi$. We are particularly interested in how the presence of ESG as a nonwage amenity impacts worker utility, total output, and the wage differentials between skilled and unskilled workers.

We present the results of these counterfactual simulations in Figure 2. Panel A shows the impact of ESG on the equilibrium wage differential between skilled and unskilled workers. The figure shows that the presence of ESG *increases* the wage differential on the order of 0–4% relative to the baseline economy with no ESG. At first, this might appear counterintuitive. After all, skilled workers earn higher wages than unskilled workers in the baseline economy. Moreover, from Appendix Table AIX it is clear that skilled workers value ESG more than unskilled workers. Thus, it might appear that a firm could offer lower wages to skilled workers and attract the same amount of skilled labor, thus compressing the wage differential. This, however, is partial equilibrium logic. To see how this can break down, imagine for example that all firms in the economy adopt ESG practices. Then, from equation 6.2, it is clear that there will be no impact on equilibrium wages. Since all firms adopt ESG practices, these practices do not offer a competitive advantage to any single firm. Thus, since markets need to clear and firms are in competition with each other, firms offer exactly the same wages as they do in the baseline economy with no ESG practices. This intuition can be seen in the top left corner of Figure 2 Panel A.

When not all firms adopt ESG practices, there will be an adjustment of labor and wages. Relative to firms that do not offer ESG but are otherwise identical, firms that do offer ESG will feature more workers and lower wages. Thus, relative to the baseline economy, firms with more effective labor will offer lower wages. However, this redistribution will also cause wages to be higher at those firms with now lower effective labor, since the MPL will be higher at those firms.

To better understand why ESG leads to a higher equilibrium wage differential, it is instructive to examine Panel B of Figure 2. This panel shows that the introduction of ESG increases total output in the economy on the order of 0–70 bps, with the increases arising when higher TFP firms implement ESG practices. Note that in the baseline

FIGURE 2. Model Counterfactuals



**A.** **Skilled Wage Differential**

**B.** **Total Output**

**C.** **Worker Utility**
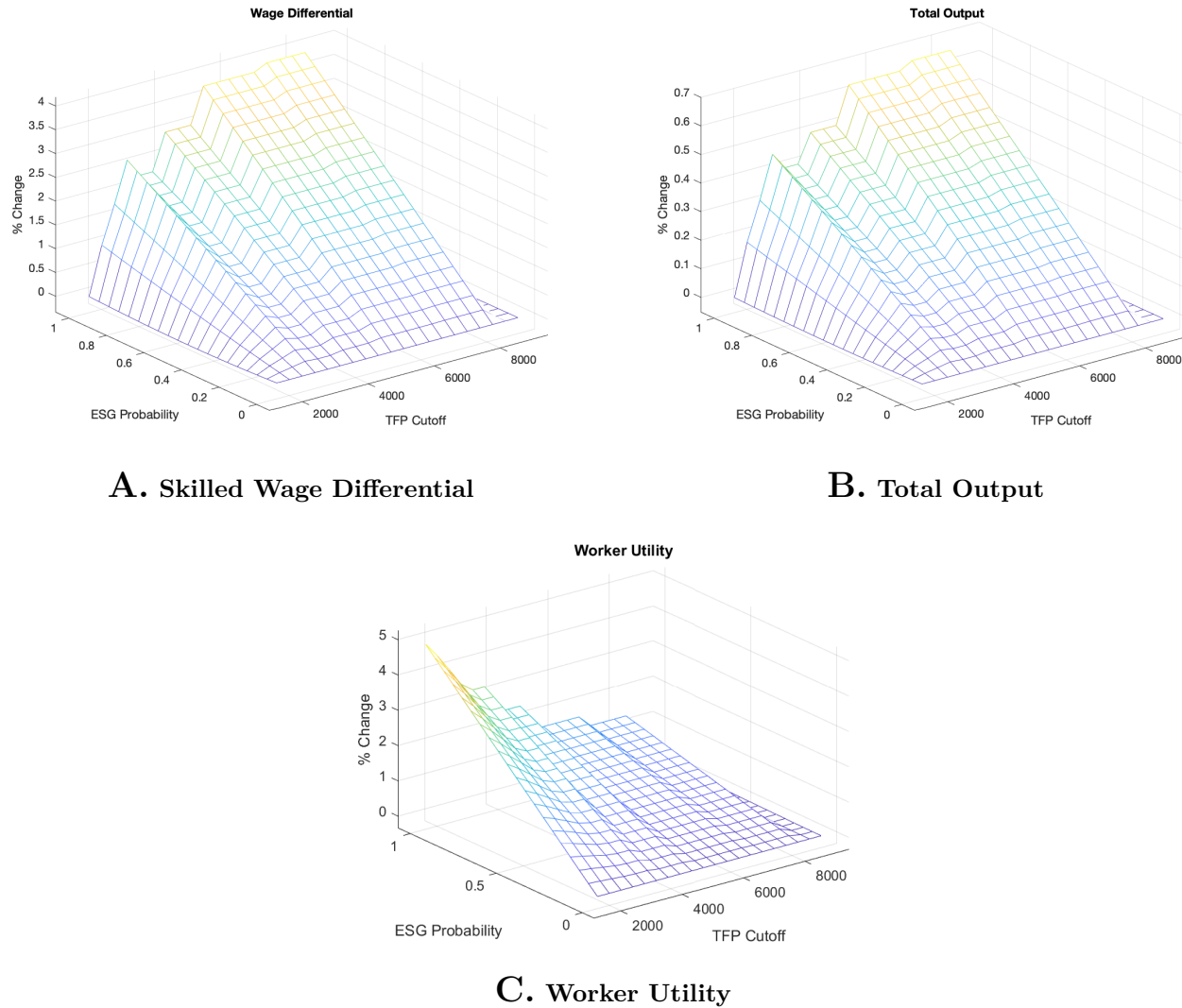
**Notes**: This figure presents the results of our counterfactual simulations, which evaluate how firm adoption of ESG might impact the labor market equilibrium. We show the relationship between the TFP cutoff $(\xi^*)$ and the probability that firms will adopt ESG practices $(\phi \in [0, 1])$, and repeatedly solve for the labor market equilibrium as we vary $\xi^*$ and $\phi$. Panel A shows the impact of ESG on the equilibrium wage differential between skilled and unskilled workers. Panel B shows the impact of ESG on the total output in the economy. Panel C shows the impact of ESG on worker utility. For additional details on the counterfactual simulations, see Section 6.4.

economy, the equilibrium is allocatively inefficient in terms of output. This arises due to two forces. First, firms have monopsony power, which leads to equilibrium MPL wedges that result in inefficiently low amounts of workers at high-productivity firms. Second, nonwage amenities distort the labor allocation away from the one that would maximize total output.

As noted above, when not all firms implement ESG practices, there is a reallocation of labor between firms. When sufficiently low TFP firms do not implement ESG practices, this reallocation of labor leads to a more allocatively efficient distribution of labor across firms, which increases total output. This is also precisely why the wage differential in the economy increases on the order of 0–4%. Due to economy-wide resource constraints, the increase in output will translate to a higher total wage bill in the economy. To whom does this increased wage bill accrue? In fact, it largely accrues to the skilled workers, who make up 21% of the total population, since these are precisely the workers who value ESG and thus move in response to the introduction of ESG.[27]

Panel C of Figure 2 shows the impact of ESG on worker utility. Perhaps unsurprisingly, since our experiment reveals that workers do value ESG, we find that the introduction of ESG increases worker utility. Quantitatively, ESG practices increase worker utility on the order of 0–5%, as measured in wage-equivalent terms. This increase in worker utility arises from the direct benefit workers receive from working for socially responsible companies, as well as increases in allocative efficiency which arise due to the indirect general equilibrium effects.

Finally, we use the results from our qualitative firm survey (described in Section 2.1) to provide more precise quantitative predictions regarding the impact of firm ESG activities on the labor market equilibrium. As part of our survey of ESG, we asked respondents about the likelihood that they would pursue ESG activities in the future. We also asked each firm to report the wages paid to skilled and unskilled employees, as well as the number of each. This latter information allows us to construct total factor productivity and the skilled productivity multiplier for each responding firm. We then ran a logistic regression of whether the firm intended to pursue ESG activities on total factor productivity and the skilled multiplier. In our baseline specification, we denote a firm as intending to pursue ESG activities if it reports the likelihood of doing so at 90% or above.

The results of this logistic regression are reported in Table V. From the table, we see that firms with a higher TFP and firms with a higher skilled productivity multiplier

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[27]It should be noted that the allocative efficiency benefits disappear if the TFP cutoff is set too high. As Panel B of Figure 2 shows, total output is maximized at intermediate levels of the TFP cutoff.

TABLE V. Correlation between Firms' ESG Implementation with Firm and Worker Productivity

| | (1) | (2) | (3) | (4) | (5) |
| | Future ESG Implementation Likelihood (0/1=90% to 100%) | | | | Implementation (0/1=Yes) |
| | Environmental Practices | Social Practices | Governance Practices | B Corp Certification | Extensively Implemented ESG |
|---|---|---|---|---|---|
| TFP - Firm FE ($\bar{\xi}_j$) | 0.568*** | 0.471*** | 0.595*** | 0.698*** | 0.978*** |
| | (0.089) | (0.082) | (0.084) | (0.086) | (0.091) |
| Productivity ($a_{jg}$) | 0.500*** | 0.553*** | 0.467*** | 0.534*** | 0.371** |
| | (0.161) | (0.148) | (0.147) | (0.150) | (0.147) |
| Constant | -6.370*** | -5.029*** | -6.060*** | -7.133*** | -9.283*** |
| | (0.842) | (0.770) | (0.781) | (0.807) | (0.845) |
| Observations | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 |

**Notes**: This table reports the correlation between firms' current and future ESG implementation and their TFP - firm FE ($\bar{\xi}_j$) and productivity $a_{jg}$ of demographic group $g$ at firm $j$ in our firm survey of ESG practices. Columns (1) to (4) report the logistic regression coefficients for the following specification: $Likelihood_j = \alpha + \beta_1 \bar{\xi}_j + \beta_2 a_{jg} + e_j$, where $j$ is the $j^{th}$ firm in our firm survey of ESG practices. The outcome variable is an indicator equal to one if the respondent stated at least a 90% likelihood of the firm making a financial investment to meet ESG standards for strong performance within the next 1-3 years. Specifically, Column (1) pertains to environmental practices, Column (2) to social practices, Column (3) to governance practices, and Column (4) to B Corp certification. In Column (5), we report the logistic regression coefficients for the following specification: $Implementation_j = \alpha + \beta_1 \bar{\xi}_j + \beta_2 a_{jg} + e_j$. The outcome variable is an indicator equal to one for firms reporting they have extensively implemented ESG practices. For additional details on our firm survey of ESG practices, see Appendix Section A.3. *p<0.1; **p<0.05; ***p<0.01

are more likely to report an intention to pursue ESG activities, including becoming a certified B Corp, with statistical significance at the 1% level. Using these results in our structural model, we then pinpoint on the counterfactual surfaces (in Figure 2) the resulting percentage changes in equilibrium wage differentials, total output, and worker welfare, relative to the baseline economy with no ESG. We find that the equilibrium wage differential increases by 56 bps, reflecting a 10-bps increase in total output. Worker welfare increases by 1.14% in wage-equivalent terms.

## 7. Conclusion

In an era where corporations face mounting expectations to embrace a broader societal role and act responsibly beyond shareholder interests, we underscore the importance of organizational values in influencing job-seekers' choices and shaping the talent landscape. Our study sheds new light on how the rising polarization and growing influence of large corporations affect talent allocation and aggregate outcomes.

Using Brazil as our setting, we make two primary contributions. First, in partnership with Brazil's premier job platform, we design a nondeceptive incentivized field experiment to estimate job-seekers' preferences to work for socially responsible firms. We find that, on average, job-seekers place a value on ESG signals equivalent to about 10% of the average wage. Second, we combine our experimental estimates with administrative employer-employee data and structurally estimate an equilibrium model of the labor market. Quantitatively, skilled workers value firm ESG activities substantially more than unskilled workers. Our counterfactual results indicate that ESG increases worker utility relative to the baseline economy without ESG. The reallocation of labor in the economy with ESG improves assortative matching and yields an increase in total output. Moreover, skilled workers benefit the most from the introduction of ESG, ultimately increasing wage differentials between skilled and unskilled workers.

Our results have practical implications for corporate recruiting strategies and suggest that signaling ESG activities and organizational values in job postings can help firms attract talent in an increasingly values-driven job market. Furthermore, our study points to the importance of accounting for distributional effects when considering the adoption of ESG and related policies of corporations and governments alike.

Our paper naturally has limitations that future research should build on. First, while our findings show that ESG affects talent allocation and leads to increases in both worker welfare and economic output, we cannot speak to whether and how matching based on ESG values may enhance job productivity—a new and exciting area of research on its own. Second, our analysis focuses on Brazil, and therefore establishing external

validity to other contexts is an important next step. Finally, our experimental design and structural model are both static in nature. It is possible that ESG preferences and their implications for talent allocation may differ significantly under varying economic conditions.

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# Online Appendix

## Appendix A.1. Model Proofs

A.1. **Proof of Theorem 2.1.** Note that total economic output is:

$$Y = \Xi_A L_A^{1-\eta} + \Xi_B L_B^{1-\eta}$$

so that:

$$\begin{aligned}
\frac{dY}{dE_B} &= (1-\eta) \left[ \Xi_A L_A^{-\eta} \frac{dL_A}{dE_B} + \Xi_B L_B^{-\eta} \frac{dL_B}{dE_B} \right] \\
&= (1-\eta) \left[ -\Xi_A L_A^{-\eta} \frac{dL_B}{dE_B} + \Xi_B L_B^{-\eta} \frac{dL_B}{dE_B} \right] \\
&= \frac{1+\sigma}{\sigma} \left[ W_{BU} - W_{AU} \right] \frac{dL_B}{dE_B}.
\end{aligned}$$

At $E_B = 0$, this derivative will be positive if $W_{BU}/W_{AU} > 1$ and $dL_B/dE_B > 0$. To the first point, suppose that $W_{BU}/W_{AU} \leq 1$. Since the ratio of firm wages is the same for skilled and unskilled labor, we then have $W_{BS}/W_{AS} \leq 1$ as well. Then, $L_{Bj} \leq L_{Aj}$ for $g \in \{U, S\}$, which implies $L_B \leq L_A$. But then:

$$\frac{W_{BU}}{W_{AU}} = \frac{\Xi_B}{\Xi_A} \left( \frac{L_A}{L_B} \right)^\eta > 1,$$

which is a contradiction. Finally, suppose $dL_B/dE_B \leq 0$. Then, wages would increase at Firm $B$ and decline at Firm $A$. Since workers (weakly) value ESG, this would increase the probability that workers choose Firm $B$, a contradiction.

A.2. **Proof of Theorem 2.2.** We will show that for a sufficiently small increase in $E_B$, relative to $E_B = 0$, the total wage bill of the unskilled workers declines and the total wage bill of the skilled workers increases. First note that the total wage bill in the economy is:

$$\begin{aligned}
W_S + W_U &= \sum_j (1-\eta) \frac{\sigma}{1+\sigma} \left( L_{jU} + A_S L_{jS} \right) \Xi_j L_j^{-\eta} \\
&= (1-\eta) \frac{\sigma}{1+\sigma} \left( Y_A + Y_B \right).
\end{aligned}$$

That is, the total wage bill in the economy is a constant fraction of the total output. It suffices to show that the wage bill of the unskilled workers declines, since by Theorem 2.1, total output in the economy increases and thus the total wage bill of the skilled workers

must also increase. To this end, note that:

$$W_U = \sum_j (1 - \eta) \frac{\sigma}{1 + \sigma} L_{jU} \Xi_j L_j^{-\eta}.$$

We therefore have:

$$\frac{dW_U}{dE_B} = \sum_j \frac{dL_{jU}}{dE_B} W_{jU} - \sum_j (1 - \eta) \eta \frac{\sigma}{1 + \sigma} L_{jU} \Xi_j L_j^{-\eta-1} \frac{dL_j}{dE_B}$$

$$= \frac{dL_{AU}}{dE_B} (W_{AU} - W_{BU}) + (1 - \eta) \eta \frac{\sigma}{1 + \sigma} \frac{dL_A}{dE_B} \left( -L_{AU} \Xi_A L_A^{-\eta-1} + L_{BU} \Xi_B L_B^{-\eta-1} \right).$$

From Theorem 2.1, we know that $dL_B/dE_B > 0$, which lowers unskilled wages at Firm $B$. Since unskilled workers do not value ESG, this implies that $dL_{AU}/dE_B > 0$. Since $W_{AU} < W_{BU}$ at $E_B = 0$, also from the proof of Theorem 2.1, it follows that the first term in the equation above is negative. The proof will therefore be complete if we can show:

$$-L_{AU} \Xi_A L_A^{-\eta-1} + L_{BU} \Xi_B L_B^{-\eta-1} > 0,$$

since $dL_A/dE_B < 0$. Now:

$$-L_{AU} \Xi_A L_A^{-\eta-1} + L_{BU} \Xi_B L_B^{-\eta-1} = L_{BU} \Xi_B L_B^{-\eta-1} \left[ -\frac{L_{AU}}{L_{BU}} \frac{\Xi_A}{\Xi_B} \left( \frac{L_A}{L_B} \right)^{-\eta-1} + 1 \right].$$

However, since the ratio of wages across firms is the same for skilled and unskilled workers, it is easy to see that $L_{AU}/L_{BU} = L_A/L_B$ when $E_B = 0$. Therefore:

$$-\frac{L_{AU}}{L_{BU}} \frac{\Xi_A}{\Xi_B} \left( \frac{L_B}{L_A} \right)^{\eta+1} + 1 = -\frac{\Xi_A}{\Xi_B} \left( \frac{L_A}{L_B} \right)^{-\eta} + 1$$

$$= \frac{-W_A}{W_B} + 1$$

$$> 0,$$

since $0 < W_A/W_B < 1$, which completes the proof.

A.3. **Proof of Theorem 2.3.** We can write total worker welfare as:

$$U = \sum_g \bar{L}_g \tau \log \left[ \sum_j \exp \left( \frac{\log W_{jg} + \log \Upsilon_g (E_j)}{\tau} \right) \right].$$

Taking the derivative at $E_A = E_B = 0$ gives:

$$\frac{dU}{dE_{j^*}} = \sum_g \sum_j L_{jg} \left( \frac{d \log W_{jg}}{dE_{j^*}} + \frac{d \log \Upsilon_g (E_j)}{dE_{j^*}} \right)$$

$$= L_{jS} \Upsilon_S' (0) + \sum_g \sum_j L_{jg} \frac{d \log W_{jg}}{dE_{j^*}},$$

since $\Upsilon_U' (\cdot) = 0$ and $\Upsilon_S (0) = 1$. The second term is:

$$\sum_g \sum_j L_{jg} \frac{d \log W_{jg}}{dE_{j^*}} = \sum_g \sum_j L_{jg} \left( -\eta \frac{d \log L_j}{dE_{j^*}} \right)$$

$$= \sum_g \sum_j -\eta \frac{L_{jg}}{L_j} \frac{dL_j}{dE_{j^*}}$$

$$= -\eta \frac{dL_A}{dE_{j^*}} \sum_g \left( \frac{L_{Ag}}{L_A} - \frac{L_{Bg}}{L_B} \right)$$

$$= -\eta \frac{dL_A}{dE_{j^*}} \left( \frac{L_{AU} + L_{AS}}{L_{AU} + A_S L_{AS}} - \frac{L_{BU} + L_{BS}}{L_{BU} + A_S L_{BS}} \right)$$

$$= -\eta \frac{dL_A}{dE_{j^*}} \left( \frac{L_U + L_S}{L_U + A_S L_S} - \frac{L_U + L_S}{L_U + A_S L_S} \right)$$

$$= 0,$$

since $L_{jU}/\bar{L}_U = L_{jS}/\bar{L}_S$ when $E_A = E_B = 0$, as discussed in the proof of Theorem 2.2. This completes the proof.

FIGURE A1. Firm Survey of ESG Practices
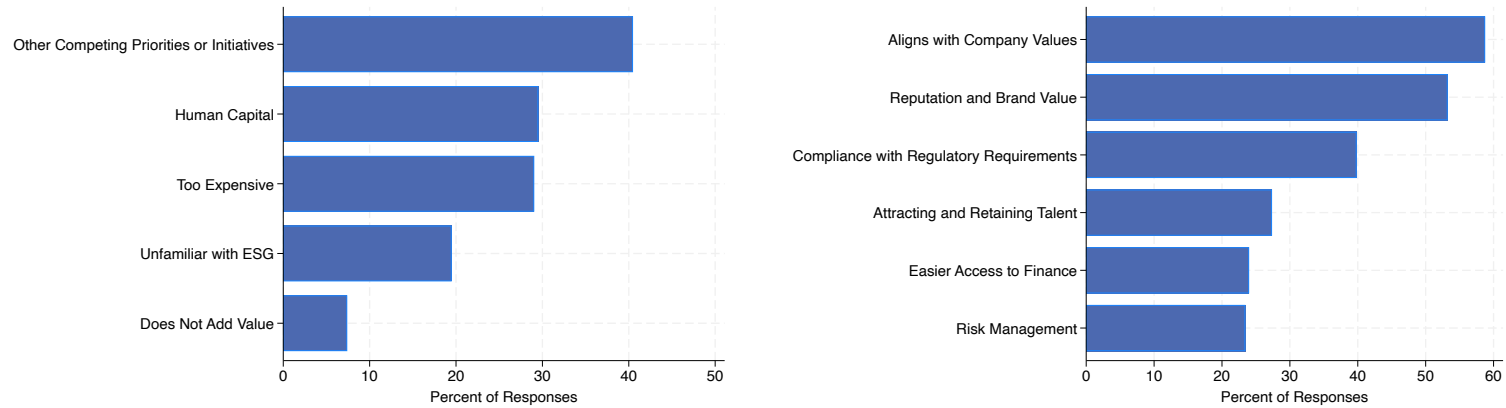


**A.** ESG Constraints



**B.** ESG Benefits
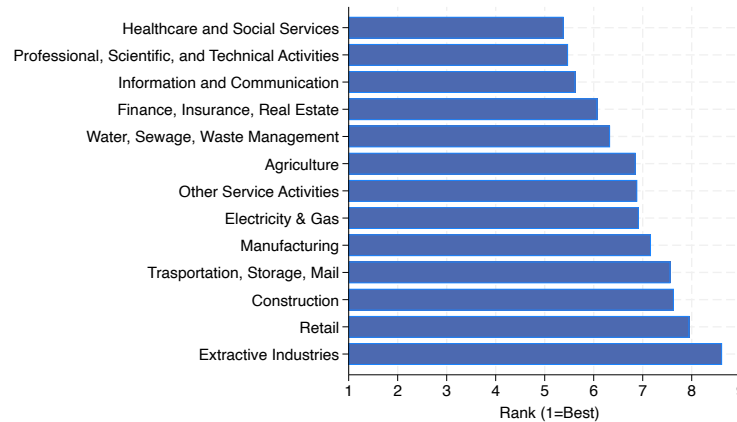


**C.** ESG Industry Rankings

**Notes**: Panel A presents the responses to the question: "What are the main factors preventing your company from fully adopting or increasing your investment in ESG practices? Select up to three choices." Panel B presents the responses to the question: "What do you think are the main benefits of adopting ESG practices in your company? Select up to three choices." Panel C presents the responses to the question: "Which four industries (excluding your own) do you believe exhibit the highest standards of environmental, social, and governance performance? Which four industries exhibit the lowest?" It shows the average rank assigned to each industry, where 1=best and 13=worst. For additional details on our firm survey of ESG practices, see Appendix Section A.3.
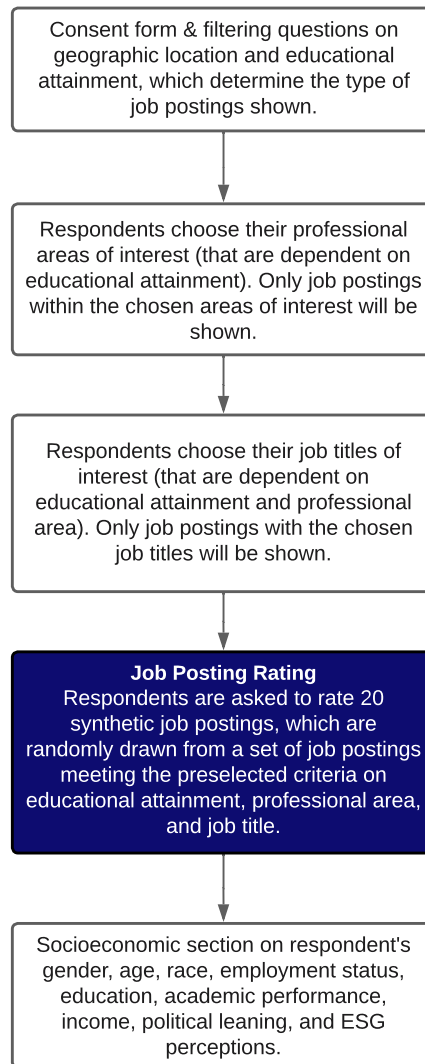
FIGURE A2. Experimental Survey Flow

**Notes**: This figure illustrates our experimental survey flow. We discuss additional details of the experimental design in Section 4.1.

FIGURE A3. Relationship between Firm and Worker Productivity
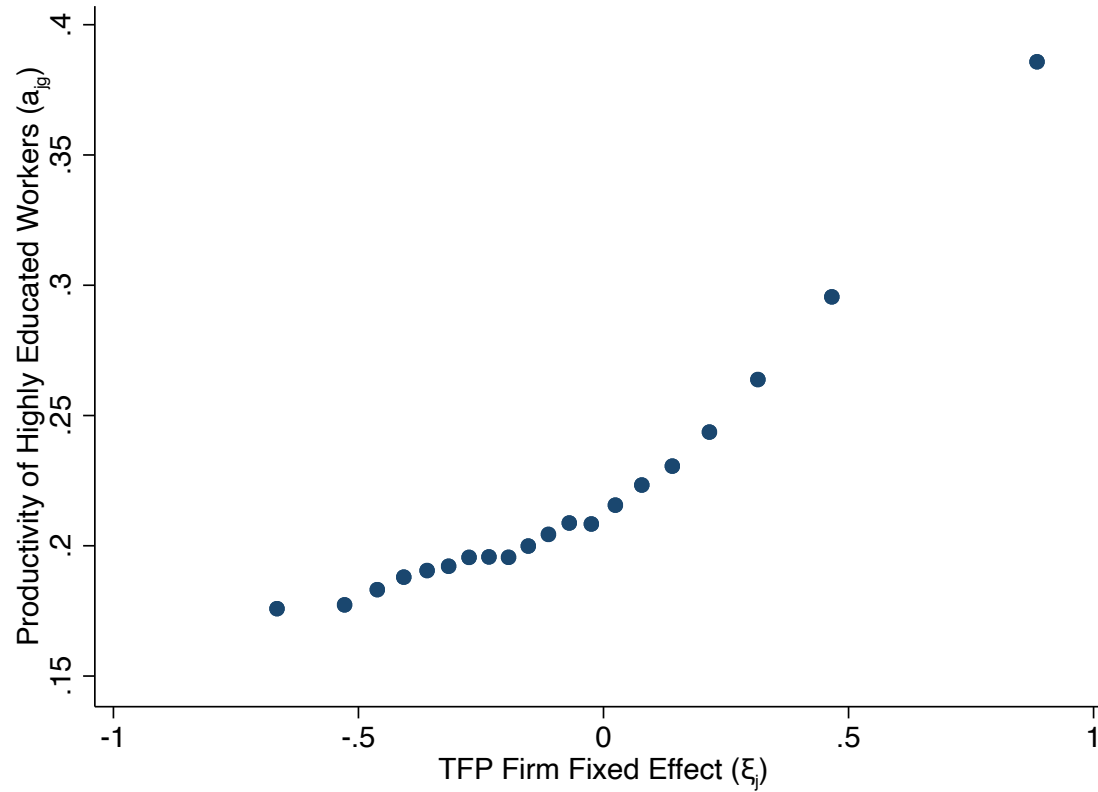


**Notes**: This figure presents the relationship between the TFP firm fixed effect (FE) $(\bar{\xi}j)$ and worker productivity $(a_{jg})$ for the highly educated demographic group $g$. We display a binned scatter plot, where the x-axis variable is grouped into equal intervals, and the mean of the y-axis variable is plotted for each bin. The associated regression, examining the relationship between firms' TFP firm fixed effect (FE) $(\bar{\xi}j)$ and the worker productivity $a_{jg}$ of the highly educated group $g$ is shown in Appendix Table AX. The regression specification is given by $a_{jg} = \beta_0 + \beta_1\bar{\xi}_j + e_j$, with all coefficients significant at the 1% level.

FIGURE A4. Location of Survey Respondents
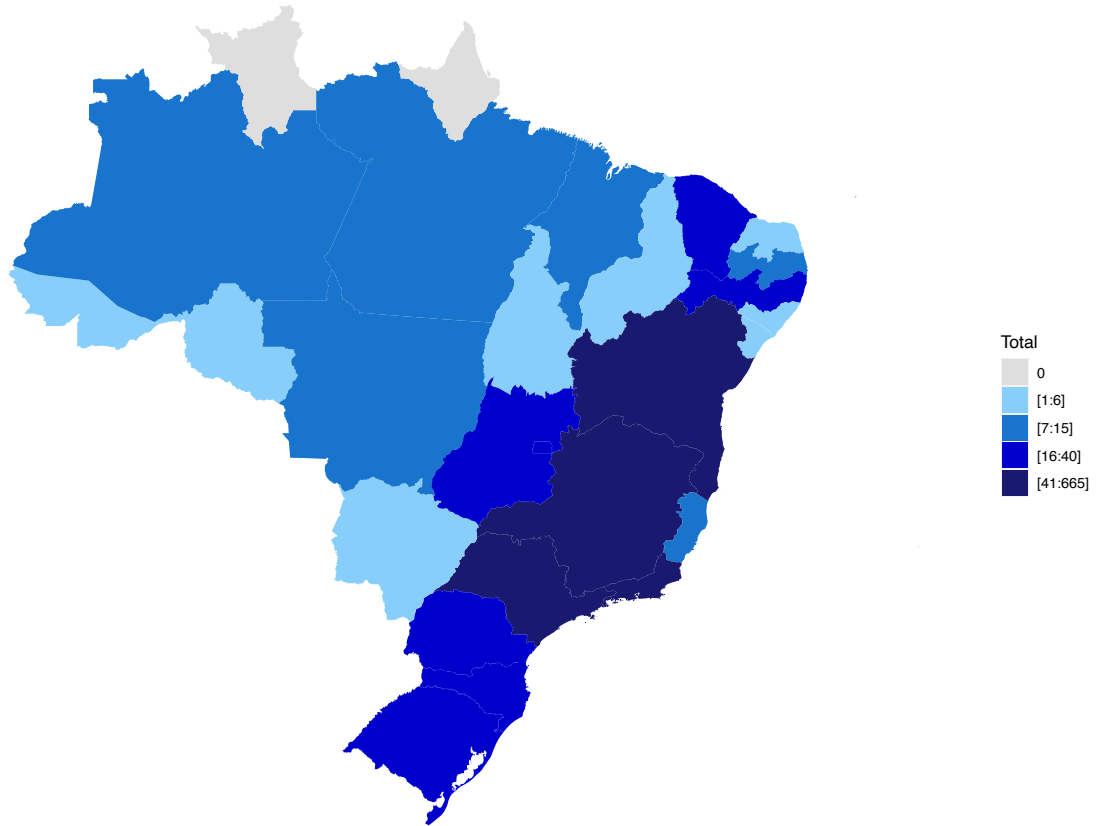


**Notes**: This map shows the geographic distribution of survey respondents across different states in Brazil. Darker shades indicate a higher number of respondents from that state.

**Olá, tudo bem?**

Você faz parte do grupo de pessoas selecionadas para participar de uma **pesquisa realizada pela Catho, em parceria com pesquisadores da Universidade de Chicago**. O objetivo dessapesquisa é ajudar candidatos como você a encontrarem vagas mais compatíveis com o seu currículo.

A equipe da Universidade desenvolveu uma nova ferramenta de pesquisa para ajudar a combinar candidatos às melhores vagas. Como ela funciona? Ela filtra suas preferências e utiliza inteligência artificial para te recomendar os empregos ideais que estão no nosso banco de dados.

**Ao clicar no botão rosa ao final desse texto**, você terá acesso à pesquisa. Só vai levar 15 minutos.

Ah! Suas respostas serão um segredinho apenas nosso. Pode ficar tranquila(o). ;)

Sua opinião vai fazer a diferença pra gente e para milhares de pessoas que buscam emprego.

Muito obrigado,
Time de Produtos da Catho

**→ Responder a pesquisa**

**A.** Portuguese

**Hello, how are you?**

You have been selected as a participant in a **survey conducted by Catho in collaboration with researchers from the University of Chicago**. The purpose of this survey is to help individuals like yourself find employment opportunities that align with your qualifications.

The researchers developed a new survey tool to help match candidates to the most suitable job openings. How does it work? The tool filters your preferences and uses artificial intelligence to recommend the optimal jobs from our database.

**By clicking on the pink button at the end of this text**, you will be directed to the survey. The survey will only take 15 minutes to complete.

Don't worry, your answers will be kept confidential. You can trust us with your responses. :)

Your responses will make a difference for thousands of job seekers and for us.

Thank you very much,
Catho Product Team

**→ Answer the survey**

**B.** English

Figure A5. Email Sent to Survey Respondents

**Notes**: This figure presents the recruitment email sent to survey respondents. Panel A shows the actual email sent to respondents in the survey, in Portuguese. Panel B shows the English translation. The email subject line was as follows: *Queremos te ajudar a encontrar melhores vagas!* (*We want to help you find better jobs!*).

**A.** Portuguese

CLT (Efetivo)    R$ 2100,00

**Sobre nós**

Empresa fundada em 1998, atualmente é referência na área de gestão e desenvolvimento imobiliário. Nossos 2,500 colaboradores estão distribuídos em 5 países. Estamos procurando um candidato com excelentes habilidades de apresentação verbal e visual, capacidade de desenvolver, fundamentar e explicar a direção do design para a equipe e os clientes e ter paixão por dar vida às ideias. Performance Financeira: Nossa empresa se orgulha de seu forte desempenho financeiro. No ano passado, registramos um dos maiores lucros de nossa história. Alcançamos, dentre as empresas que atuam em nosso setor, um dos maiores lucros nos últimos 5 anos.

**Práticas Ambientais, Sociais e de Governança**

Para demonstrar nosso compromisso com a maior transparência em relação ao impacto ambiental, divulgamos anualmente um relatório detalhado sobre os tipos de materiais utilizados em nossas atividades, bem como seu impacto estimado no meio ambiente e taxas de reciclagem associadas.

**Sobre a Vaga**

**Horário: Segunda-feira a sexta-feira das 13h às 21h**

A empresa abriu vagas visando contratar profissionais inovadores.

**Oportunidades**
- Imersão na cultura corporativa
- Acompanhamento do RH em sua jornada com nossa empresa
- Programa de mentoria global

**Etapas**

1. Inscrição Online
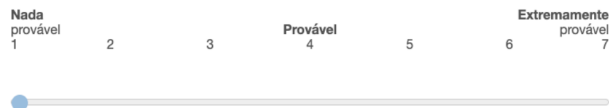2. Painel com os gestores

**Benefícios**
- Incentivo à educação
- Gympass - desconto em academias
- Assistência médica

Quão interessado você estaria em receber uma oferta para esta vaga de emprego?

Moderadamente interessado 1    2    3    Bastante Interessado 4    5    6    Emprego dos sonhos! 7

Qual você acha que é a probabilidade de a empresa lhe oferecer a posição?

Nada provável 1    2    3    Provável 4    5    6    Extremamente provável 7

**B.** English

CLT (Effective)    BRL 2100.00

**About us**

Our company was founded in 1998, is currently a leader in the real estate management and development industry. With 2,500 employees across 5 countries, we are seeking a candidate with exceptional verbal and visual presentation skills, the ability to develop and articulate design direction for our team and clients, and a passion for bringing ideas to life. Financial Performance: Our company is proud of our strong financial performance. Last year, we recorded one of the highest profits in our history, and among the companies operating in our sector, we achieved one of the highest profits in the last five years.

**Environmental, Social, and Governance Practices**

To demonstrate our commitment to improved transparency with respect to environmental impact, we annually disclose a detailed report on the types of materials used in our activities, as well as their estimated impact on the environment and associated recycling rates.

**About the Job**

**Time: Monday to Friday from 1pm to 9pm**

Our company is seeking innovative professionals to fill our open positions.

**Opportunities**
- Full immersion in our corporate culture
- Support from HR throughout your journey with our company
- Global mentoring program

**Hiring Stages**

1. Online application
2. Interview panel with our managers

**Benefits**
- Educational assistance program
- Gym membership
- Medical assistance

How interested would you be in receiving an offer for this job position?
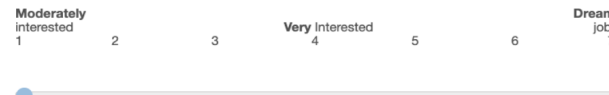
Moderately interested 1    2    3    Very Interested 4    5    6    Dream job! 7

How likely do you think it is that the company will offer you the position?

Not likely 1    2    3    Likely 4    5    6    Extremely likely 7
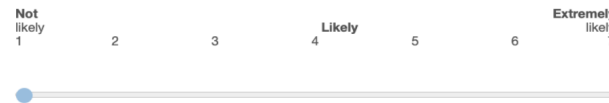
FIGURE A6. Example of Synthetic Job Posting
E(SG) and Financial Performance

**Notes**: This figure presents an example of a synthetic job posting with environmental and financial performance signaling, as well as the two rating questions shown to respondents in the survey. For a description of each job posting component, see Section 4.2.

**Prestador de Serviço (PJ)**     **R$ 3000,00**

**Sobre a empresa**

Uma empresa da área de equipamentos e serviços de energia que se orgulha de cada um dos seus 9,000 colaboradores. Estamos presentes em 2 países e, desde nossa criação (2006), buscamos qualidade. Em nossa empresa, você atuará com um time especializado em criar e implementar inovações em telecomunicação que aumentem o desempenho de nossas atividades e o contato com os clientes.

**Práticas Ambientais, Sociais e de Governança**

Como uma empresa Certificada B Corporation®, nos orgulhamos de atender aos mais altos padrões verificáveis de desempenho social e ambiental. A certificação reflete nosso compromisso de impactar positivamente nossos funcionários, o meio ambiente e a comunidade em geral.

**Sobre a Vaga**

**Horário: Segunda a sexta das 10h às 18h**

**Modelo de Trabalho Híbrido - Você escolhe quantos dias da semana quer ir ao escritório.**

Estamos com vagas para contratar os melhores profissionais do mercado.

**Fases de admissão**

1. Inscrição Online
2. Entrevista final

**Benefícios**

- Assistência odontológica
- Auxílio na melhoria da Internet

Quão interessado você estaria em receber uma oferta para esta vaga de emprego?

| Moderadamente interessado | | Bastante Interessado | | Emprego dos sonhos! |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Qual você acha que é a probabilidade de a empresa lhe oferecer a posição?

| Nada provável | | Provável | | Extremamente provável |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**A. Portuguese**

---

**Service Provider (PJ)**     **BRL 3000.00**

**About the company**

We are an energy equipment and services company that takes pride in our 9,000 employees. We operate in two countries and have been committed to delivering quality since our inception in 2006. At our company, you'll work alongside a specialized team focused on developing and implementing innovative telecommunication solutions that improve our operational efficiency and customer communication.

**Environmental, Social, and Governance Practices**

As a B Corporation® Certified company, we pride ourselves on meeting the highest verifiable standards of social and environmental performance. The certification reflects our commitment to positively impacting our employees, the environment, and the wider community.

**About the Job**

**Time: Monday to Friday from 10am to 6pm**

**Hybrid Work Model - You choose how many days of the week you want to work from the office.**

We are seeking top-notch professionals to fill our open positions.

**Hiring Stages**

1. Online application
2. Final interviews

**Benefits**

- Dental assistance
- Internet allowance

How interested would you be in receiving an offer for this job position?

| Moderately interested | | Very Interested | | Dream job! |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

How likely do you think it is that the company will offer you the position?

| Not likely | | Likely | | Extremely likely |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**B. English**

FIGURE A7. Example of Synthetic Job Posting
ESG Certification (B Corporation)

**Notes**: This figure presents an example of a synthetic job posting with an ESG certification, as well as the two rating questions shown to respondents in the survey. For a description of each job posting component, see Section 4.2.

Prestador de Serviço (PJ)    R$ 4000,00

**Sobre a empresa**

Atuamos na área de serviços de saúde desde 1994, com escritórios em mais de 3 países, totalizando 2,000 funcionários. Estamos à procura de um candidato para fornecer serviços de aconselhamento individual ou em grupo para ajudar indivíduos e suas famílias a alcançar um desenvolvimento e ajuste pessoal eficazes.

**Práticas Ambientais, Sociais e de Governança**

Nossa empresa possui uma política interna de tolerância zero para todas as formas de suborno ou pagamento de propina, seja envolvendo funcionários, entidades governamentais ou qualquer parte comercial, como clientes ou fornecedores. Para isso, mantemos um sistema de controles internos para evitar pagamentos impróprios ou ilegais.

**Sobre a Vaga**

**Horário: Segunda a sexta das 08h às 18h**

A empresa abriu vagas visando contratar profissionais inovadores.

**Oportunidades**
- Oportunidade de aperfeiçoar suas habilidades
- Rotação de cargos
- Vários cursos de treinamentos

**Fases de admissão**

1. Inscrição Online
2. Entrevista final com os gerentes e com o departamento de recursos humanos

**Benefícios**
- Parcerias com escolas e faculdades
- Gympass - desconto em academias
- Auxílio alimentação

**Quão interessado você estaria em receber uma oferta para esta vaga de emprego?**

| Moderadamente interessado | | | Bastante Interessado | | | Emprego dos sonhos! |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Qual você acha que é a probabilidade de a empresa lhe oferecer a posição?**

| Nada provável | | | Provável | | | Extremamente provável |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**A. Portuguese**

Service Provider (PJ)    BRL 4000.00

**About us**

We have been operating in the healthcare industry since 1994, with offices in more than three countries and a total of 2,000 employees. We are currently seeking a candidate to provide individual or group counseling services to help individuals and their families achieve effective personal development and adjustment.

**Environmental, Social, and Governance Practices**

Our company has an internal zero tolerance policy for all forms of bribery, whether involving a government official or entity or any commercial party, such as a customer or supplier. To this end, we maintain a system of internal controls to prevent any improper or corrupt payments.

**About the Job**

**Time: Monday to Friday from 8am to 6pm**

Our company is seeking innovative professionals to fill our open positions.

**Opportunities**
- Opportunity to perfect your skills
- Rotational positions
- Various training courses

**Hiring Stages**

1. Online application
2. Final interview with managers and human resources department

**Benefits**
- Partnerships with educational organizations
- Gym membership
- Meal allowance

**How interested would you be in receiving an offer for this job position?**

| Moderately interested | | | Very Interested | | | Dream job! |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**How likely do you think it is that the company will offer you the position?**

| Not likely | | | Likely | | | Extremely likely |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
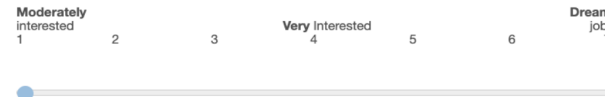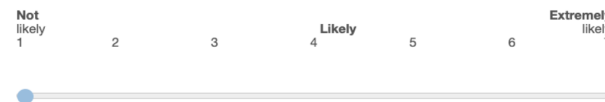
**B. English**

FIGURE A8. Example of Synthetic Job Posting (ES)G

Notes: This figure presents an example of a synthetic job posting with governance signaling, as well as the two rating questions shown to respondents in the survey. For a description of each job posting component, see Section 4.2.

Prestador de Serviço (PJ)     R$ 2100,00

**Sobre nós**

Fundada em 2003, trabalhamos na área automotiva. No final do último mês, atingimos a marca de 5,000 colaboradores espalhados em 2 países. Nosso candidato ideal é um apaixonado pelos desafios proporcionados pelo comércio num mundo cada vez mais dinâmico e complexo, capaz de compreender cenários e os fatores determinantes para a nossa competitividade. Pensamos no futuro como o futuro de nossos colaboradores, por isso somos líderes em inovação.

**Sobre a Vaga**

A empresa abriu vagas visando contratar profissionais inovadores.

**Oportunidades**
- Vários cursos de treinamentos
- Acompanhamento do RH em sua jornada com nossa empresa
- Expressar opiniões sem medo

**Requisitos**
- Ser colaborativo
- Causar impacto real no mundo dos negócios
- Graduação em Relações Públicas, Administração ou cursos relacionados

**Etapas**
1. Inscrição Online
2. Painel com os gestores

**Benefícios**
- Plataforma de treinamento
- Academia no escritório

Quão interessado você estaria em receber uma oferta para esta vaga de emprego?

| Moderadamente interessado | | | Bastante Interessado | | | Emprego dos sonhos! |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Qual você acha que é a probabilidade de a empresa lhe oferecer a posição?

| Nada provável | | | Provável | | | Extremamente provável |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**A. Portuguese**

Service Provider (PJ)     BRL 2100.00

**About us**

Founded in 2003, we work in the automotive industry. At the end of last month, we reached the milestone of 5,000 employees spread across 2 countries. Our ideal candidate is someone who is passionate about the challenges provided by trade in an increasingly dynamic and complex world, capable of understanding scenarios and the determining factors for our competitiveness. As leaders in innovation, we seek to improve the future for our employees.

**About the Job**

Our company is seeking innovative professionals to fill our open positions.

**Opportunities**
- Various training courses
- Support from HR throughout your journey with our company
- Free expression of opinions without fear

**Requirements**
- Collaborative
- Make a real impact in the business world
- Degree in Public Relations, Business Administration or related areas

**Hiring Stages**
1. Online application
2. Interview panel with managers

**Benefits**
- Training platform
- In-office gym

How interested would you be in receiving an offer for this job position?

| Moderately interested | | | Very Interested | | | Dream job! |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

How likely do you think it is that the company will offer you the position?

| Not likely | | | Likely | | | Extremely likely |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**B. English**

FIGURE A9. Example of Synthetic Job Posting
Control

**Notes**: This figure presents an example of a synthetic job posting without any ESG signaling, as well as the two rating questions shown to respondents in the survey. For a description of each job posting component, see Section 4.2.
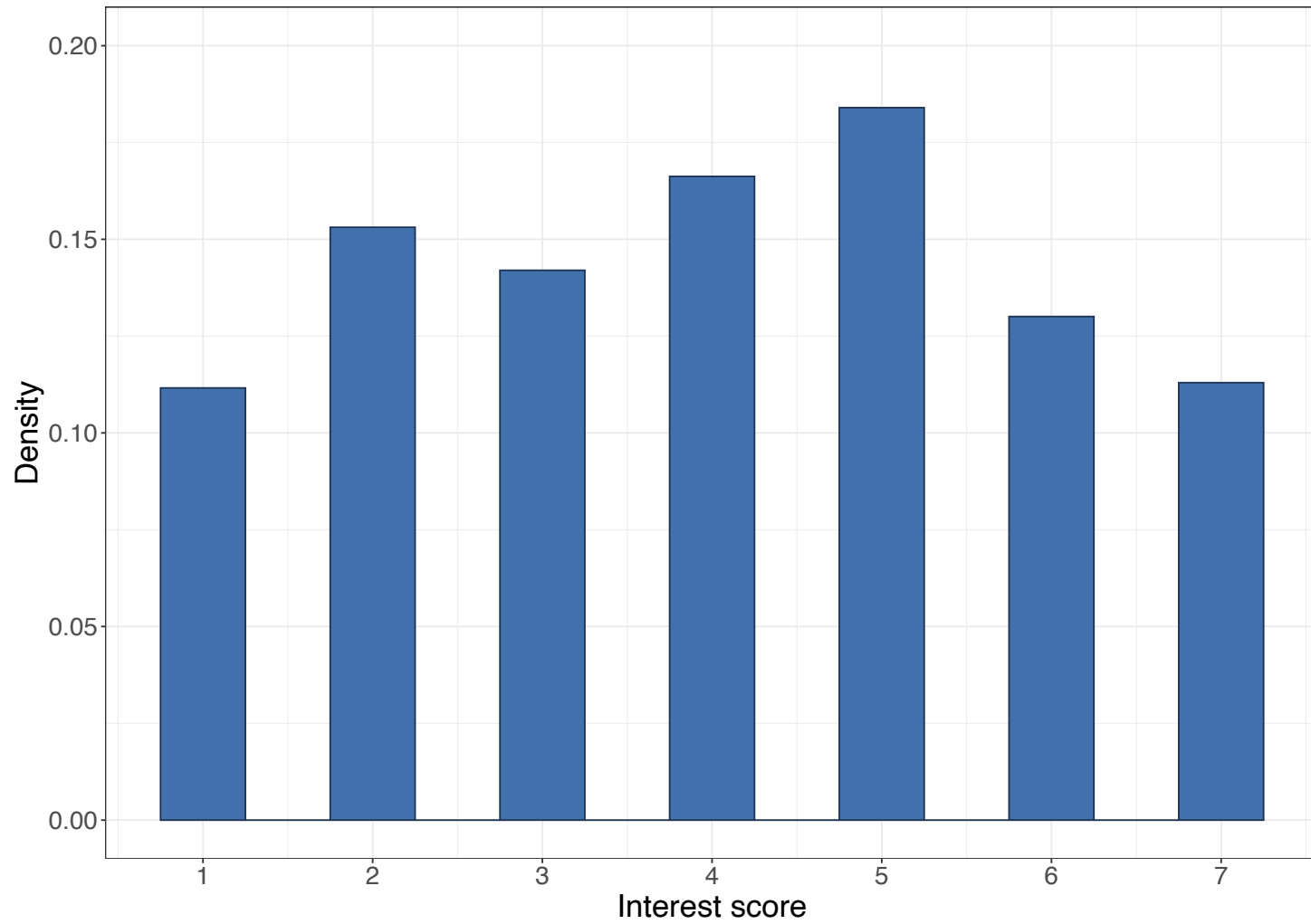
FIGURE A10. Distribution of Job Posting Ratings

**Notes**: This figure shows the distribution of our main outcome variable, *Interest. Interest* is measured on a scale of 1 to 7 and indicates the level of interest that respondents have in a job posting.

**A. Words**



**B. Bigrams**

FIGURE A11. ESG Word Clouds

**Notes**: This figure shows the responses visualized as word clouds to the open-ended question, "*When you think of working for companies with Environmental, Social and Governance (ESG) practices in place, what are the main considerations that come to mind?*". Panel A shows the word cloud generated for individual words, with the most frequently used words in the responses appearing larger. Panel B shows the word cloud generated for bigrams, with the most frequently used bigrams in the responses appearing larger. We remove all words present in the question from the word clouds.

FIGURE A12. Coefficient Stability Plot

**Notes**: This figure shows the coefficient stability plot for the effect of signaling employers' ESG practices on respondents' interest in the job posting. The plot shows the robustness of our ESG coefficient from Table III to the inclusion of all potential combinations of socioeconomic controls, more precisely, those included in Column (2).

TABLE AI. Randomization of Job Components

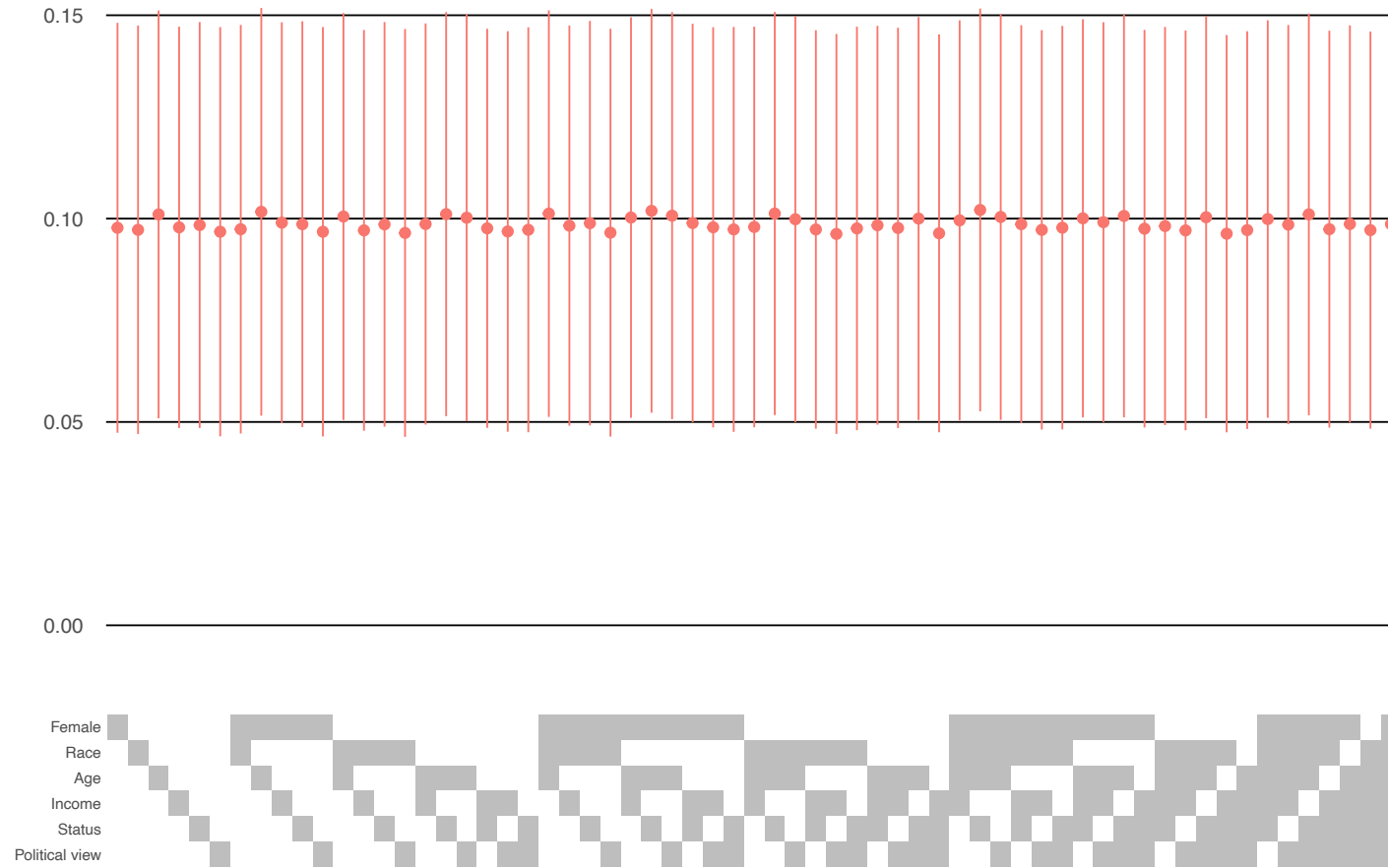| Job Posting Component | Number of Options Chosen | Inclusion Probability | Categories of Analysis Variable |
|---|---|---|---|
| **Primary Job Characteristics** | | | |
| Job Title | 1 | 1 | Specified by survey respondent. See the supplementary appendix for additional details. |
| Location | 1 | 1 | Specified by survey respondent. If multiple cities are selected, *Primary Preference* (80%), *Secondary Preference(s)* (20%). See the supplementary appendix for additional details. |
| Wage | 1 | 1 | See the supplementary appendix for additional details. |
| Work Regime | 1 | 0.5 | *CLT* (50%), *Service Provider (PJ)* (50%). |
| **General Firm Characteristics** | | | |
| Industry | 1 | 1 | See the supplementary appendix for additional details. |
| Establishment Year | 1 | 1 | See the supplementary appendix for additional details. |
| Number of Employees | 1 | 1 | See the supplementary appendix for additional details. |
| Number of Countries | 1 | 1 | One country (50%), and two to five countries (12.5% each). See the supplementary appendix for additional details. |
| Introductory Sentence | 1 | 1 | See the supplementary appendix for additional details. |
| Financial Strength | 1 | 0.1 | *Profit* (25%), *Credit Rating* (25%), *Growth Outlook* (25%), *Bankruptcy Probability* (25%). See the supplementary appendix for additional details. |
| Auxiliary Sentence - Firm Description | 1 | Conditional on ESG Inclusion – 1 | See the supplementary appendix for additional details. |
| **Firm ESG Characteristics** | | | |
| ESG Sentences | 1–2 | 80% – 0.2 / 20% – 0.5 | *Environmental* (53%), *Social* (20%), *Governance* (27%). See the supplementary appendix for additional details. |
| ESG Certification | 1 | 0.1 | *B Corporation* (33.3%), *Great Place to Work* (33.3%) and *Green Business Bureau* (33.3%). See the supplementary appendix for additional details. |
| **General Job Characteristics** | | | |
| On-the-Job Opportunities | 2–5 | 0.5 | *Mentoring and Training* (33.3%), *Personal Development* (33.3%), *Company Culture* (33.3%). See the supplementary appendix for additional details. |
| On-the-Job Activities | 3–5 | 0.6 | See the supplementary appendix for additional details. |
| On-the-Job Activities (Sentences) | 1 | 0.5 | See the supplementary appendix for additional details. |
| Workload Requirement | 1 | 0.7 | See the supplementary appendix for additional details. |
| Work-from-Home | 1 | Completed High School – 0.3 / Technical School – 0 / Completed College – 0.3 | See the supplementary appendix for additional details. |
| Auxiliary Sentence - Job Opening | 1 | 1 | See the supplementary appendix for additional details. |
| **Job Prerequisites** | | | |
| Job Prerequisites | 2–3 | 0.5 | See the supplementary appendix for additional details. |
| Required Majors | 1 | Completed High School – 0 / Technical School – 0 / Completed College – 1 | Specified by survey respondent. See the supplementary appendix for additional details. |
| **Hiring Stages** | | | |
| Stage 1 - Application | 1 | 1 | See the supplementary appendix for additional details. |
| Stage 2 - Online Assessments | 1 | Completed High School – 0 / Technical School – 0 / Completed College – 1 | See the supplementary appendix for additional details. |
| Stage 3 - Other Assessments | 1 | Completed High School – 0 / Technical School – 0 / Completed College – 1 | See the supplementary appendix for additional details. |
| Stage 4 - Final Interview | 1 | 1 | See the supplementary appendix for additional details. |
| **Nonwage Amenities** | | | |
| Nonwage Amenities | 2–4 | 1 | *Benefits* (70%), and *Amenities* (30%). See the supplementary appendix for additional details. |

**Notes**: This table presents the components of each synthetic job posting and each associated number of options chosen, inclusion probability, and categories of the analysis variable. *Job Posting Component* specifies the component that is randomized and contained in the job posting, presented in descending order of appearance. *Number of Options Chosen* is the number of analysis variables that are randomized and included in the job posting. *Inclusion Probability* is the probability that the *Job Posting Component* appears in the hypothetical job posting. *Categories of Analysis Variable* is the category of the randomized characteristic included in each hypothetical job posting and the associated weight as a percentage in parentheses representing their selection probability (e.g., each job posting presented has a 50% chance of appearing from a domestic firm).

Table AII.  Firm Survey of ESG Practices - Industry Distribution

| Industry | Count | Share (%) |
|---|---|---|
| Information and Communication | 184 | 17.24 |
| Manufacturing | 119 | 11.15 |
| Retail | 112 | 10.50 |
| Scientific and Technical Activities | 111 | 10.40 |
| Other Service Activities | 103 | 9.65 |
| Construction | 91 | 8.53 |
| Finance, Insurance and Real Estate | 85 | 7.97 |
| Healthcare and Social Services | 67 | 6.28 |
| Agriculture, Livestock and Fishing | 55 | 5.15 |
| Transportation, Storage, and Mail | 45 | 4.22 |
| Electricity and Gas | 24 | 2.25 |
| Extractive Industries | 14 | 1.31 |
| Water, Sewage, and Waste Management | 7 | 0.66 |
| Other | 50 | 4.69 |
| Total | 1,067 | 100 |

**Notes**: This table shows the industry distribution of the firms in our firm survey of ESG practices. The survey sampled a total of 1,067 firms.

TABLE AIII. ESG Sentence and Certification Effect on Interest

| | Interest (1) | Interest (2) | Interest (3) |
|---|---|---|---|
| **Panel A: Without Controls for Job Posting Characteristics** | | | |
| ESG Sentence | 0.075** | 0.074*** | 0.060*** |
| | (0.029) | (0.028) | (0.022) |
| ESG Certification | 0.098*** | 0.106*** | 0.092*** |
| | (0.038) | (0.036) | (0.029) |
| Ln(Wage) | 1.116*** | 1.129*** | 1.205*** |
| | (0.031) | (0.030) | (0.026) |
| Nonwage Amenities | 0.059*** | 0.060*** | 0.064*** |
| | (0.014) | (0.014) | (0.011) |
| Financial Strength | −0.004 | −0.007 | 0.014 |
| | (0.041) | (0.040) | (0.032) |
| **Panel B: With Controls for Job Posting Characteristics** | | | |
| ESG Sentence | 0.073** | 0.073*** | 0.056** |
| | (0.029) | (0.028) | (0.022) |
| ESG Certification | 0.096** | 0.103*** | 0.089*** |
| | (0.038) | (0.036) | (0.029) |
| Ln(Wage) | 1.112*** | 1.125*** | 1.200*** |
| | (0.031) | (0.030) | (0.026) |
| Nonwage Amenities | 0.061*** | 0.061*** | 0.065*** |
| | (0.014) | (0.014) | (0.011) |
| Financial Strength | −0.007 | −0.010 | 0.011 |
| | (0.041) | (0.040) | (0.032) |
| Observations | 24,120 | 24,120 | 24,120 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: Panel A reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 ESG\ Sentence\epsilon_{ij} + \beta_2 ESG\ Certification_{ij} + \beta_3 ln(Wage_{ij}) + \beta_4 NWA_{ij} + \beta_5 FS_{ij} + \epsilon_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 ESG\ Sentence\epsilon_{ij} + \beta_2 ESG\ Certificationij + \beta_3 ln(Wage_{ij}) + \beta_4 NWA_{ij} + \beta_5 FS_{ij} + Demographic\ controls_i + \epsilon_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 ESG\ Sentence\epsilon_{ij} + \beta_2 ESG\ Certificationij + \beta_3 ln(Wage_{ij}) + \beta_4 NWA_{ij} + \beta_5 FS_{ij} + IndividualFE + \epsilon_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. *ESG Sentence* is an indicator variable equal to one if the job posting displays at least one ESG sentence. *ESG Certification* is an indicator variable equal to one if the job posting displays an ESG certification. See the supplementary appendix for additional details. In Panel B, we control for job posting characteristics, which are controls for the number of on-the-job activities, number of on-the-job opportunities, employer industry, employer establishment year, number of job prerequisites, and is an indicator variable equal to one if the job posting is for a position not located in the respondent's primary chosen city. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE AIV.  Job-Seekers' Preferences for Corporate ESG – Complete Raw Sample

|  | *Interest* (1) | *Interest* (2) | *Interest* (3) |
|---|---|---|---|
| ESG | 0.093*** | 0.092*** | 0.083*** |
|  | (0.025) | (0.024) | (0.019) |
| Ln(Wage) | 1.131*** | 1.143*** | 1.215*** |
|  | (0.030) | (0.030) | (0.026) |
| Nonwage Amenities | 0.057*** | 0.057*** | 0.061*** |
|  | (0.014) | (0.013) | (0.011) |
| Financial Strength | −0.004 | −0.005 | 0.018 |
|  | (0.040) | (0.039) | (0.031) |
| Observations | 25,040 | 25,040 | 25,040 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: This table reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Demographic\ controls_i + e_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Individual FE + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. See the supplementary appendix for additional details. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE AV. Granular ESG Effect on Interest

| | *Interest* (1) | *Interest* (2) | *Interest* (3) |
|---|---|---|---|
| Environmental Sentence | 0.083** (0.036) | 0.074** (0.034) | 0.079*** (0.027) |
| Social Sentence | 0.058 (0.053) | 0.066 (0.052) | 0.041 (0.041) |
| Governance Sentence | 0.044 (0.048) | 0.039 (0.046) | 0.019 (0.036) |
| B Corp Certification | 0.192*** (0.064) | 0.190*** (0.062) | 0.111** (0.049) |
| GPTW Certification | 0.088 (0.066) | 0.097 (0.064) | 0.149*** (0.050) |
| GBB Certification | 0.028 (0.060) | 0.041 (0.057) | 0.032 (0.045) |
| Ln(Wage) | 1.116*** (0.031) | 1.129*** (0.030) | 1.206*** (0.026) |
| Nonwage Amenities | 0.059*** (0.014) | 0.060*** (0.014) | 0.064*** (0.011) |
| Financial Strength | −0.002 (0.041) | −0.006 (0.040) | 0.016 (0.032) |
| Observations | 24,120 | 24,120 | 24,120 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| Job Posting Controls | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: This table reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 Enviromental_{ij} + \beta_2 Social_{ij} + \beta_3 Governance\epsilon_{ij} + \beta_4 BCorp_{ij} + \beta_5 GPTW_{ij} + \beta_6 GBB_{ij} + \beta_7 ln(Wage_{ij}) + \beta_8 NWA_{ij} + \beta_9 FS_{ij} + \epsilon_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 Enviromental_{ij} + \beta_2 Social_{ij} + \beta_3 Governance\epsilon_{ij} + \beta_4 BCorp_{ij} + \beta_5 GPTW_{ij} + \beta_6 GBB_{ij} + \beta_7 ln(Wage_{ij}) + \beta_8 NWA_{ij} + \beta_9 FS_{ij} + Demographic\ controls_i + \epsilon_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 Enviromental_{ij} + \beta_2 Social_{ij} + \beta_3 Governance\epsilon_{ij} + \beta_4 BCorp_{ij} + \beta_5 GPTW_{ij} + \beta_6 GBB_{ij} + \beta_7 ln(Wage_{ij}) + \beta_8 NWA_{ij} + \beta_9 FS_{ij} + IndividualFE + \epsilon_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. *Enviromental* is an indicator variable equal to one if the job posting displays at least one ESG sentence related to environmental practices. *Social* is an indicator variable equal to one if the job posting displays at least one ESG sentence related to social practices. *Governance* is an indicator variable equal to one if the job posting displays at least one ESG sentence related to governance practices. *BCorp* is an indicator variable equal to one if the job displays a B Corporation certification. *GPTW* is an indicator variable equal to one if the job displays a Great Place to Work certification. *GBB* is an indicator variable equal to one if the job displays a Green Business Bureau certification. See the supplementary appendix for additional details. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE AVI. ESG Effect on Interest – Wage in Levels (BRL1000)

| | Interest (1) | Interest (2) | Interest (3) |
|---|---|---|---|
| ESG | 0.101*** | 0.103*** | 0.089*** |
| | (0.026) | (0.025) | (0.020) |
| Wage | 0.237*** | 0.240*** | 0.256*** |
| | (0.008) | (0.008) | (0.007) |
| Nonwage Amenities | 0.058*** | 0.058*** | 0.063*** |
| | (0.014) | (0.014) | (0.011) |
| Financial Strength | −0.008 | −0.011 | 0.010 |
| | (0.041) | (0.040) | (0.032) |
| Observations | 24,120 | 24,120 | 24,120 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: This table reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 Wage_{ij} + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 Wage_{ij} + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Demographic\ controls_i + e_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 Wage_{ij} + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + IndividualFE + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE AVII. Job-Seekers' Perceived Reciprocal Interest in Job Postings

|  | *Reciprocal Interest* (1) | *Reciprocal Interest* (2) | *Reciprocal Interest* (3) |
|---|---|---|---|
| ESG | 0.019 (0.024) | 0.017 (0.024) | 0.027 (0.018) |
| Ln(Wage) | 0.490*** (0.029) | 0.492*** (0.029) | 0.527*** (0.022) |
| Nonwage Amenities | 0.036*** (0.013) | 0.037*** (0.013) | 0.042*** (0.010) |
| Financial Strength | −0.009 (0.039) | −0.013 (0.039) | 0.002 (0.028) |
| Observations | 24,120 | 24,120 | 24,120 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: This table reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Demographic\ controls_i + e_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Individual FE + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. See the supplementary appendix for additional details. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE AVIII. ESG Effect on Interest – Re-Weighted

|  | *Interest* (1) | *Interest* (2) | *Interest* (3) |
|---|---|---|---|
| ESG | 0.078** (0.036) | 0.079** (0.035) | 0.066** (0.027) |
| Ln(Wage) | 0.951*** (0.043) | 0.960*** (0.042) | 1.054*** (0.034) |
| Nonwage Amenities | 0.059*** (0.019) | 0.064*** (0.019) | 0.064*** (0.015) |
| Financial Strength | −0.083 (0.058) | −0.080 (0.057) | −0.060 (0.046) |
| Observations | 24,120 | 24,120 | 24,120 |
| Individual FE | No | No | Yes |
| Strata FE | Yes | Yes | Yes |
| **Controls** | | | |
| Gender | No | Yes | - |
| Race | No | Yes | - |
| Age | No | Yes | - |
| Income | No | Yes | - |
| Employment Status | No | Yes | - |
| Political View | No | Yes | - |

**Notes**: This table reports the regression coefficients for the following specifications. Column (1) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. Column (2) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + Demographic\ controls_i + e_{ij}$. Column (3) specification: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + IndividualFE + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. The sample is re-weighted to be perfectly representative of the Brazilian population active in the workforce, using the PNAD data described in Section 3.2. We use the logistic regression approach to generate propensity scores to re-weight observations in our survey data. The procedure follows the following steps. First, in the PNAD data, we select the characteristics included in our survey data (i.e., gender, race, age, income, and education). Second, we append the PNAD variables to our survey data and generate an indicator variable equal to 0 for the PNAD data and 1 for the survey data. Third, we use the generated indicator variable as a dependent variable in a logistic regression where the other characteristics are used as independent variables and save the predicted probability. Finally, we weigh the main specification by the inverse of the predicted probability. See the supplementary appendix for additional details. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE AIX. Rank-Ordered Logit by Socio-Demographic Sub-Sample

|  | (1) Not Highly Educated | (2) Highly Educated |
|---|---|---|
| ESG | 0.015 | 0.141*** |
|  | (0.028) | (0.025) |
| Ln(Wage) | 1.061*** | 0.938*** |
|  | (0.041) | (0.027) |
| Nonwage Amenities | 0.048*** | 0.054*** |
|  | (0.015) | (0.014) |
| Financial Strength | -0.074* | 0.082** |
|  | (0.044) | (0.040) |
| Observations | 10,540 | 13,580 |
| Number of Groups | 527 | 679 |

**Notes**: This table reports the ordered logit regression coefficients for the following specification: $Rank_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. $i$ is the $i^{th}$ individual and $j$ is the $j^{th}$ job posting rated by individual $i$. We run an ordered logit regression for each possible combination of sub-sample for the demographic characteristics of interest, *Highly Educated*, indicating whether the respondent has obtained a college degree. In Column (1), we sub-sample for respondents who are not highly educated. In Column (2), we sub-sample for respondents who are highly educated. *Rank* is the rank out of the 20 job postings rated by the respondent. See the supplementary appendix for additional details. *p<0.1; **p<0.05; ***p<0.01

TABLE AX. Correlation between TFP - Firm FE ($\bar{\xi}_j$) and Productivity ($a_{jg}$)

|  | (1) Productivity ($a_{jg}$) |
|---|---|
| TFP - Firm FE ($\bar{\xi}_j$) | 0.126*** |
|  | (0.001) |
| Constant | 0.229*** |
|  | (0.000) |
| Observations | 1,323,082 |

**Notes**: This table reports the regression between firms' TFP - firm FE ($\bar{\xi}_j$) and demographic group productivity $a_{jg}$ for the group $g$ of highly educated individuals. The specific regression specification is: $a_{jg} = \beta_0 + \beta_1 \bar{\xi}_j + e_j$. See Section 6.3 for more details on the model estimation. Robust standard errors are reported in parentheses. Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

## APPENDIX A.3. FIRM-LEVEL SURVEY STRUCTURE

We provide the entire text of the firm-level survey in the supplementary appendix.[28] The survey begins with an introduction that outlines its purpose, verifies whether the respondent is an owner and firm size, and obtains consent. We exclude non-owners or firms with less than 10 full-time employees. We then provide a concise overview of the survey structure.

We gather information on firm industry, establishment year, and location. Subsequently, we provide an overview of environmental, social, and governance (ESG) practices and ask about respondents' ESG knowledge, the extent to which their firm has implemented ESG practices, perceived ESG benefits and challenges, and B Corp certification awareness.

Respondents then estimate costs for implementing various ESG practices. The survey covers the three ESG categories systematically, providing brief descriptions for each. Respondents select the top two practices relevant to businesses similar to their own. For each chosen practice, we present criteria needed for strong ESG performance. Respondents estimate associated costs, including one-time fixed expenses and recurring annual costs, and rate their confidence in their provided estimates. They also estimate their willingness to pay for an investment that would enable their company to meet the criteria for strong ESG performance and evaluate the likelihood of their company making the investment within the next 1–3 years.

We then provide a overview of B Corp. We ask for the respondent's lower-bound, upper-bound, and best estimate of the one-time fixed cost required to fulfill the requirements for B Corp certification. As in the prior section, we also inquire about their level of confidence in their estimates, their willingness to pay for certification, and the probability of making this financial investment to attain B Corp certification.

We subsequently collect employee demographics and revenue. Respondents then select and rank four industries, excluding their own, that they believe exhibit the highest and lowest standards of ESG performance. To conclude, we collect respondent demographics, including gender, age, ethnicity, education background, and political preferences. We also check respondent attentiveness and inquire about the level of effort put forth to filter out low-quality responses. For additional details of the firm-level survey, see the supplementary appendix.

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[28]The survey was administered using Qualtrics survey software.