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

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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 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.

[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.

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, 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.[2] Several papers look at firms' decisions to become more green to access cheaper sources of capital (Heinkel et al., 2001; 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 and Groening et al. 2018 for reviews), 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 on a potential quantitatively meaningful motive behind firms' decisions to invest in ESG: to attract and retain talent.

Second, 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).[3] A recent wave of studies has started to develop linking corporate and personal values to various worker and business outcomes in the private sector (Hussam et al., 2022; Ashraf et al., 2023).[4] A subset of this literature studies the impact of organizational values on worker selection and sorting across firms. Colonnelli et al. (2022b) show that workers match with business owners sharing their same political views, and Lee et al. (2014); Hoang et al. (2022); Fos et al. (2023) show sorting of top U.S. executives along political lines. Adrjan et al. (2023) study the impact of public announcements of socially and politically polarizing corporate policies on job-seeker interest

[2]Examples include Hong and Kacperczyk (2009), Amel-Zadeh and Serafeim (2018), 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).

[3]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.

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

and employee satisfaction. 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.

Finally, we speak to the labor literature on nonwage amenities dating back to the theoretical contributions by Rosen (1974, 1986) on compensating wage differentials.[6] 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).[7] 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).[8]

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 labor market equilibrium. Section 3 describes our main data sources. 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.

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

[6]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.

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

[8]Bond and Glode (2014) provide a theoretical analysis of how nonpecuniary benefits could impact the allocation of human capital between bankers and regulators.

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.

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, a major middle-income economy, by means of a novel large-scale 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 1, 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 1 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.

We also inquire about ESG adoption barriers and benefits. In Figure 1 Panel A, we show that respondents perceive the main barriers to ESG adoption to be competing priorities

[9]See Appendix Sections A.5 and A.6 for details on the survey structure and questionnaire. Appendix Table A1 provides an overview of the sectors that we target.

(40%), limited human capital (30%), and cost constraints (29%). Importantly, 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 (see Figure 1 Panel B for details).

As discussed in greater 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 1 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.[10]

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.

[10]The most selected ESG practices are (i) for environmental practices: recycling and waste production, water usage and conservation, and sustainable packaging; (ii) for social practices: employee health and safety practices, management of diversity, equity, and inclusion, and employee engagement and satisfaction; and (iii) for governance practices: code of ethics, financial controls, and stakeholder communication and commitment.

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:

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

where ε_{ij} is a Type-1 Extreme Value idiosyncratic shock and τ 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 ε_{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

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

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, Ξ_j is firm TFP, A_g is the productivity multiplier of skilled/unskilled labor, and η 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 Δ_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 Δ_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:

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

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 η 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.[11] 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 Brazil's workforce and is widely considered to be a high-quality census of the formal labor market (Menezes-Filho et al., 2008; Dix-Carneiro, 2014; Helpman et al., 2017). We focus on data from the years 2002 to 2020.

[11] 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).

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.[12] 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.[13] We cover respondents located across all areas of Brazil, as shown in the map of Appendix Figure A1.

Column (1) of Table 2 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 2 present the same information using the latest available data from RAIS (2020) and PNAD (2022).[14] Overall, the demographics of our survey respondents broadly resemble those of

[12]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.

[13]In Appendix Table A3, we show robustness of all our main results using the entire raw sample without removing any low-quality responses. Our results remain largely unchanged.

[14]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).

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.

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.[15] 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

[15]See Low (2021); Colonnelli et al. (2022b, 2020) for applications of this design in a variety of settings, and Harrison and List (2004) for a broader discussion of "framed field experiments."

survey.[16] 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 A2. Section 3.2 provides more details on the final sample of 1,206 job-seekers.

4.1.2. *Survey Structure.* We illustrate the structure of our survey in Figure 2 and provide the survey text in Appendix Section A.3. The survey begins with outlining the goal of the survey and incentives to participate, and confirming consent to proceed.[17] 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

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

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 A3, A4, A5, and A6, 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 Table 3. The full material used to create the synthetic job postings is reported in Appendix A.4.

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.[18] 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 Appendix Table A14 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 Appendix Tables A15 to A20.

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

[18]In Appendix Tables A10, A11, and A12, we tabulate the job titles available to respondents based on their level of education and professional area. In Appendix Table A13, we report the complete list of cities by state.

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 Appendix Table A21, we provide a 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 *Green Business Bureau*. We provide additional details on these ESG certifications in Appendix Table A22. 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 (see Appendix Table A23 for details). 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.[19] We also always include an "auxiliary sentence" about the job opening to provide additional structure to the job posting (see Appendix Table A31). We designed the job prerequisites to be sufficiently broad to not discourage respondents from the job opportunity.[20] We also always include major requirements for all respondents who have completed college and when prerequisites are displayed (see Appendix Table A33 for details).

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 Appendix Table A34 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.

[19]See Appendix Tables A24 to A30 for details.
[20]For a complete list of job prerequisites, see Appendix Table A32.

We randomly draw between 2–4 nonwage amenities. For a description of all nonwage amenities, see Appendix Table A35.

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.[21] 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?"*

We measure the response on a scale of 1 to 7, where 1="Moderately interested" and 7="Dream job!"[22] 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

[21]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.
[22]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.

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:

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

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 β_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.[23] Given that the job postings consist of a randomized set of features (of which ESG is one of many), β_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 β_2, β_3, and β_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 4. 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.[24] 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,

[23]In additional analyses we will also include different indicator variables for different ESG sentences and for ESG sentences versus actual certifications.

[24]We report the distribution of interest scores in Appendix Figure A7.

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 A5 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 of our survey respondents, who, as shown in Table 2, earn above-average wages. 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 2).

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 3. 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 5, 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.

In Table 5 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.

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 A2 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

A4, 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 A8, 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.[25]

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 A6 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.

Fourth, we perform multiple robustness tests to confirm the validity of our findings. In Appendix Table A7, 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 sociodemographic dimensions. Next, our results hold for all possible combinations of socioeconomic controls, which we illustrate in Appendix Figure A9 with a stability plot for our *ESG*

[25]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.

coefficient. Finally, our results also continue to hold when we add controls for job posting characteristics.[26]

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 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:

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

[26]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.

where $g(i)$ denotes the demographic group of worker i, ε_{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:

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

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 Ξ_{jt}, and demographic-specific productivity multipliers A_{jgt}. In each period, a firm produces according to the isoelastic neoclassical production 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 Δ_{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 τ_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, τ_g and $\Upsilon_g(E_j=1)$, 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 $\Upsilon_g (E_j = 1)$.

Subsequently, we use our employee-employer matched data to recover a nonwage amenity valuation $\Theta_g (X_{jt})$ at the individual firm level.[27] 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 $\Theta_g (X_{jt}) = 1$ for a single baseline firm j^*, we then recover from equation (6.2):

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

That is, the $\Theta_g (X_{jt})$ 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 ξ_{jt}, the productivity a_{jg} of demographic g at firm j, and the firm return-to-scale parameter η. 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:

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

[27] 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 η 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 ν_{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 η. The key endogeneity problem is that l_{jt} is correlated with the error ω_{jt}. More productive firms will hire more workers. This would bias the OLS regression estimate of η. We therefore calibrate η 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 A8. 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 τ_g, which determines the labor supply elasticity $\sigma_g = 1/\tau_g$. We can determine the implied labor supply elasticity σ_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. Figure 4 shows the binscatter of firm TFP against the skilled worker productivity shifter and demonstrates a clear positive relationship. Specifically, as reported in Appendix Table A9, 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 ξ^* such that only firms in clusters with a TFP ξ_j exceeding ξ^* 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 ξ^* and ϕ. 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 5. 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 A8 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 5 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 5. 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 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.[28]

Panel C of Figure 5 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

[28]It should be noted that the allocative efficiency benefits disappear if the TFP cutoff is set too high. As Panel B of Figure 5 shows, total output is maximized at intermediate levels of the TFP cutoff.

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 6. From the table, we see that firms with a higher TFP and firms with a higher skilled productivity multiplier 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 5) 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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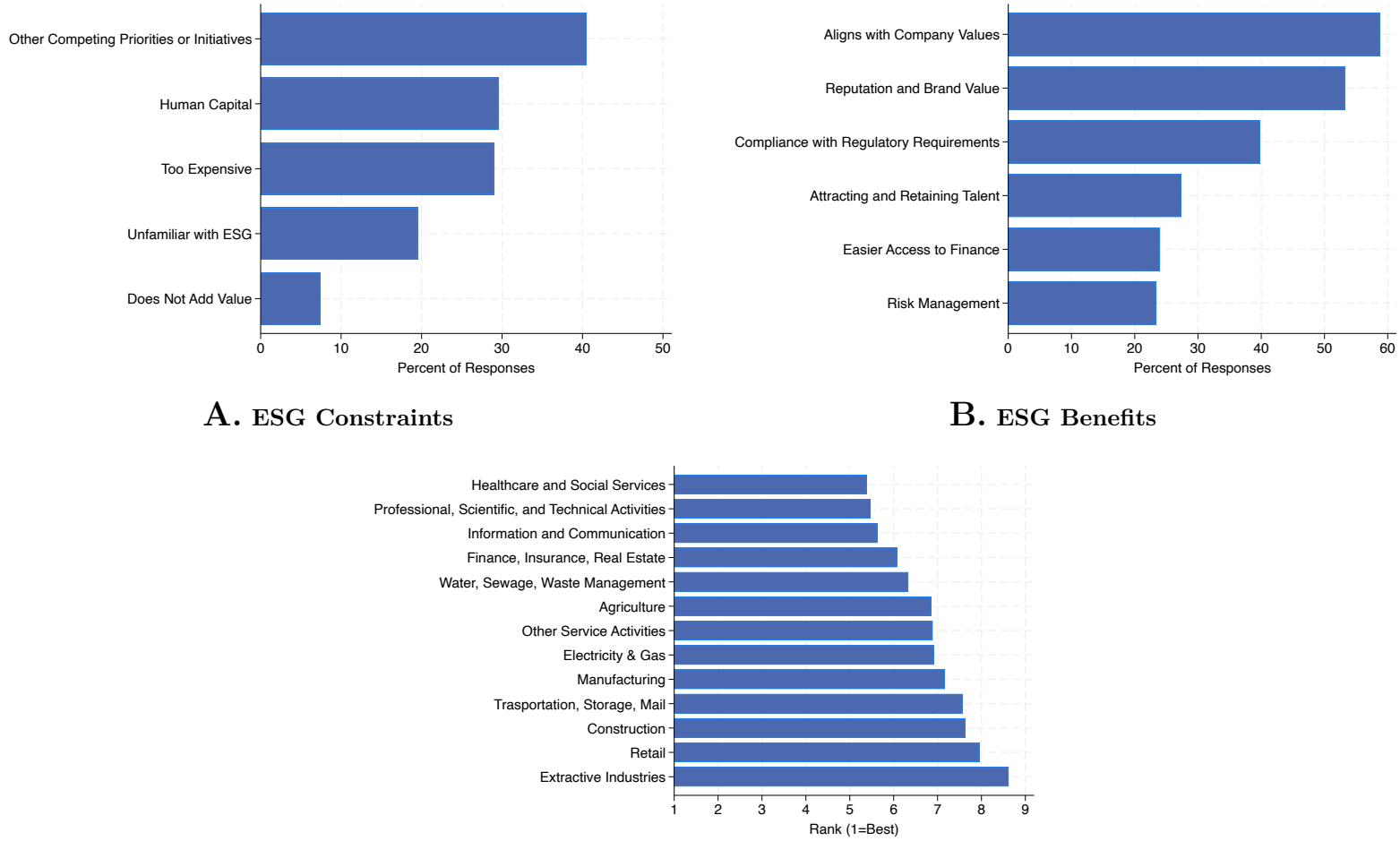


FIGURE 1. Firm Survey of ESG Practices

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.6.

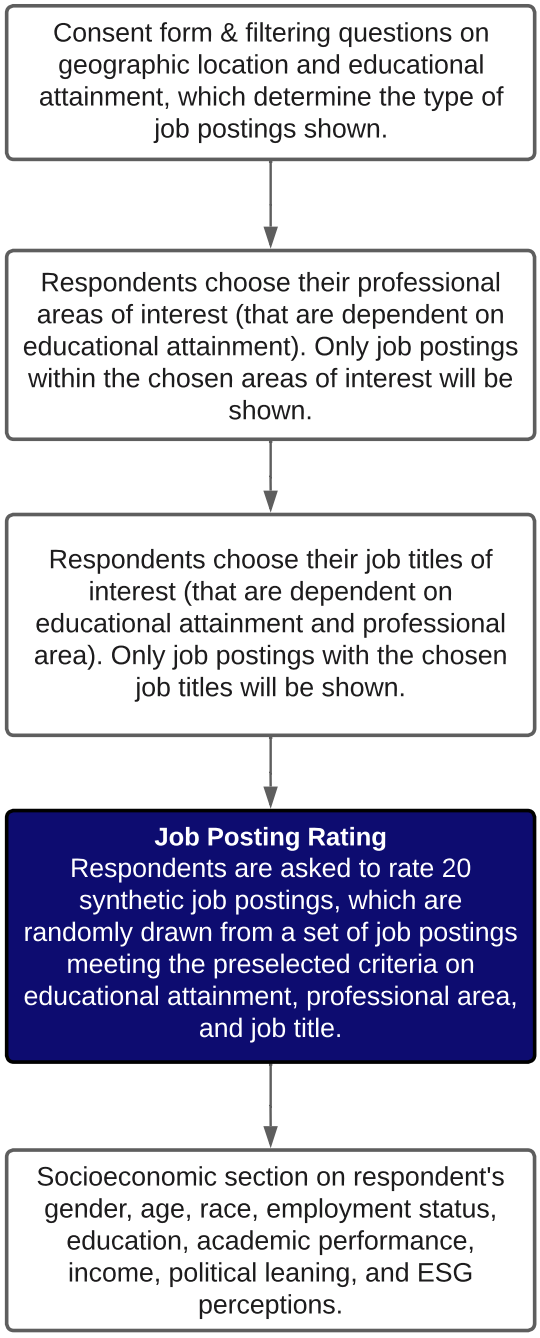
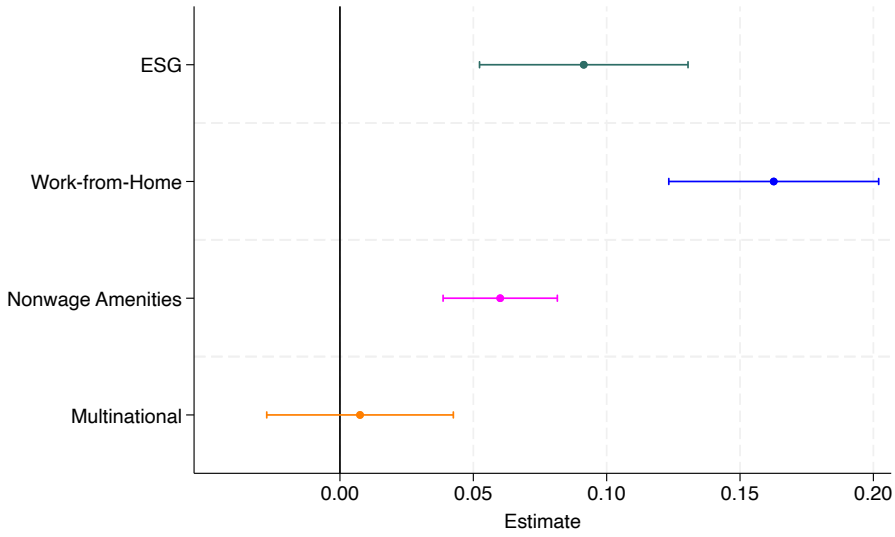
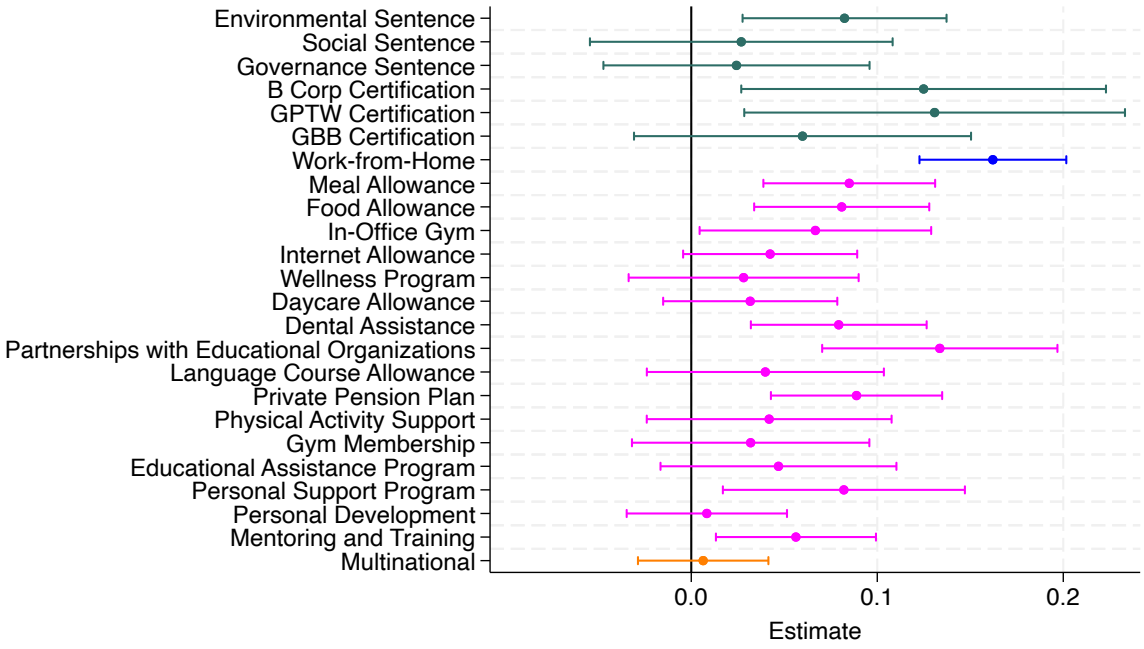


FIGURE 2. Experimental Survey Flow

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



A. Aggregate ESG Signals and Nonwage Amenities

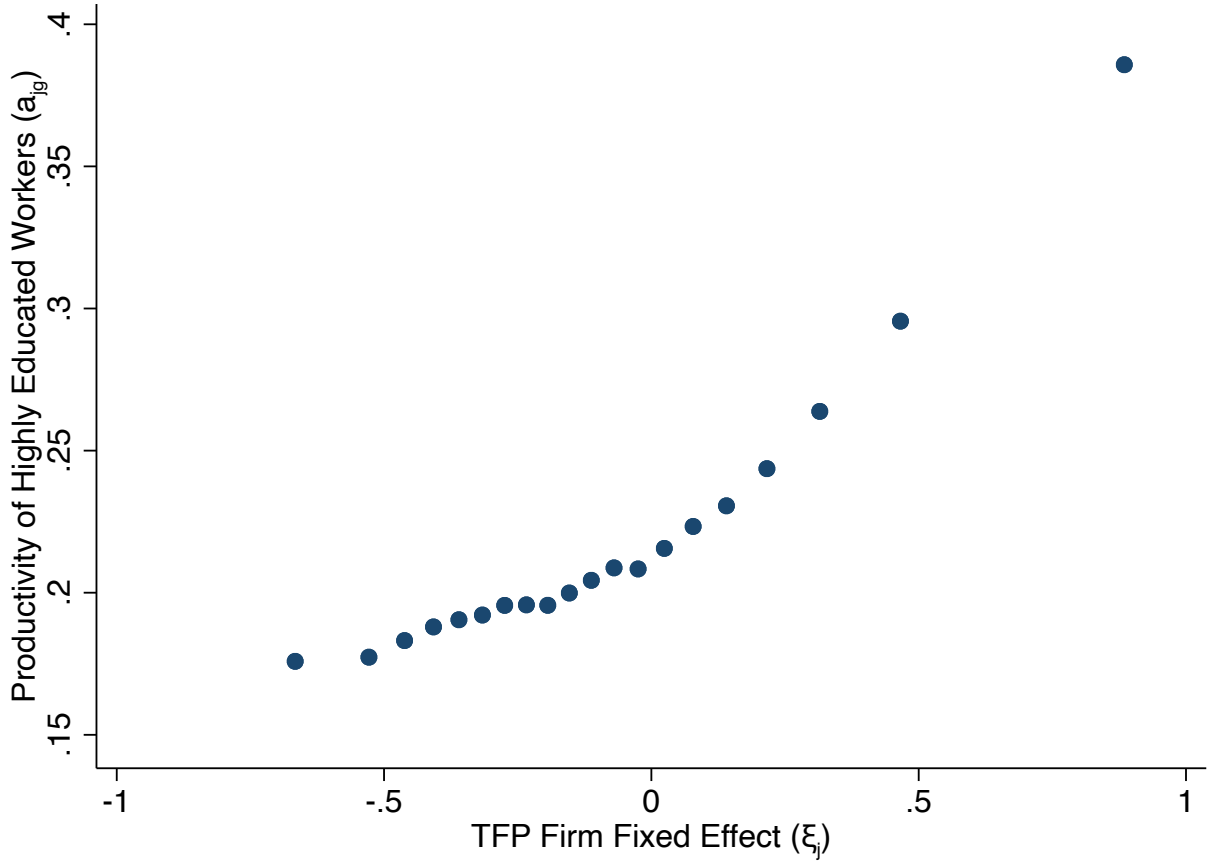


B. Granular ESG Signals and Nonwage Amenities

FIGURE 3. ESG Signals and Nonwage Amenities on Job-Seeker Interest

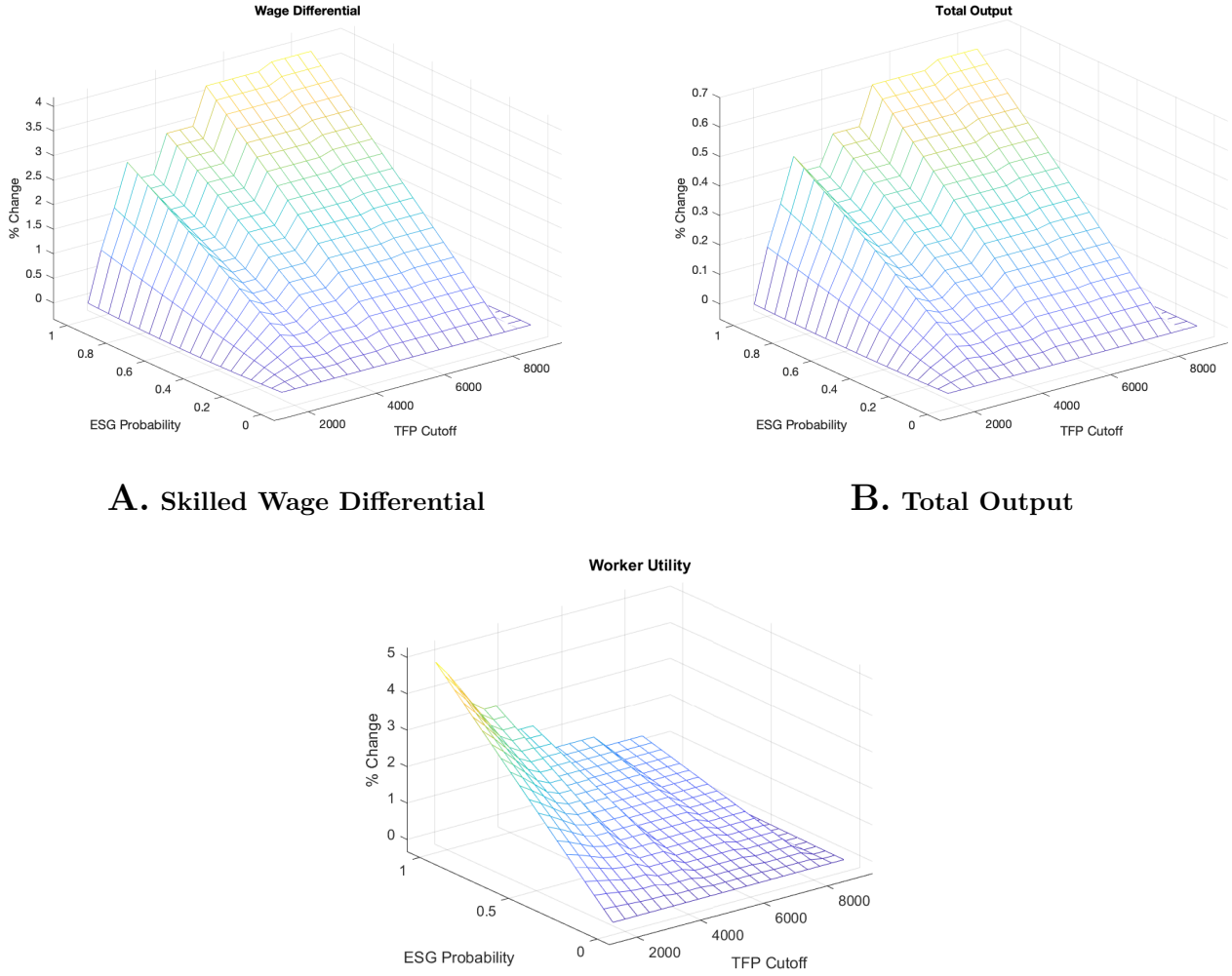
Notes: Panel A shows the estimates and 95% confidence interval for the coefficients β_2 to β_5 for the regression: $Interest_{ij} = \alpha+\beta_1 Wage_{ij}+\beta_2 ESG_{ij}+\beta_3 WFH_{ij}+\beta_4 NWA_{ij}+\beta_5 Multinational_{ij}+IndividualFE+e_{ij}$. Panel B shows the estimates and 95% confidence interval for the coefficients β_2 to β_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. $Wage$ is the monthly wage displayed in the job posting. ESG is an indicator variable equal to one if the job posting displays at least one ESG sentence (see Appendix Table A21) or ESG certification (see Appendix Table A22). $Enviromental(Social)[Governance]$ is an indicator variable equal to one if the job posting displays at least one ESG sentence related to environmental(social)[governance] practices. $BCorp(GPTW)[GBB]$ is an indicator variable equal to one if the job displays a B Corporation(Great Place to Work)[Green Business Bureau] certification. WFH is an indicator variable equal to one if the job posting includes a work-from-home arrangement. 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. $Multinational$ is an indicator variable equal to one if the job posting mentions that the firm is a multinational.

FIGURE 4. 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 A9. 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 5. 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 (ξ^*) and the probability that firms will adopt ESG practices ($\phi \in [0, 1]$), and repeatedly solve for the labor market equilibrium as we vary ξ^* and ϕ. 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.

TABLE 1. 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
Revenue (million BRL)	98.71	262.26	0.03	0.30	1.50	13.30	350.00
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
Employee Monthly Wage (BRL)	5,452.70	3,496.60	2,124.09	2,885.99	4,328.60	6,891.80	11,155.00
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). The variables *Company Age (years)*, *Revenue (million BRL)*, *Full-Time Employees*, and *Survey Duration (minutes)* have been winsorized at the 95^{th} percentile on the right tail. Observations greater than the 95^{th} percentile were set to the value of the 95^{th} percentile. Panel B shows the summary statistics for the firm's future and current ESG practices. The survey sampled a total of 1,067 firms.

TABLE 2. 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.

TABLE 3. 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 Appendix Tables A10, A11, and A12 for a curated list of job titles by level of education.
Location	1	1	Specified by survey respondent. If multiple cities are selected, *Primary Preference* (80%), *Secondary Preference(s)* (20%). See Appendix Table A13 for a list of cities by state.
Wage	1	1	See Appendix Table A14 for details on wage distribution.
Work Regime	1	0.5	*CLT* (50%), *Service Provider (PJ)* (50%).
General Firm Characteristics			
Industry	1	1	See Appendix Table A15 for details on firm industry.
Establishment Year	1	1	See Appendix Table A16 for details on establishment year.
Number of Employees	1	1	See Appendix Table A16 for details on number of employees.
Number of Countries	1	1	One country (50%), and two to five countries (12.5% each). See Appendix Table A16 for details on number of countries.
Introductory Sentence	1	1	See Appendix Table A17(A18) for introductory sentences included in job postings from domestic(multinational) firms.
Financial Strength	1	0.1	*Profit* (25%), *Credit Rating* (25%), *Growth Outlook* (25%), *Bankruptcy Probability* (25%). See Appendix Table A19 for details on financial strength.
Auxiliary Sentence - Firm Description	1	Conditional on ESG Inclusion – 1	See Appendix Table A23 for details on auxiliary sentences included.
Firm ESG Characteristics			
ESG Sentences	1–2	80% – 0.2 20% – 0.5	*Environmental* (53%), *Social* (20%), *Governance* (27%). See Appendix Table A21 for details on ESG characteristics.
ESG Certification	1	0.1	*B Corporation* (33.3%), *Great Place to Work* (33.3%) and *Green Business Bureau* (33.3%). See Appendix Table A22 for details on ESG certifications.
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 Appendix Table A24 for opportunities in each category.
On-the-Job Activities	3–5	0.6	See Appendix Tables A25, A26 and A27 for a list of on-the-job activities split by respondent's level of education.
On-the-Job Activities (Sentences)	1	0.5	See Appendix Table A28 for sentences describing on-the-job activities split by professional area.
Workload Requirement	1	0.7	See Appendix Table A29 for details on estimated workload requirements.
Work-from-Home	1	Completed High School – 0.3 Technical School – 0 Completed College – 0.3	See Appendix Table A30 for details on work-from-home options.
Auxiliary Sentence - Job Opening	1	1	See Appendix Table A31 for details on auxiliary sentences included.
Job Prerequisites			
Job Prerequisites	2–3	0.5	See Appendix Table A32 for details on job prerequisites.
Required Majors	1	Completed High School – 0 Technical School – 0 Completed College – 1	Specified by survey respondent. See Appendix Table A33 for the major requirements split by professional area presented to respondents that completed college.
Hiring Stages			
Stage 1 - Application	1	1	See Appendix Table A34 for details on hiring stages.
Stage 2 - Online Assessments	1	Completed High School – 0 Technical School – 0 Completed College – 1	See Appendix Table A34 for details on hiring stages.
Stage 3 - Other Assessments	1	Completed High School – 0 Technical School – 0 Completed College – 1	See Appendix Table A34 for details on hiring stages.
Stage 4 - Final Interview	1	1	See Appendix Table A34 for details on hiring stages.
Nonwage Amenities			
Nonwage Amenities	2–4	1	*Benefits* (70%), and *Amenities* (30%). See Appendix Table A35 for nonwage amenities in each category.

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 4. Job-Seekers' Preferences for Corporate ESG

	Interest (1)	*Interest* (2)	*Interest* (3)
ESG	0.098***	0.099***	0.085***
	(0.026)	(0.025)	(0.020)
Ln(Wage)	1.117***	1.130***	1.205***
	(0.031)	(0.030)	(0.026)
Nonwage Amenities	0.059***	0.060***	0.064***
	(0.014)	(0.014)	(0.011)
Financial Strength	−0.003	−0.006	0.015
	(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: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + e_{ij}$. 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. ESG is an indicator variable equal to one if the job posting displays at least one ESG sentence (see Appendix Table A21) or ESG certification (see Appendix Table A22). $ln(Wage)$ 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 Appendix Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE 5. 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 regression 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 variable 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. ESG is an indicator variable equal to one if the job posting displays at least one ESG sentence (see Appendix Table A21) or ESG certification (see Appendix Table A22). $ln(Wage)$ 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 Appendix Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE 6. 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 variable equal to one if the respondent stated at least a 90% likelihood of the firm making a financial investment to meet the industry's ESG standard 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 that responded that they have extensively implemented ESG practices. For additional details on our firm survey of ESG practices, see Appendix Section A.6. *p<0.1; **p<0.05; ***p<0.01

INTERNET 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:

$$\begin{aligned}\frac{dW_U}{dE_B} &= \sum_j \frac{dL_{jU}}{dE_B} W_{jU} - \sum_j (1-\eta)\eta\frac{\sigma}{1+\sigma} L_{jU}\Xi_j L_j^{-\eta-1}\frac{dL_j}{dE_B} \\ &= \frac{dL_{AU}}{dE_B}(W_{AU} - W_{BU}) + (1-\eta)\eta\frac{\sigma}{1+\sigma}\frac{dL_A}{dE_B}\left(-L_{AU}\Xi_A L_A^{-\eta-1} + L_{BU}\Xi_B L_B^{-\eta-1}\right).\end{aligned}$$

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:

$$\begin{aligned}-\frac{L_{AU}}{L_{BU}}\frac{\Xi_A}{\Xi_B}\left(\frac{L_B}{L_A}\right)^{\eta+1} + 1 &= -\frac{\Xi_A}{\Xi_B}\left(\frac{L_A}{L_B}\right)^{-\eta} + 1 \\ &= \frac{-W_A}{W_B} + 1 \\ &> 0,\end{aligned}$$

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:

$$\begin{aligned}\frac{dU}{dE_{j^*}} &= \sum_g \sum_j L_{jg} \left(\frac{d \log W_{jg}}{dE_{j^*}} + \frac{d \log \Upsilon_g (E_j)}{dE_{j^*}} \right) \\ &= L_{jS} \Upsilon'_S (0) + \sum_g \sum_j L_{jg} \frac{d \log W_{jg}}{dE_{j^*}},\end{aligned}$$

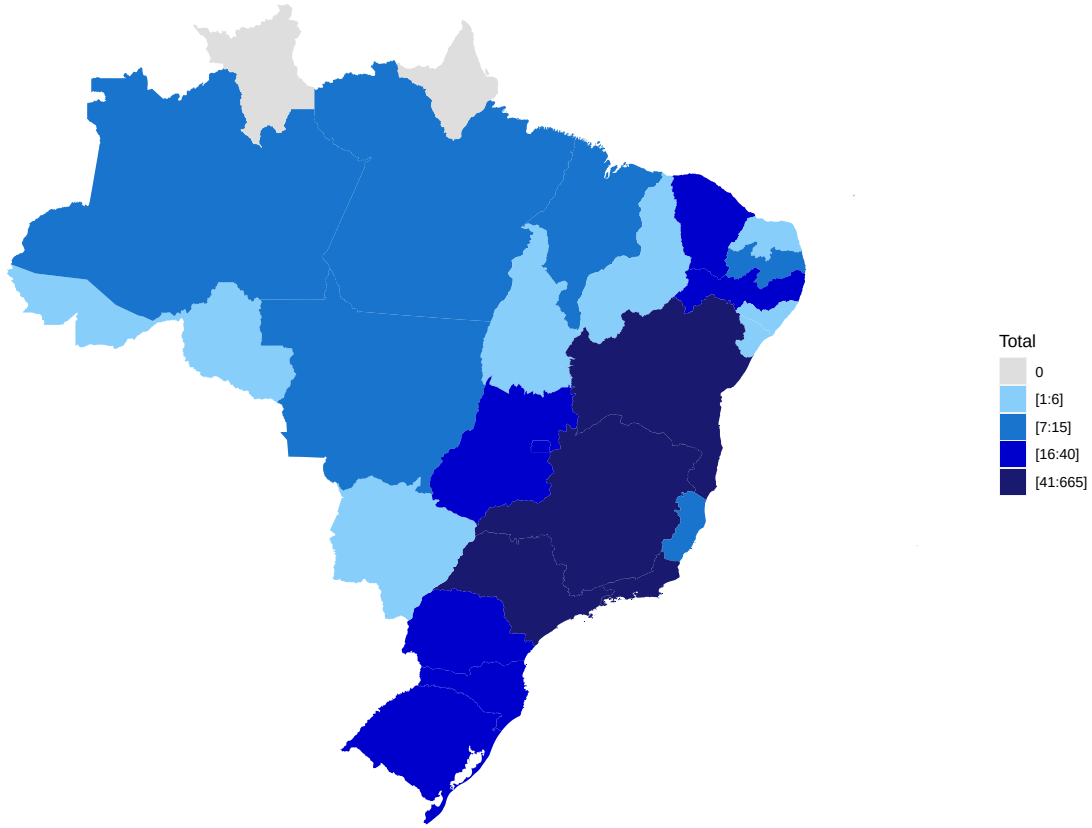
since $\Upsilon'_U (\cdot) = 0$ and $\Upsilon_S (0) = 1$. The second term is:

$$\begin{aligned}\sum_g \sum_j L_{jg} \frac{d \log W_{jg}}{dE_{j^*}} &= \sum_g \sum_j L_{jg} \left(-\eta \frac{d \log L_j}{dE_{j^*}} \right) \\ &= \sum_g \sum_j -\eta \frac{L_{jg}}{L_j} \frac{dL_j}{dE_{j^*}} \\ &= -\eta \frac{dL_A}{dE_{j^*}} \sum_g \left(\frac{L_{Ag}}{L_A} - \frac{L_{Bg}}{L_B} \right) \\ &= -\eta \frac{dL_A}{dE_{j^*}} \left(\frac{L_{AU} + L_{AS}}{L_{AU} + A_S L_{AS}} - \frac{L_{BU} + L_{BS}}{L_{BU} + A_S L_{BS}} \right) \\ &= -\eta \frac{dL_A}{dE_{j^*}} \left(\frac{L_U + L_S}{L_U + A_S L_S} - \frac{L_U + L_S}{L_U + A_S L_S} \right) \\ &= 0,\end{aligned}$$

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.

Appendix A.2. Additional Figures and Tables

Figure A1. 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.

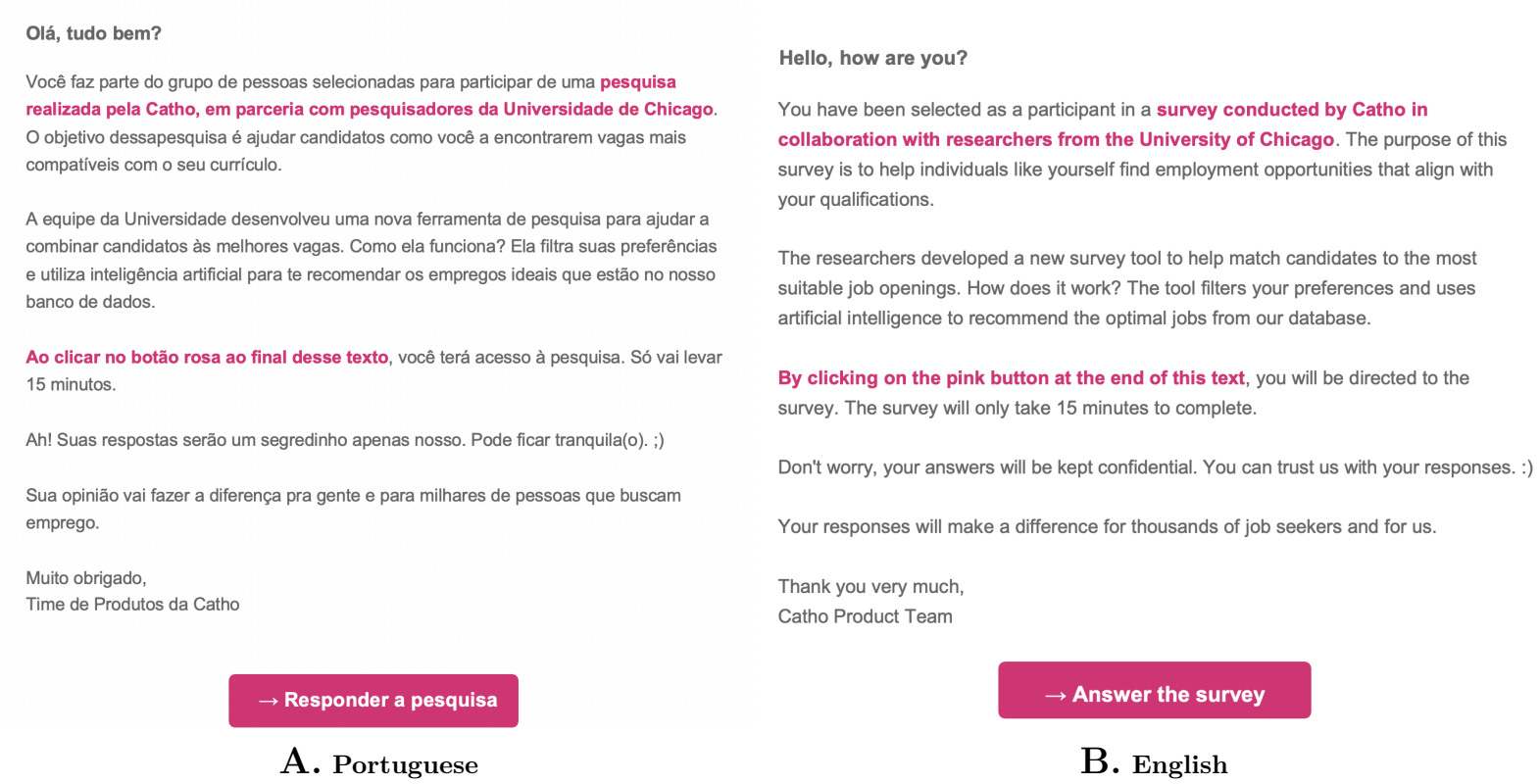


FIGURE A2. Email Sent to Survey Respondents

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!*).

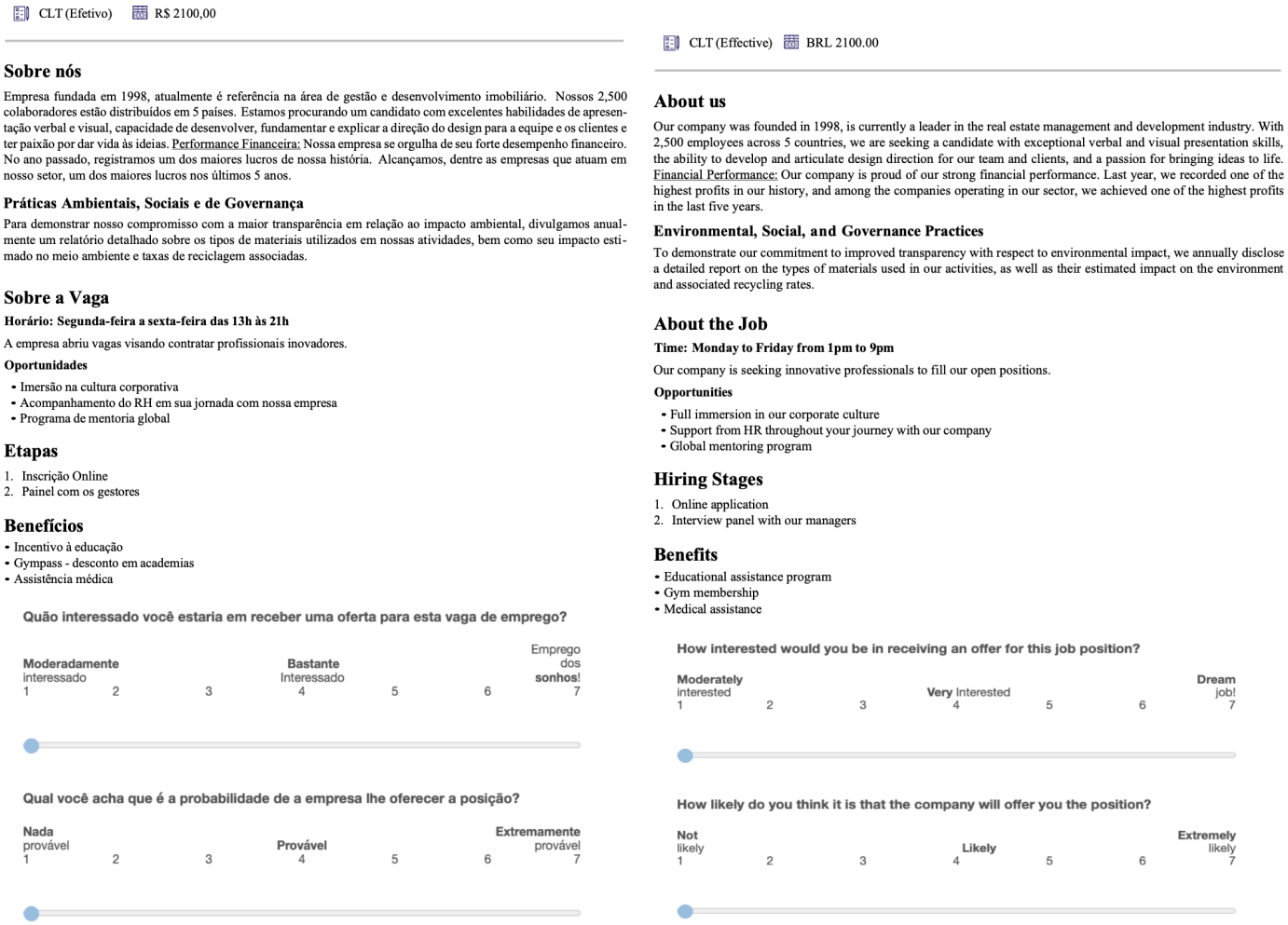


FIGURE A3. Example of Synthetic Job Posting E(SG) and Financial Performance

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.

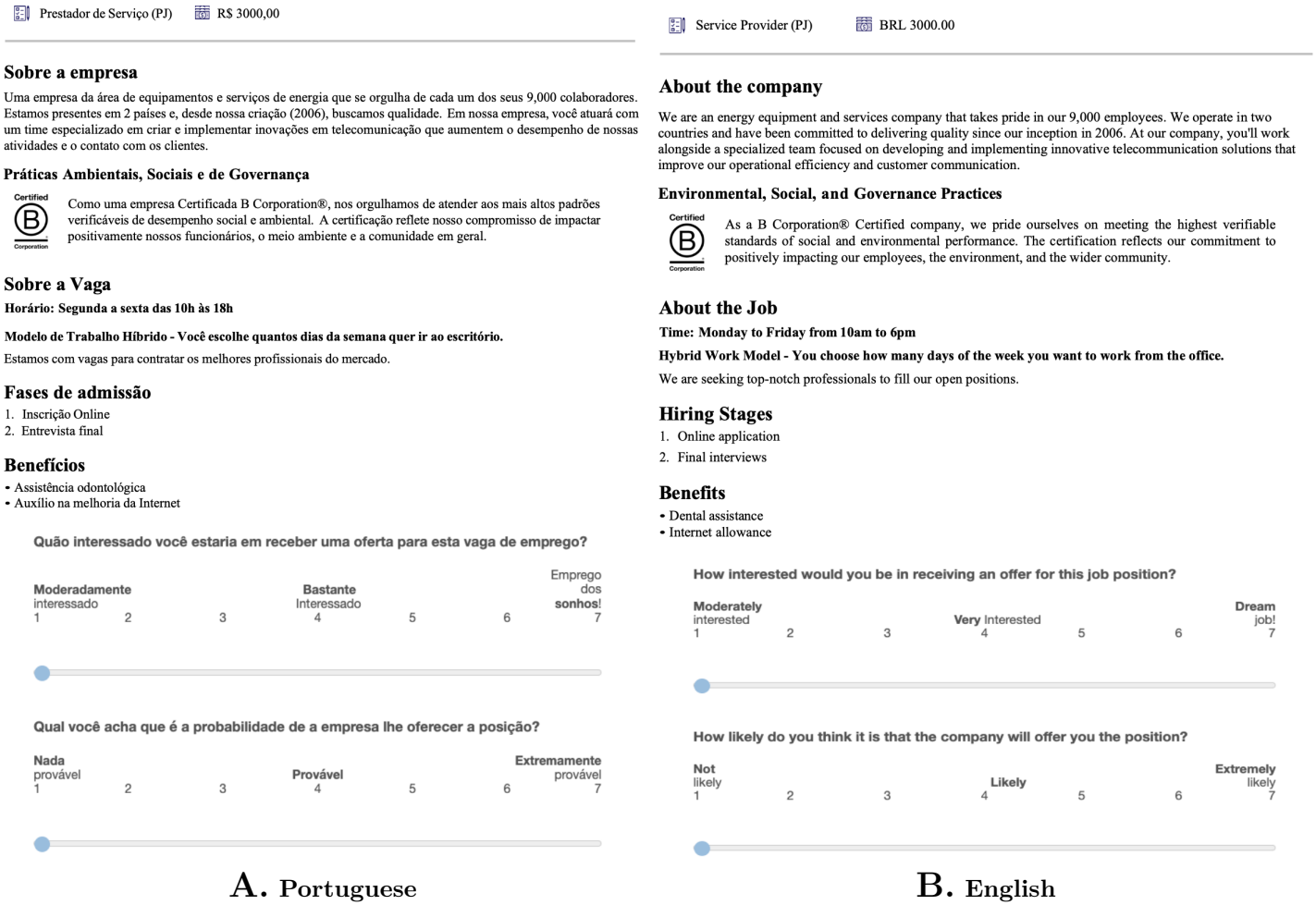


FIGURE A4. Example of Synthetic Job Posting
ESG Certification (B Corporation)

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.

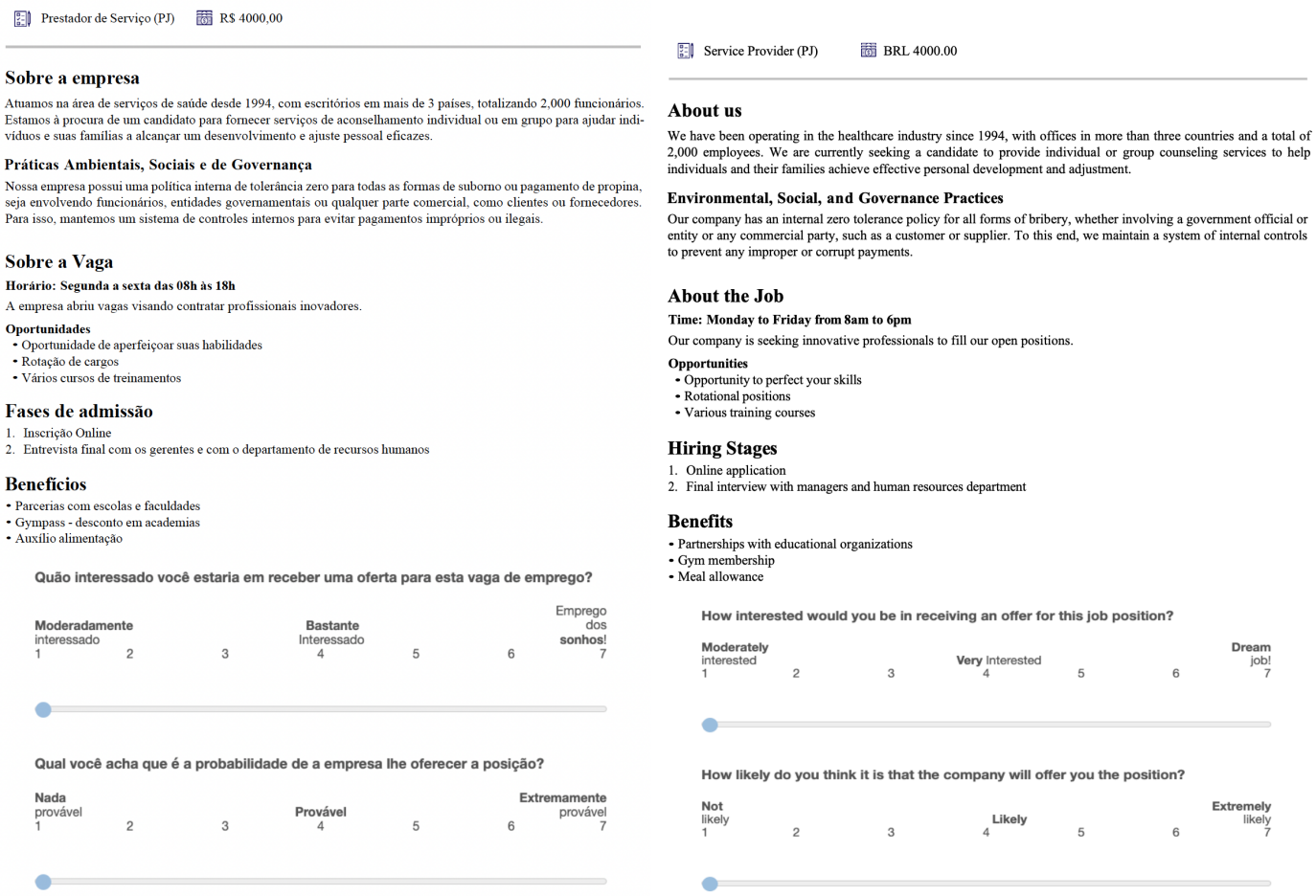


FIGURE A5. Example of Synthetic Job Posting (ES)G

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.

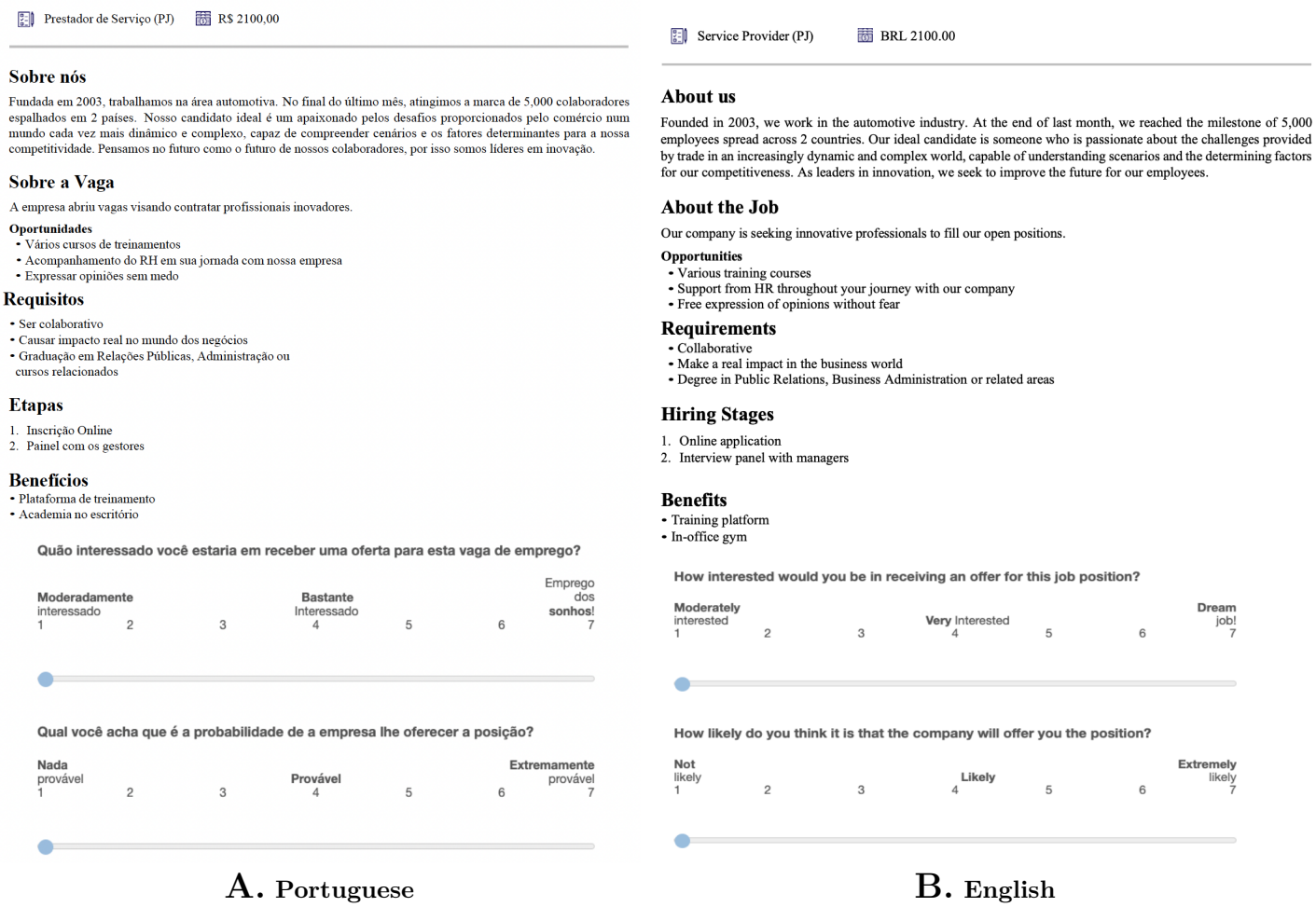


FIGURE A6. Example of Synthetic Job Posting Control

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.

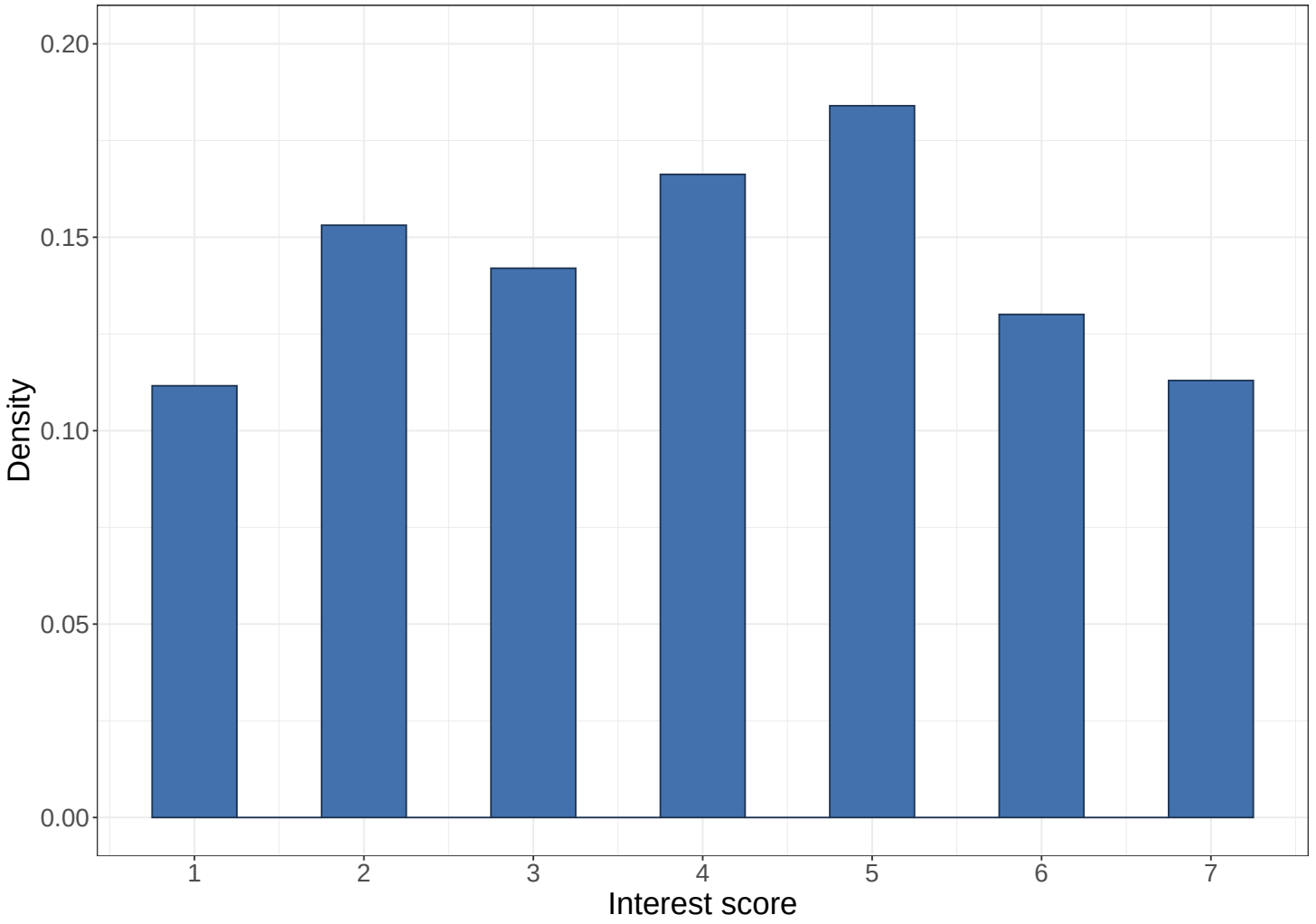
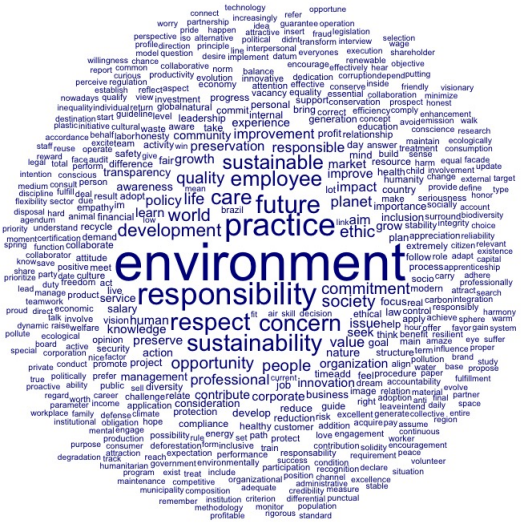


FIGURE A7. Distribution of Job Posting Ratings

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 A8. 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.

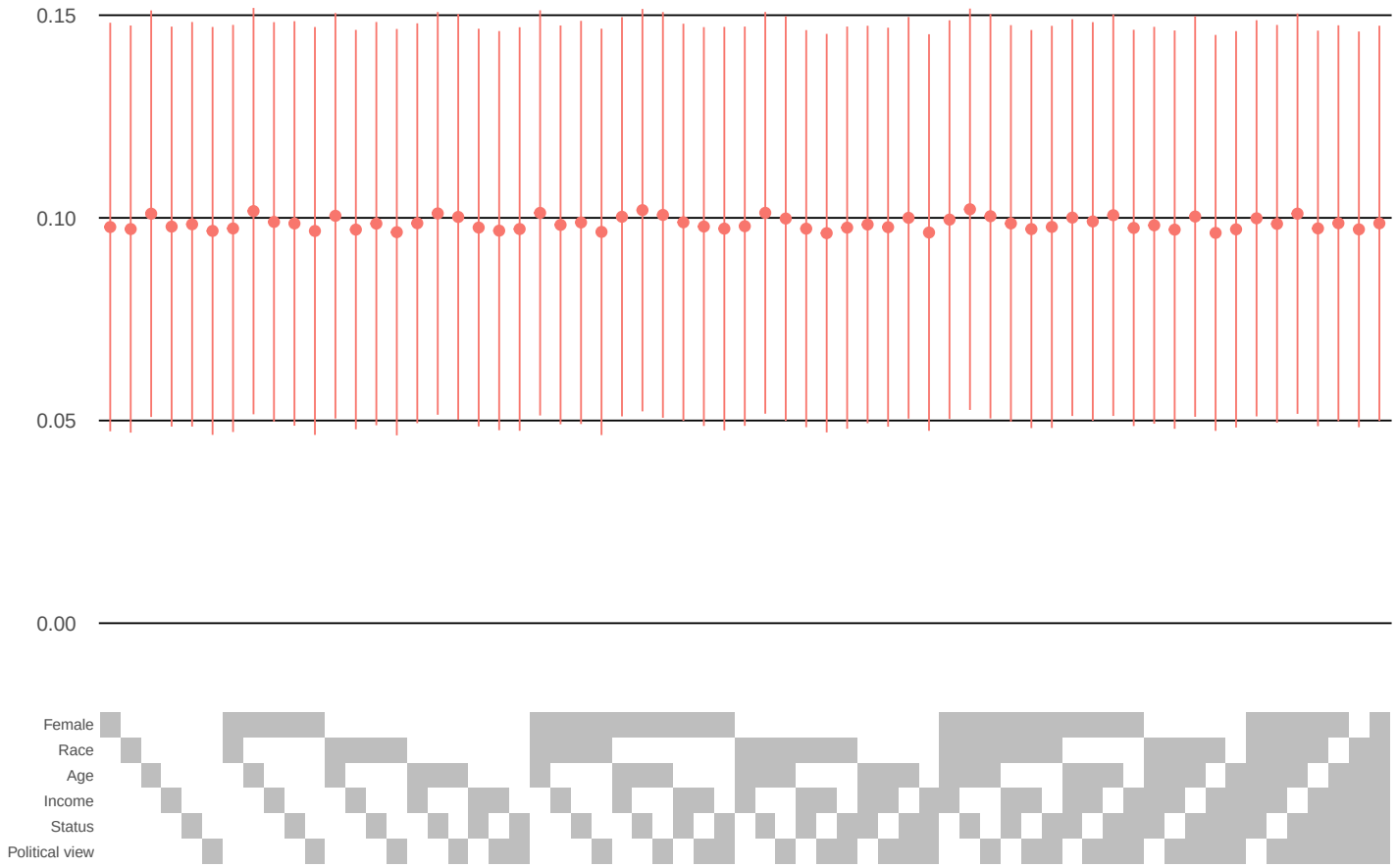


FIGURE A9. Coefficient Stability Plot

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 4 to the inclusion of all potential combinations of socioeconomic controls, more precisely, those included in Column (2).

TABLE A1. 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 A2. 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 (see Table A21). *ESG Certification* is an indicator variable equal to one if the job posting displays an ESG certification (see Table A22). $ln(Wage)$ 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 Table A19). 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 A3. 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: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + IndividualFE + e_{ij}$. 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 (see Table A21) or ESG certification (see Table A22). $ln(Wage)$ 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 Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE A4. Granular ESG Effect on Interest

	Interest (1)	*Interest* (2)	*Interest* (3)
Environmental Sentence	0.083**	0.074**	0.079***
	(0.036)	(0.034)	(0.027)
Social Sentence	0.058	0.066	0.041
	(0.053)	(0.052)	(0.041)
Governance Sentence	0.044	0.039	0.019
	(0.048)	(0.046)	(0.036)
B Corp Certification	0.192***	0.190***	0.111**
	(0.064)	(0.062)	(0.049)
GPTW Certification	0.088	0.097	0.149***
	(0.066)	(0.064)	(0.050)
GBB Certification	0.028	0.041	0.032
	(0.060)	(0.057)	(0.045)
Ln(Wage)	1.116***	1.129***	1.206***
	(0.031)	(0.030)	(0.026)
Nonwage Amenities	0.059***	0.060***	0.064***
	(0.014)	(0.014)	(0.011)
Financial Strength	−0.002	−0.006	0.016
	(0.041)	(0.040)	(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. See Table A21 for additional details on ESG sentences. *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 Table A22 for additional details on ESG certifications. $ln(Wage)$ is the natural logarithm of the monthly wage. 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 Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE A5. 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. ESG is an indicator variable equal to one if the job posting displays at least one ESG sentence (see Table A21) or ESG certification (see Table A22). $Wage$ is the monthly wage displayed in the job posting (in BRL 1000). 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 Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE A6. Job-Seekers' Perceived Reciprocal Interest in Job Postings

	Reciprocal Interest (1)	*Reciprocal Interest* (2)	*Reciprocal Interest* (3)
ESG	0.019	0.017	0.027
	(0.024)	(0.024)	(0.018)
Ln(Wage)	0.490***	0.492***	0.527***
	(0.029)	(0.029)	(0.022)
Nonwage Amenities	0.036***	0.037***	0.042***
	(0.013)	(0.013)	(0.010)
Financial Strength	−0.009	−0.013	0.002
	(0.039)	(0.039)	(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: $Interest_{ij} = \alpha + \beta_1 ESG_{ij} + \beta_2 ln(Wage_{ij}) + \beta_3 NWA_{ij} + \beta_4 FS_{ij} + IndividualFE + e_{ij}$. 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 (see Table A21) or ESG certification (see Table A22). $ln(Wage)$ 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 Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE A7. ESG Effect on Interest – Re-Weighted

	Interest (1)	*Interest* (2)	*Interest* (3)
ESG	0.078**	0.079**	0.066**
	(0.036)	(0.035)	(0.027)
Ln(Wage)	0.951***	0.960***	1.054***
	(0.043)	(0.042)	(0.034)
Nonwage Amenities	0.059***	0.064***	0.064***
	(0.019)	(0.019)	(0.015)
Financial Strength	−0.083	−0.080	−0.060
	(0.058)	(0.057)	(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. ESG is an indicator variable equal to one if the job posting displays at least one ESG sentence (see Table A21) or ESG certification (see Table A22). $ln(Wage)$ 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 Table A19). Robust standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

TABLE A8. 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. ESG is an indicator variable equal to one if the job posting displays at least one ESG sentence (see Appendix Table A21) or ESG certification (see Appendix Table A22). $ln(Wage)$ 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 Appendix Table A19). *p<0.1; **p<0.05; ***p<0.01

TABLE A9. 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. The Survey Questionnaire

Introduction Page.

Q1. Would you like to continue?
Yes; No.

Filtering Questions.

Q2. What is the highest level of education you have completed?
Completed high school and/or pursuing an undergraduate degree; Completed technical school (or professional training course); Completed college (or more).

Q3. In which state would you like to work?
List with 26 states and the Federal District.

Q4. In which city would you like to work?
List with the main cities of the state chosen in the previous question.

Q5. In which locations are you also open to working? (*optional*)
List of cities not chosen in the previous question.

Q6. In which of the following professional areas would you like to work?
List of professional areas, see Appendix Tables A10, A11, and A12 for the professional areas based on level of education.

Introduction Page 1.

Introduction Page 2.

Job Posting Rating.

Demographic Questions.

Prompt. **Thanks for rating the job openings! There are only a few questions left for us to finish!**

Remember that it is important that you complete the questionnaire, so we can offer you the best job openings available.

Q7. What gender do you identify as?
Male; Female; Prefer not to answer.

Q8. What age group are you in?
16 to 19 years old; 20 to 24 years old; 25 to 29 years old; 30 to 34 years old; 35 to 39 years old; 40 to 44 years old; 45 to 49 years old; 50 to 54 years old; 55 to 59 years old; 60 years old or older.

Q9. What ethnicity do you identify as?
Indigenous; White; Asian; Black; Mixed; Other.

Q10. At the moment are you:
Employed, but looking for a new job; Employed, just seeing the job market; Unemployed and looking for a new job; Unemployed, but just seeing the job market; Looking for my first job; Other (specify):

Q11. What is your level of education?
Completed middle school; Incomplete high school; Completed high school; Incomplete college; Completed college; Completed masters; Completed doctorate.

Q12. How was your academic performance in high school? You were among:
Top 1%; Top 10%; Top 20%; Top 50%; Bottom 50%; I'm uncertain.

Q13. What is your monthly salary range at your current job (or at your last job if you are unemployed)?
Less than R$1,000; Between R$1,001 and R$1,500; Between R$1,501 and R$2,000; Between R$2,001 and R$2,500; Between R$2,501 and R$3,000; Between R$3,001 and R$4,000; Between R$4,001 and R$5,000; Between R$5,001 and R$10,000; Between R$10,001 and R$15,000; R$15,001+; Other (specify):

Q14. What is your political affiliation?
Liberal; Moderate; Conservative; Prefer not to answer.

Q15. Do you agree that you will get a better job after taking part in this survey?
Completely disagree; Disagree; Neither disagree nor agree; Agree; Completely agree.

Q16. When you think about working for companies with Environmental, Social and Governance (ESG) practices in place, what are the main considerations that come to mind?
Open-ended response.

Conclusion.

Q. Conclusion. **Thank you very much for completing our survey!**
We are always looking to improve our surveys and would love to hear from you. Feel free to make any comments, criticisms, etc. about your experience in the box below.

Appendix A.4. Job Posting Components

Table A10. Job Titles per Professional Area – Completed High School

Professional Area	Job Titles
Agriculture, Livestock and Veterinary	Livestock Worker; Junior Veterinary Assistant; Equipment Maintenance Assistant; Veterinary Consultant; Veterinary Assistant; Junior Agricultural Buyer; Store Advisor; Digital Agricultural Assistant; Lab Assistant; Livestock Handler; Seed Quality Tester; Sales Representative Junior Agronomist; Harvester; Agricultural Support Assistant; Agricultural Worker; Livestock Technician; Farm Manager; Scientific Advisor; Agronomist Assistant; Agricultural Foreman; Digital Agricultural Consultant; Junior Technical Sales Representative; Seed Genetics Specialist; Agricultural Extension Officer; Technical Manager; Agricultural Production Supervisor; Agricultural Manager; CLP Automation Supervisor
Architecture and Design	Designer; CAD Draftsman; Junior Designer; Architectural Designer Draftsman; Architectural Draftsman; Architect Assistant; Operational Inspector; Industrial Designer; Draftsman Assistant; Implementation Inspector
Business Administration	Claims Analyst; Tax Assistant; Administrative Assistant; Commercial Assistant; Warehouse Assistant; Receptionist; Security Inspector; Stockist; General Services Assistant; Office Assistant; Administrative Assistant; Human Resources Assistant
Commercial and Sales	Commercial Representative; Sales Representative; Sales Supervisor; Commercial Assistant; Store Supervisor; Sales Manager; Outside Sales Representative; Sales Assistant; Retail Sales Representative; Store Clerk; Telemarketing Sales Representative; Commercial Clerk; E-Commerce Assistant; Customer Service Analyst; Collection Assistant; After Sales Assistant; E-Commerce Relationship Assistant; Call Center Supervisor; Budget Sales Representative
Communications and Marketing	Web Designer; Video Editor; E-Commerce Assistant; Digital Marketing Assistant; Public Relations Assistant; Event Planner; Junior Marketing Analyst; Communications Assistant; Social Media Assistant; Event Assistant; Field Researcher
Engineering	Maintenance Mechanic; Mechanical Technician; Production Supervisor; Production Leader; Electronic Technician; Programmer; Industrial Production Assistant; Mechanical Maintenance Assistant; Mechanic Assistant; Engineering Assistant; Works Supervisor; Designer
Finance	Billing Clerk; Financial Assistant; Cashier; Financial Assistant; Administrative Assistant
Foreign Trade	Ship Inspector; Foreign Trade Assistant; Import Assistant; Export Assistant; Foreign Trade Assistant; Administrative Assistant
Hospitality and Tourism	Room Attendant; Receptionist; Reservations Attendant; Restaurant Server; Hotel Host; Host; Hotel Front Desk; Hospitality/Tourism Logistics Assistant; Reservations Assistant; Housekeeper; Event Assistant; Reception Supervisor; Reservations Assistant; Tour Guide; Hospitality and Events Administrative Assistant; Guest Services
Industrial	Installation Technician; Maintenance Technician; Foreman; Equipment Inspection Technician; Electromechanical Technician; Maintenance Mechanic; Production Assistant; Maintenance Technician; Inspection Assistant; Manufacturing Assistant; Automation Technician; Junior Production Operator; General Assistant; Industrial Maintenance Assistant
Information Technology	IT Solutions Analyst; Help Desk Support Analyst; IT Instructor; IT Support Technician; Systems Technician; User Support Technician; Typist; IT Coordinator; Project Assistant; External Technical Consultant; Database Administrator; Systems Engineer; Network Operator; Network Traffic Engineer
Legal	Office Assistant; Secretary; Junior Legal Assistant; Junior Tax Assistant; Junior Administrative Assistant; Legal Assistant; Corporate Tax Assistant; Corporate Assistant; Paralegal Assistant; Tax Assistant; Accounting Corporate Assistant; Junior Tax Analyst; Junior Attorney; Legal Administrative Assistant; Compliance Assistant
Social Services	Educational Advisor; Pastoral Assistant; Junior Educational Agent; Assistant Monitor; Child Caregiver; Social Project Assistant; Elderly Caregiver Junior Assistant; Junior Social Advisor; Social Responsibility Assistant; Social Educator; Project Coordinator; Sourcing Assistant; IMS Junior Assistant; Social Project Analyst
Technical	Electrical Assistant; Equipment Inspection Technician; Electromechanical Technical Assistant; Work Safety Technician Assistant; Technical Assistant; Junior Technical Sales Operations Analyst; Maintenance Coordinator; Production Supervisor; Operations Coordinator; Electrical Technician; Electromechanical Technician; Safety Technician
Telecommunications	Infrastructure Assistant; Support Assistant; Network Technician; Fiber Optic Technician; Junior Field Supervisor; Telecommunications Installer; Systems Assistant; Project Assistant; Operations Technician I; Junior Telecommunications Technician; Field Technician; Service Desk Assistant; Cabling Technician; Junior Technical Monitor; Junior IAT Technician; Junior Network Officer; Junior Infrastructure Analyst; Junior Network Analyst; Junior Telecommunications Analyst; Field Supervisor; Cloud Analyst; Junior Systems Analyst; Service Desk Coordinator; Project Analyst; Junior Operations Analyst; Network Systems Analyst I; IAT Technician I; Technical Support Supervisor; Cabling and Structured Process Analyst; Junior Network Analyst; Network Administrator; Infrastructure Consultant; Help Desk Supervisor; Senior Technician
Telemarketing	Telemarketer; Telesales Operator; Customer Service Operator; Service Assistant; E-Commerce Clerk; Social Clerk; Collection Assistant; Commercial Clerk; Public Clerk; Call Center Clerk; Collection Clerk; Customer Relationship Assistant Customer; Data Center Assistant Junior Customer Service Analyst; Telemarketing Supervisor; Customer Relationship Manager; Junior Relationship Analyst; Fulfillment Coordinator; Middle Office Junior Analyst; Junior Customer Service Analyst; Junior Customer Relationship Analyst; CDC Supervisor; SAP Manager; Full Bilingual Customer Service Agent; Back Office Analyst; Unit Customer Service Supervisor; Data Center Analyst
Transportation and Logistics	Delivery Driver; Transport Manager; Inventory Analyst; Project Consultant; Junior Buyer; Transport Analyst; Stockist; Warehouse Assistant; Distribution Assistant; Dispatch Assistant; Forklift Operator; Operations Assistant; Freight Analyst; Lecturer; Logistics Assistant; Tow Truck Driver; Parking Attendant; Transport Administrative Assistant; Loader Assistant; Junior Logistics Analyst; Warehouse Manager; Junior Strategy Analyst; Senior Logistics Analyst; Junior Operations Analyst; Purchasing Supervisor; Dispatch Supervisor; Supply Chain Analyst; Technology Administrative Assistant; Inventory Management Analyst; Inventory Analyst; Traffic Supervisor; Performance Analyst; Industrial Technical Buyer; Logistics Administrative Assistant

Notes: This table provides a list of job titles split by professional area shown to respondents that select "Completed High School" as their highest level of educational attainment. Respondents first select the professional area they would like to work in, and then select the job titles they would like to be shown. Respondents can select as many job titles within their chosen professional area as they like.

TABLE A11. Job Titles per Professional Area – Completed Technical School

Professional Area	Job Titles
Accounting	Accounting Technician; Accounting Assistant; Accounting Technical Support Analyst; Accounting Support Technician; Accounting Analyst; Tax Assistant
Automation, Audio and Video	Automation Technician; Audio Visual Technician; Audio and Lighting Technician; Radio Technician; Multimedia Audio Visual Technician
Chemistry	Chemistry Technician; Laboratory Assistant; Chemistry Technical Consultant; Chemical Technical Buyer
Construction	Building Technician; Building Maintenance Technician; Building Technician Assistant; Building Budget Technician; Pipeline and Track Integrity Technician
Electronics and Refrigeration	Electronics Technician; Electrical Technician; Electronics Technician; Electronics Technician Assistant; Electrical Maintenance Technician; Electrical Designer; Refrigeration Technician; Electronic Security Technician; Air Conditioning Supervisor
Information Technology and Systems Engineering	IT Technician; Systems Engineering Technician; Business Intelligence Specialist; Technical Support Analyst; Mobile Engineering Specialist
Mechanics, Electromechanics and Industrial Maintenance	Mechanical Technician; Electromechanical Technician; Industrial Maintenance Technician; Maintenance Mechanic; Industrial Mechanic; Plumber; Forklift Maintenance Technician; Preventive and Corrective Maintenance Technician; Instrumentation Technician
Networks and Telecommunications	Networks Technician; Telecommunications Technician; Assistant Telecommunications Technician; Fiber Optic Technician
Occupational Safety	Occupational Safety Technician; Occupational Safety Instructor; Training Instructor; Occupational Safety Technical Consultant

Notes: This table provides a list of job titles split by professional area shown to respondents that select "Completed Technical School" as their highest level of educational attainment. Respondents first select the professional area they would like to work in, and then select the job titles they would like to be shown. Respondents can select as many job titles within their chosen professional area as they like.

Table A12. Job Titles per Professional Area – Completed College

Professional Area	Job Titles
Agriculture, Livestock and Veterinary	Farm Manager; Agronomic Efficiency Assistant; Vet Assistant; Farm Material Maintenance Supervisor; Digital Agricultural Consultant; Agricultural Buyer; Seed Specialist; Senior Agronomist Sales Representative; Planning Supervisor; Vaccinator; Agricultural Partnership Manager; Manager Grain Sorter; Quality Analyst; Agricultural Monitor; Veterinarian; Agronomist; Market Development Manager; Agronomist; Breeding Manager; Biologist; Livestock Manager; Senior Digital Agricultural Analyst; Agricultural Manager; General Farm Manager; Soybean Production Manager; Market Development Agronomist; Agricultural Intelligence Specialist; Clinical Research Coordinator; Embryologist
Architecture and Design	Architect; Coordinating Architect; Architectural and Urban Planning Analyst; Designer; Planning and Budget Analyst; Architect Project Manager; Designer Designer; Junior Architect; Industrial Designer; Data Architect; Project Developer; Junior Executive Project Supervisor; Specifier Architect; Senior Architect; Software Architect; Project Coordinating Architect
Business Administration	Commercial Representative; Financial Manager; Cost Supervisor; Commercial Manager; Business Analyst; Human Resources Coordinator; Quality Control Analyst; Quality Control Manager; Human Resources Analyst; Business Consultant; Administrative Manager; Store Manager; Merchandising Specialist; Project Manager; Project Analyst; Tax Accounting Supervisor; Financial Consultant; Accounting Assistant; Purchasing Analyst; Logistics Analyst
Commercial and Sales	Commercial Manager; Store Manager; Commercial Analyst; Commercial Supervisor; Sales Manager; Technical Sales Representative; Sales Supervisor; Commercial Consultant; Sales Executive; Account Manager; Product Manager; Business Development Representative; Customer Service Analyst
Communications and Marketing	Advertising Service; Trade Marketing Specialist; Digital Marketing Manager, Communications and Marketing Coordinator; E-Commerce Specialist; E-Commerce Consultant; Video Editor; Corporate Communications Advisor; Digital Marketing Specialist; Institutional Relations Analyst; Marketing Analyst; Graphic Designer; Digital Media Analyst
Engineering	Maintenance Manager; Project Engineer; Operations Manager; Production Scheduler; Planning and Budget Engineer; Control and Automation Engineer; Facilities Engineer; Engineering Coordinator; Product Engineer; Civil Construction Engineer
Finance	Banking Analyst; Tax Analyst; Financial Analyst; Insurance Technician; Financial Coordinator; Accounting Analyst; Accountant; Credit Analyst; Tax Analyst; Pricing Analyst; Treasurer; Internal Auditor; Financial Assistant; Administrative Analyst
Foreign Trade	Foreign Trade Assistant; Import and Export Analyst; Foreign Trade Analyst; Supply Chain Analyst; Exchange Trader; Export Supervisor; External Commercial Coordinator; Customs Clearance Analyst; Contract Lawyer; Foreign Trade Coordinator
Hospitality and Tourism	Travel Analyst; Tour Consultant; Head of Reception; Restaurant and Hotel Manager; Event Supervisor; Lounge Manager; Housekeeper; Hospitality Coordinator; Lodging Supervisor; Concierge; Hotel Administrator; Bar/Restaurant Manager; Agent Consultant; Leisure Travel Consultant; Hotel Event Producer; Hotel General Manager; Hotel Superintendent; Full Exchange Sales Consultant; Public Relations Analyst
Industrial	Industrial Coordinator; Print Coordinator; Operations Manager; Production Scheduler; Process Analyst; Industrial Automation Technician; Maintenance Manager; Senior Process Analyst; Full Process Analyst; Operations Manager; Mechatronics Technician; Production Leader
Information Technology	IT Coordinator; External Technical Consultant; Data Analyst; Programmer; Computer Support Analyst; Data Communication Technician; Telecommunications Network Engineer; SAP ABAP Analyst; SAP Business Consultant; Information Technology Consultant; IT Architect; Programmer; Big Data Analyst; Web Developer; Data Analyst; Full Stack Developer
Legal	Legal Assistant; Corporate Tax Advisor; Corporate Assistant; Tax Assistant; Administrative Assistant; Corporate Accounting Assistant; Legal Administrative Assistant; Senior Tax Advisor; Legal Supervisor; Legal Advisor; Labor Lawyer; Tax Lawyer; Civil Litigation Lawyer; Bidding Analyst; Consultant; Legalization Supervisor External; Supervising Lawyer; Real Estate Lawyer
Social Services	Full Partner Educational Advisor; Senior Pastoral Assistant; Social Educator; Educational Agent; Care Supervisor; Child Care Supervisor; Social Project Agent Senior Social Assistant; Full Social Advisor; Senior Project Coordinator; Full Sourcing Assistant; SGI Assistant; Elementary School teacher; Educational Project Coordinator; Social Responsibility Analyst; Full Social Project Analyst
Technical	Maintenance Coordinator; Production Supervisor; PCP Coordinator; Electronics Technician; Electromechanical Technician; Occupational Safety Technician; Civil Technician; Senior Technical Sales Representative; Heavy Machinery Maintenance Technician; Production Planner; Operations Manager; Production Engineer; Engineering Engineer Processes; Factory Manager; Internal Controls Consultant; Industrial Designer
Telecommunications	Full Telecommunications Technician; Full Infrastructure Technician; Cloud Technician; Senior Network Technician; Systems Technician; Service Desk Coordinator; Technical Project Analyst; Operations Technician II; IAT Technician; Technical Support Supervisor; Cabling and Structured Processes; Network Administrator; Help Desk Supervisor; Expert Technician; Infrastructure Analyst; Senior Network Analyst; Network Engineer; Telecommunications Specialist; Technological Security Analyst; Full Stack Analyst; Full Systems Analyst; Senior Operations Analyst; Network Systems Analyst III; Full Project Manager; Full Network Analyst; Infrastructure Analyst - DevOps
Telemarketing	Full Service Analyst; Telemarketing Supervisor; Customer Relationship Manager; Junior Planning Analyst; CDC Supervisor; Relationship Analyst; Service Coordinator; Middle Office Analyst; Head of Customer Success; SAC Planning Consultant; SAP Manager; Billing Supervisor; Fulfillment Agent; Back Office Analyst; Full Customer Service Analyst; Full Planning Analyst; Senior CDC Supervisor; Billing Supervisor; Relationship Analyst; Producer Service Unit Manager; Business; Customer Service Project Manager; Full Middle Office Analyst; Full Customer Service Analyst; Full Investor Relations Analyst; Head of Customer Service; Senior SAP Manager
Transportation and Logistics	Junior Logistics Analyst; Purchasing Supervisor; Dispatch Supervisor; Transport Leader; Fleet Analyst; Full Buyer; Inventory Leader; Warehouse Manager; Transport Manager; Technology Administrative Assistant; Traffic Supervisor; Performance Analyst; Buyer Industrial Technician; Logistics Administrative Assistant; Supply Chain Director; Purchasing Manager; Planning Manager; Logistics Manager; Foreign Trade Coordinator; Production Planning and Control Coordinator; Logistics Controller; Senior Logistics Analyst; Logistics Distribution Center Manager; Operations Coordinator; Operational Excellence Supervisor; Operations Management Coordinator; Operations Manager; Reverse Logistics Manager; Fleet Manager

Notes: This table provides a list of job titles split by professional area shown to respondents that select "Completed College" as their highest level of educational attainment. Respondents first select the professional area they would like to work in, and then select the job titles they would like to be shown. Respondents can select as many job titles within their chosen professional area as they like.

Table A13. Geographic Location

States	City
Acre	Rio Branco
Alagoas	Maceió; Arapiraca
Amapá	Macapá; Santana
Amazonas	Manaus; Itacoatiara
Bahia	Salvador; Feira de Santana; Vitória da Conquista; Camaçari; Juazeiro; Itabuna; Lauro de Freitas; Teixeira de Freitas; Barreiras; Ilhéus; Jequié; Alagoinhas; Porto Seguro; Simões Filho; Paulo Afonso; Eunápolis; Santo Antônio de Jesus
Ceara	Fortaleza; Caucaia; Juazeiro do Norte; Maracanaú; Sobral; Crato; Itapipoca; Maranguape; Iguatu
Distrito Federal	Brasília
Espírito Santo	Serra; Vila Velha; Cariacica; Vitória; Cachoeiro de Itapemirim; Linhares; São Mateus; Guarapari; Colatina; Aracruz
Goiás	Goiânia; Aparecida de Goiânia; Anápolis; Rio Verde; Aguas Lindas de Goiás; Luziânia; Valparaíso de Goiás; Trindade; Formosa; Senador Canedo; Novo Gama; Catalão; Itumbiara; Jataí
Maranhão	São Luís; Imperatriz; São José de Ribamar; Timon; Caxias; Codó; Açailândia; Bacabal
Mato Grosso	Cuiabá; Várzea Grande; Rondonópolis; Sinop; Tangará da Serra
Mato Grosso do Sul	Campo Grande; Dourados; Três Lagoas; Corumbá
Minas Gerais	Belo Horizonte; Uberlândia; Contagem; Juiz de Fora; Betim; Montes Claros; Ribeirão das Neves; Uberaba; Governador Valadares; Ipatinga; Sete Lagoas; Divinópolis; Santa Luzia; Ibirité; Poços de Caldas; Patos de Minas; Pouso Alegre; Teófilo Otoni; Barbacena; Sabará; Varginha; Vespasiano; Conselheiro Lafaiete; Itabira; Araguari; Ubá; Passos; Coronel Fabriciano; Muriaé; Araxá; Nova Serrana; Ituiutaba
Pará	Belém; Ananindeua; Santarém; Marabá; Parauapebas; Castanhal; Abaetetuba; Cametá; Marituba; São Félix do Xingu; Bragança; Barcarena; Altamira; Tucuruí; Paragominas; Tailândia; Breves; Itaituba
Paraíba	João Pessoa; Campina Grande; Santa Rita; Patos
Paraná	Curitiba; Londrina; Maringá; Ponta Grossa; Cascavel; São José dos Pinhais; Foz do Iguaçu; Colombo; Guarapuava; Paranaguá; Araucária; Toledo; Apucarana; Campo Largo; Pinhais; Arapongas; Almirante Tamandaré; Piraquara; Umuarama; Cambé; Fazenda Rio Grande
Pernambuco	Recife; Jaboatão dos Guararapes; Olinda; Caruaru; Petrolina; Paulista; Cabo de Santo Agostinho; Camaragibe; Garanhuns; Vitória de Santo Antão; Igarassu; São Lourenço da Mata; Santa Cruz do Capibaribe; Abreu e Lima
Piauí	Teresina; Parnaíba
Rio de Janeiro	Rio de Janeiro; São Gonçalo; Duque de Caxias; Nova Iguaçu; Niterói; Belford Roxo; Campos dos Goytacazes; São João de Meriti; Petrópolis; Volta Redonda; Macaé; Magé; Itaboraí; Cabo Frio; Angra dos Reis; Nova Friburgo; Teresópolis; Barra Mansa; Mesquita; Maricá; Nilópolis; Rio das Ostras; Queimados; Itaguaí; Araruama; Resende; São Pedro da Aldeia; Japeri; Itaperuna; Barra do Piraí
Rio Grande do Norte	Natal; Mossoró; Parnamirim; São Gonçalo do Amarante
Rio Grande do Sul	Porto Alegre; Caxias do Sul; Canoas; Pelotas; Gravataí; Santa Maria; Viamão; Novo Hamburgo; São Leopoldo; Rio Grande; Alvorada; Passo Fundo; Sapucaia do Sul; Santa Cruz do Sul; Cachoeirinha; Uruguaiana; Bento Gonçalves; Bagé; Erechim
Rondônia	Porto Velho; Ji-Paraná; Ariquemes; Vilhena
Roraima	Boa Vista
Santa Catarina	Joinville; Florianópolis; Blumenau; São José; Chapecó; Itajaí; Criciúma; Jaraguá do Sul; Palhoça; Lages; Balneário Camboriú; Brusque; Tubarão
São Paulo	São Paulo; Guarulhos; Campinas; São Bernardo do Campo; São José dos Campos; Santo André; Ribeirão Preto; Osasco; Sorocaba; Mauá; São José do Rio Preto; Mogi das Cruzes; Santos; Diadema; Jundiaí; Piracicaba; Carapicuíba; Bauru; Itaquaquecetuba; São Vicente; Franca; Praia Grande; Guarujá; Taubaté; Limeira; Suzano; Taboão da Serra; Sumaré; Barueri; Embu das Artes; Indaiatuba; Cotia; São Carlos; Americana; Itapevi; Marília; Araraquara; Hortolândia; Jacareí; Presidente Prudente; Rio Claro; Araçatuba; Ferraz de Vasconcelos; Santa Bárbara d'Oeste; Itapecerica da Serra; Francisco Morato; Itu; Bragança Paulista; Pindamonhangaba; Itapetininga; São Caetano do Sul; Franco da Rocha; Mogi Guaçu; Jaú; Botucatu; Atibaia; Santana de Parnaíba; Araras; Valinhos; Cubatão; Sertãozinho; Jandira; Birigui; Ribeirão Pires; Caraguatatuba; Votorantim; Várzea Paulista; Itatiba; Tatuí; Barretos; Guaratinguetá; Catanduva; Salto; Poá; Ourinhos; Paulínia; Assis; Leme; Itanhaém; Caieiras; Mairiporã
Sergipe	Aracaju; Nossa Senhora do Socorro; Lagarto
Tocantins	Palmas; Araguaína

Notes: This table provides a list of all possible city location preferences selected by the respondent split by the 27 states in Brazil. Regardless of the state, we always display the following cities: São Paulo, Rio de Janeiro, Belo Horizonte, Fortaleza, Manaus, and Curitiba.

TABLE A14. Wages

	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
Completed High School	1,300	1,550	1,850	2,055	2,387	4,000
Completed Technical School	1,500	2,450	3,000	3,000	3,550	4,500
Completed College						
Agriculture, Livestock and Veterinary	2,000	2,400	2,800	3,755	4,562	12,500
Architecture and Design	2,000	2,400	2,800	3,755	4,562	12,500
Business Administration	2,000	2,400	2,725	3,639	4050	15,000
Commercial and Sales	2,000	2,450	2,900	3,920	4750	15,000
Communications and Marketing	2,000	2,387	2,700	3,520	3,850	15,000
Engineering	2,000	2,350	2,650	3,574	3,900	12,500
Finance	2,000	2,400	2,725	3,639	4,050	15,000
Foreign Trade	2,000	2,400	2,725	3,639	4,050	15,000
Hospitality and Tourism	2,000	2,288	2,550	3067	3,300	12,500
Industrial	2,000	2,300	2,600	3,222	3,462	12,500
Information Technology	2,000	2,600	3,350	4,737	6,112	15,000
Legal	2,000	2,400	2,800	3,492	3,900	15,000
Social Services	2,000	2,287	2,550	3,066	3,300	12,500
Technical	2,000	2,287	2,550	3,066	3,300	12,500
Telecommunications	2,000	2,350	2,650	3,574	3,900	12,500
Telemarketing	2,000	2,287	2,550	3,066	3,300	12,500
Transportation and Logistics	2,000	2,288	2,550	3,067	3,300	12,500

Notes: This table provides details on wage distribution by level of educational attainment. For each level of educational attainment, we report the minimum (Min.), the first quartile (1st Qu.), the median (Median), the mean (Mean), the third quartile (3rd Qu.), and the maximum (Max.). For level of educational attainment "Completed College," we report statistics for each professional area. The wage distribution was constructed based on the distribution of wages found on Catho's platform. We further refined the wage distribution by referencing the RAIS data and performing pilots.

TABLE A15. Industries

Categories	Industries
Agriculture, Livestock and Veterinary	Food; Chemistry; Beverages
Architecture and Design	Consulting; Real Estate Management and Development; Hotel, Restaurant, and Leisure; Transport and Infrastructure
Business Administration	Pharmaceuticals; Food, Paper and Forest Products; Consulting; Chemicals; Capital Markets and Investments; Banking and Insurance; Transport and Infrastructure; Beverages; Energy Equipment and Services; Real Estate Management and Development; Personal Services; Telecommunications; Metal and Mining; Automotive; Textiles and Apparel; Hotel, Restaurant, and Leisure
Commercial and Sales	Pharmaceuticals; Food, Paper and Forest Products; Consulting; Chemicals; Capital Markets and Investments; Banking and Insurance; Transport and Infrastructure; Beverages; Energy Equipment and Services; Real Estate Management and Development; Personal Services; Telecommunications; Metal and Mining; Automotive; Textiles and Apparel; Hotel, Restaurant, and Leisure
Communications and Marketing	Pharmaceuticals; Food, Paper and Forest Products; Consulting; Chemicals; Capital Markets and Investments; Banking and Insurance; Beverages; Personal Services; Telecommunications; Automotive; Textiles and Apparel; Hotel, Restaurant, and Leisure
Engineering	Transport and Infrastructure; Energy Equipment and Services; Real Estate Management and Development; Telecommunications
Foreign Trade	Pharmaceuticals; Food, Paper and Forest Products; Chemicals; Beverages; Energy Equipment and Services; Personal Services; Metal and Mining; Automotive; Textiles and Apparel.
Finance	Pharmaceuticals; Food, Paper and Forest Products; Consulting; Chemicals; Capital Markets and Investments; Banking and Insurance; Transport and Infrastructure; Beverages; Energy Equipment and Services; Real Estate Management and Development; Personal Services; Telecommunications; Metal and Mining; Automotive; Textiles and Apparel; Hotel, Restaurant, and Leisure
Hospitality and Tourism	Hotel, Restaurant, and Leisure; Real Estate Management and Development
Industrial	Pharmaceuticals; Food, Paper and Forest Products; Chemicals; Transport and Infrastructure; Beverages; Energy Equipment and Services; Personal Services; Metal and Mining; Automotive; Textiles and Apparel
Information Technology	Consulting; Capital Markets and Investments; Banking and Insurance; Energy Equipment and Services; Telecommunications; Automotive
Legal	Pharmaceuticals; Food, Paper and Forest Products; Consulting; Chemicals; Capital Markets and Investments; Banking and Insurance; Transport and Infrastructure; Beverages; Energy Equipment and Services; Real Estate Management and Development; Personal Services; Telecommunications; Metal and Mining; Automotive; Textiles and Apparel; Hotel, Restaurant, and Leisure
Social Services	Consulting; Healthcare
Technical	Pharmaceuticals; Food, Paper and Forest Products; Chemicals; Transport and Infrastructure; Beverages; Energy Equipment and Services; Personal Services; Metal and Mining; Automotive; Textiles and Apparel
Telecommunications	Capital Markets and Investments; Banking and Insurance; Energy Equipment and Services; Telecommunications
Telemarketing	Capital Markets and Investments; Banking and Insurance; Personal Services; Telecommunications
Transportation and Logistics	Pharmaceuticals; Food, Paper and Forest Products, Chemicals; Beverages; Energy Equipment and Services; Personal Services; Automotive; Textiles and Apparel

Notes: This table provides the range of industries by category. Column 1 presents the professional areas for respondents that select "Completed High School" and "Completed College" as their highest level of educational attainment. Upon selecting a professional area, we randomly select an industry for the synthetic job posting. Respondents that select "Completed Technical School" as their highest level of educational attainment are only shown industries within the "Technical" professional area.

TABLE A16. Firm Characteristics

Categories	Description
Establishment Year	*Unif*[1980,2012]
Number of Employees	*Unif*[500,20000] in intervals of 500.
Number of Countries	1 (50%), *Unif*[2,5] (50%)

Notes: This table provides details on firm characteristics. *Establishment Year* is drawn from a discrete uniform distribution ranging from 1980 to 2012. *Number of Employees* is drawn from a discrete uniform distribution ranging from 500 to 20,000 in intervals of 500. *Number of Countries* is the number of countries that the firm operates in. Firms can be domestic (i.e., operate only in Brazil) or multinational (i.e., operate in more than one country) with equal probability. We report the company descriptions of domestic (multinational) firms in Appendix Table A17 (A18).

TABLE A17. Introductory Sentence – Domestic Firm

Text
We are a [*sector*] company founded in [*year*] with more than [*number of employees*] employees across the country.
Founded in [*year*], our company operates in the [*sector*] sector. We have more than [*number of employees*] employees with operations across the country.
Since [*year*], our company has operated in the [*sector*] sector. Our [*number of employees*] employees are distributed across Brazil.
We operate in the [*sector*] sector from [*year*], with offices across Brazil, totaling [*number of employees*] employees.
Our company has operated across the country since [*year*]. We operate in the [*sector*] sector. Our company has more than [*number of employees*] employees.
We have more than [*number of employees*] employees with offices across Brazil. We have operated in the [*sector*] sector since [*year*].
Founded in [*year*], our company operates in almost every state in the country. We have [*number of employees*] employees who seek to transform the [*sector*] sector.
Founded in [*year*], we are a company in the [*sector*] sector with offices throughout Brazil and [*number of employees*] employees.
We are a company in the [*sector*] sector that was founded in [*year*]. We have more than [*number of employees*] employees to deliver excellent services.
Our company is a key player in the Brazilian market. With our [*number of employees*] employees, we have served as an exemplary company in the [*sector*] sector since [*year*].
Founded in [*year*], our company is one of the largest companies in the [*sector*] sector. We have [*number of employees*] employees across the country.
Our company has operated since [*year*] in the [*sector*] sector. Today, our more than [*number of employees*] employees are distributed across 20 states.
Our company operates in all states of the country. We employ the most qualified employees and already have more than [*number of employees*] employees representing our brand. Founded in [*year*], we are proud to be a key player in the country's [*sector*] sector.
Founded in [*year*], our company has offices in almost all major cities across the country. We are a company in the [*sector*] sector. Our team is made up of more than [*number of employees*] highly qualified employees.

Notes: This table provides the introductory sentences presented in the synthetic job postings of all domestic firms in Brazil. The sentences are randomly selected and each contain the following three variables: (1) *sector* indicates the given company's sector, (2) *year* indicates the establishment year of the given company, and (3) *number of employees* indicates the given firm's number of employees, as as described in Table A16.

Table A18. Introduction Sentence – Multinational Firm

Text
We are a [*sector*] company, founded in [*year*], with more than [*number of employees*] employees across more than [*number of countries*] countries.
Founded in [*year*], our company operates in the [*sector*] sector. We have more than [*number of employees*] employees and we are present in more than [*number of countries*] countries.
Since [*year*], our company has operated in the [*sector*] sector. Our [*number of employees*] employees are distributed among [*number of countries*] countries.
We have operated in the [*sector*] sector since [*year*], with offices across more than [*number of countries*] countries, totaling [*number of employees*] employees.
Our company has a presence in more than [*number of countries*] countries and has operated since [*year*] in the [*sector*] sector. Our company has more than [*number of employees*] employees.
We have over [*number of employees*] employees across [*number of countries*] countries. Our company has operated in the [*sector*] sector since [*year*].
Present in more than [*number of countries*] countries, our company has [*number of employees*] employees. Since [*year*], we have operated in the [*sector*] sector.
The company was founded in [*year*] with the aim of bringing efficient solutions to the market. Our more than [*number of employees*] employees collaborate daily to put us at the top. Across all the [*number of countries*] that we operate in, we are a key player in the [*sector*] sector.
We have been working in the [*sector*] sector since [*year*]. Since then, we have expanded our operations to [*number of countries*] countries and serve as an international player in the [*sector*] sector.
Our team has [*number of employees*] employees across [*number of countries*] countries. Since [*year*], we have sought excellence in the [*sector*] sector.
Our more than [*number of employees*] employees, represented across more than [*number of countries*] countries, have positively contributed to the [*sector*] sector since [*year*].
Founded in [*year*], we have more than [*number of employees*] employees. We are a company in the [*sector*] sector that generates jobs across [*number of countries*] countries.
The company was founded in [*year*]. Since then, our growth in the [*sector*] sector has expanded globally. Last year, we opened new offices and now operate in [*number of countries*] countries, totaling [*number of employees*] employees.
Founded in [*year*], our company operates in the [*sector*] sector. Together with our [*number of employees*] employees, we work efficiently in all [*number of countries*] countries where we operate.
Founded in [*year*], our company operates in the [*sector*] sector. As of the end of last month, we have [*number of employees*] employees across [*number of countries*] countries.
Founded in [*year*], our company is currently a leader in the [*sector*] sector. Our [*number of employees*] employees are distributed across [*number of countries*] countries.
We have [*number of employees*] employees and we are looking to grow our team. Present in [*number of countries*] countries, our company was founded in [*year*] with the objective of transforming the [*sector*] sector.
A [*sector*] company that is proud of each of its [*number of employees*] employees. We are present in [*number of countries*] countries and, since our company's creation ([*year*]) we have been striving for quality.
We are a company founded in [*year*] and we are present in [*number of countries*] in different countries. We have [*number of employees*] employees and we seek to be the best in the market and attract the best professionals who want to work in the [*sector*] sector.

Notes: This table provides the introductory sentences presented in the synthetic job postings of all multinational firms. The sentences are randomly selected and each contain the following four variables: (1) *sector* indicates the given company's sector, (2) *year* indicates the establishment year of the given company, (3) *number of employees* indicates the given firm's number of employees and (4) *number of countries* indicates the number of countries that the given company operates in, as as described in Table A16.

TABLE A19. Financial Strength

Categories	Text
Profit	Our company prides itself on its strong financial performance. Last year, we recorded one of the highest profits in our history and among all companies operating within our sector in the last 5 years.
Credit Rating	Our company has a long history of financial responsibility, which is shown by our exceptional credit rating of *var_credit_rating*. This proves publicly that we are able to stay up to date with financial commitments made to our creditors.
Growth Outlook	Our company is proud of its sustained and substantial growth over the past year. We are highly optimistic about our future growth prospects and have committed to 30% annual growth over the next three years.
Bankruptcy Probability	Our company has a low risk of bankruptcy, as demonstrated by our exceptional credit rating of *var_credit_rating*. This publicly proves that we are able to keep up with the financial commitments made to our creditors.

Notes: This table presents sentences that signal financial strength through four channels: profit, credit rating, growth outlook, and bankruptcy probability. We randomize the employer's credit rating, designated by *var_credit_rating*, in the credit rating and bankruptcy probability sentences. For the credit ratings we randomize across, see Table A20. Synthetic job postings have a 0.1 probability of including sentences on financial strength.

TABLE A20. Credit Ratings

Option 1	Option 2	Option 3
Fitch AAA	S&P AAA	Moody's Aaa

Notes: This table presents employer credit ratings. If a signal of financial strength is included in the synthetic job posting, and the financial strength sentence chosen falls under the credit rating or bankruptcy probability category, we randomly select one of the three credit rating options presented above. See A19 for a list of financial strength sentences.

Table A21. ESG Signaling Sentences

Categories	Text
Environmental	Advancing environmental sustainability and reducing climate change are top priorities for our company. Our firm takes active measures to reduce our carbon footprint, and we pride ourselves on achieving carbon neutrality and on publishing our CO2 emissions every year.
	We are one of the largest American companies with a permanent investment program in environmental protection. Not only do we recycle 80% of the resources used in our activities, but also we maintain collection points for materials, such as batteries, in the cities where we operate.
	We are always looking for ways to give back to the natural environment. Our company is proud to take responsibility for our land footprint by committing to permanently protect and restore more land than we use by 2025.
	As part of our commitment to a zero waste future, our firm has eliminated single-use plastics in all product packaging and offices.
	In order to save resources and increase the preservation of nature, we are fully transparent about our internal policies on energy consumption and environmental protection. Our company issues monthly public reports showing our energy consumption and other actions taken to preserve nature.
	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.
	We strive to promote increased transparency in our operations and environmental impact. Thus, we publish a detailed breakdown of our annual water usage on our website.
	We believe in the importance of better understanding how we impact our surrounding ecosystem. We publicly disclose a detailed annual report quantifying our land footprint and associated impact on surrounding areas.
Social	Whether related to gender, race, ethnicity, class, age, or accessibility, our firm is committed to improving representation through targeted recruitment, development, and retention of our employees. As part of our commitment, we aim to increase representation of women in senior roles to at least 50% in up to three years.
	We want our employees to be successful and reach their full potential. At our firm, we support employee growth and professional development through a dedicated mentorship program where new hires are matched with senior managers who provide guidance and training.
	We are dedicated to transparency and accountability in our diversity and inclusion efforts. To this end, our firm publishes an annual diversity, equity, and inclusion report on the demographics of our workforce.
Governance	Our company has an internal zero tolerance policy with executive political involvement. To this end, we ensure that our executives and directors are not formally associated with any political party or organization.
	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.
	Our company supports greater transparency and integrity in its government relationships. To this end, our activities with the government are subject to robust internal procedures, designed to ensure that our efforts are aligned both with our public policy priorities and with the law.
	Our company prides itself on conducting business with integrity and responsibility. We have a formal anonymous whistleblowing process in place and an internal code of conduct to identify and prevent misconduct.

Notes: This table presents ESG signaling sentences split by environmental, social, and governance categories. ESG signaling sentences are included in synthetic job postings with a probability of 0.2 for approximately 80% of the respondents and 0.5 for approximately 20% of the respondents. If included, we randomly select between one and two signaling sentences.

TABLE A22. ESG Certification

Categories	Text
B Corporation	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.
Great Place to Work	Our goal is to promote a fun, creative and inclusive work environment. Our company is proud to be certified by Great Place for Work™, the global authority on work culture and employee experience.
Green Business Bureau	We are proud to have been recognized as a "Green Business Bureau Certified" company by the Green Business Bureau, which distinguishes companies that demonstrate their commitment to sustainability. This certification reflects our commitment to prioritizing and implementing sustainable business practices.

Notes: This table presents descriptive sentences of ESG certifications. Certifications are randomized across B Corporation, Great Place to Work, and Green Business Bureau certifications. ESG certifications are included in synthetic job postings with a probability of 0.1. If included, only one certificate is selected per job posting.

TABLE A23. Auxiliary Sentences – Firm Description

Text
We strive for excellence and always aim to provide the best experience for our customers.
Our qualified team offers a suite of product and service solutions.
We are recognized for our innovation and for transforming our sector.
Our main objective is to bring solutions to the market that guarantee the satisfaction of our customers.
We are recognized for excellence in management and quality of services.
We value our employees' ability to guarantee quality at all stages of our internal operations.
Our goal is to guarantee customer satisfaction and deliver the best products with quality, innovation and efficiency.
We strive for constant growth and are passionate about innovation.
We strive to do our best every day and are proud to be credited as one of the largest companies in our sector.
Innovation is embedded in our culture and we constantly look for ideas to improve our operations.
As one of the top companies in our sector, success is in our DNA.
As leaders in innovation, we seek to improve the future for our employees.
We aim to make people's lives easier and strive to satisfy our customers.
We strive for growth, and our success has made our company a key player in the market.
We believe that there is always room to innovate new solutions to improve everyday life.

Notes: This table provides auxiliary sentences translated into English that provide additional structure to the synthetic job posting. These auxiliary sentences provide general information on the firm and its business. We include one auxiliary sentence in the job posting if the job posting has neither an ESG signaling sentence nor an ESG certification.

TABLE A24. On-The-Job Opportunities

Categories	On-The-Job Opportunities
Mentoring and Training	Global mentoring program; Mentorships; Training in project management, communication, and strategic business topics; Training for personal development and well-being; Technical training; Various training courses; Personalized mentoring program; Mentoring program.
Personal Development	Technical, cultural, and interpersonal skill improvement; Develop knowledge about organizational strategy; Lectures on experience and development; Lectures on career and business; Feedback for career development; Enhance business capabilities; Opportunity to perfect your skills; Career development plan; Network across various sectors to gain market insights and assess future trends; Technical knowledge development; Opportunity for growth and learning; Opportunity to apply skills learned in the classroom; Workshops for technical development; Access to an individualized development path; Constant practical learning through participation in challenging projects.
Company Culture	Free expression of opinions without fear; Team-building activities, Full immersion in our corporate culture; Rotational positions; Support from HR throughout your journey with our company; Working at a global company.

Notes: This table presents types of on-the-job opportunities split by *mentoring and training*, *personal development*, and *company culture* categories. Each synthetic job posting will display 2–5 randomly drawn on-the-job opportunities with probability 0.5.

TABLE A25. On-The-Job Activities – Completed High School (1/2)

Professional Area	On-The-Job Activities
Agriculture, Livestock and Veterinary	Implement measures to protect plant health; Help organize and plant seedlings; Help administer serums and vaccines; Assist in artificial insemination tasks; Perform slaughterhouse services; Tame and train animals; Conduct maintenance on used equipment; Prepare, bag, transport and distribute feed; Carry out pest control of cereals stored in silos and sacks; Help carry out experimental research projects; Grow, plant, sow and harvest crops using appropriate tools and equipment; Handle various equipment intended for agricultural production; Tend animal herds; Shear, clean, and groom animals for shows, instructional purposes or other reasons; Maintain the paddocks, fields, stables, cages and pens that house animals; Collect animals for milking.
Architecture and Design	Fill out project checklists; Record changes to original designs; Draft diagrams of project characteristics; Evaluate work progress; Conduct project meetings with architects and clients; Examine production-related documents and projects submitted and received from the commercial sector; Analyze problems presented and propose appropriate solutions; Assist managers in creating and presenting projects; Provide technical assistance and advice; Prepare budgets; Prepare documentation on materials; Manage payments to suppliers, prepare contracts, analyze projects and provide general support; Prepare designs according to customer preferences; Maintain potential and current customer relations and guarantee the quality of services provided; Design interior projects with varying complexity; Develop spreadsheets and presentations.
Business Administration	Provide support for operational needs; Communicate with customers; Various administrative tasks; Customer service; Prospect new customers; Organize documentation; Develop internal control spreadsheets; Perform administrative activities; Perform activities relevant to the sector; Provide general services requested by superiors; Support the operations department; Answer customer questions; Perform HR support tasks; Support the administrative manager; Manage email correspondences.
Commercial and Sales	Schedule meetings with potential partners; Visit establishments to present our products; Participate in weekly performance monitoring meetings; Active customer acquisition; Customer service; Sale of products and services; Draft budgets; Follow up on product delivery; Communicate via telephone; Manage purchases and evaluate necessary documentation; Provide support to the sales team; Register new customers; Perform telephone sales; Research competitors and market trends; Execute tasks.
Communications and Marketing	Create art for website and social networks; Develop marketing campaigns and management reports; Develop digital and printed communication materials; Answer customer questions regarding products and purchasing policies; Create templates and presentations; Strategic content planning for digital media such as Instagram, Facebook and TikTok; Create educational content for customers; Manage results, projects, trends and marketing strategies; Optimize content based on good SEO practices and strategies; Collaboratively explore different solutions to determine the most effective business strategy; Manage and coordinate e-commerce projects; Identify opportunities for new digital products, services, and other solutions; Solve strategic and creative problems involving the business; Generate engaging and interesting content that appeals to the public and drives engagement; Analyze customer purchasing behaviors.
Engineering	Perform duties to support employees, contractors, and service providers; Give technical guidelines to supervisors and other employees; Monitor projects and locations of teams and services; Carry out a review of completed services to ensure they meet quality standards; Carry out updates, monitor production plans, and collaborate on production programming; Actively contribute to the design and assembly of devices and equipment to enhance productivity and improve the quality of manufactured products; Prepare analysis of performance reports; Analyze and monitor indicators; Classify projects according to defined criteria to support workflow; Identify expected benefits of project implementation; Request and administer evaluations and tests; Carry out cost and material assessments; Set priorities for improvement and innovation; Plan tasks in accordance with specified requirements; Organize and oversee delivery schedules for materials and installations, taking into account printing, finishing, and installation times and coordinating with other concurrent projects.
Finance	Perform financial-support tasks; Make payments and manage the internal payments system; Register and update receipts; Issue invoices; Carry out closing tasks and calculate taxes; Issue payment slips; Make various payments; Issue reports; Prepare and update spreadsheets; Record accounting entries; Assist in tax planning; Assist in the preparation of trial balances; Register and monitor products and services; Update price list; Update entries in ERP software.
Foreign Trade	Compose import memos; Track load receipt; Perform import tasks; Analyze products received; Issue supply orders; Analyze and register documents; Launch accounts payable in the payments system; Manage relationships with carriers; Update spreadsheets; Assist in the preparation of weekly reports; Assess the accuracy of documentation received; Provide support to the administrative manager; Service customers; Execute freight-forwarding tasks; Receive customer orders.
Hospitality and Tourism	Receive and serve customers cordially; Provide accurate information about firm services; Coordinate clean-up activities; Ensure the quality of services provided; Handle reservations; Perform daily closing activities; Monitor services provided; Issue follow-up reports on the status of services; Fulfill customer orders; Purchase various materials; Close the cashier; File financial information daily; Replace materials when necessary; Answer customer complaints; Prepare customer satisfaction reports.

TABLE A25. On-The-Job Activities – Completed High School (2/2)

Professional Area	On-The-Job Activities
Industrial	Assist in manufacturing operations; Perform daily field inspections; Help operate machinery such as lathes, grinders, boring machines, milling machines, and others; Oversee and execute maintenance tasks; Oversee the daily schedules of technicians, ensuring efficient use of visit time; Conduct input surveys; Install replacements for defective parts.
Information Technology	Conduct data collection; Test systems; Monitor system performance; Inventory software and hardware; Guide support areas; Consult technical documentation; Consult alternative sources of information about the systems used; Provide third-party support; Install and configure software and hardware; Provide technical support for customers; Evaluate new technologies; Propose new methods and techniques; Organize forums on local networks; Provide training on company programs; Prepare reports of problems that may occur.
Legal	Write amendments and assignments; Arrange purchase and sale agreements, payments, exchanges, and the transfer of rights; Follow up on processes; Document organization; Prepare the documentation layout; Adjust the documentation to the established layout; Review documents; Classify and organize documents; Publish the documents in the system; Document meeting minutes; Assist in the preparation of contractual minutes; Request documents on demand; Assist in customer prospecting; Produce documents and reports for presentations; Prepare research on the registration status in public agencies; Regularize tax status and obtain certificates from relevant agencies; Conduct tasks related to updating and regularizing registration, including research, record-keeping, debt forgiveness, and updates from public agencies; Request certificates from public agencies; Carry out the elaboration of processes administrative offices with the departments public.
Social Services	Provide social services; Assist in reintegration activities; Attend to the needs of people associated with the role; Attend to the welfare of individuals for whom one is responsible; Document the weekly activities carried out; Welcome, assist, oversee, and instruct cohabitants on the rules and usage of the shared environment; Prepare and submit reports to the local government, in collaboration with social services and other duties relevant to the role; Participate in activities within the corporate social responsibility sector; Guide and accompany participants according to established programming and technical guidelines; Perform socio-educational activities; Monitor and keep all equipment working; Provide guidance and direction to individuals for whom one is responsible; Assist in the assembly and disassembly of mobile social units; Social approach with people.
Technical	Test, adjust and regulate machines; Assist with relevant projects in development; Produce project progress reports; Prepare documentation for presentation at weekly project meetings; Prepare budget control spreadsheets; Request funds and equipment necessary for the role; Maintain inventory control; Enter the necessary information to complete each service in the designated system; Register technical information; Solve problems and oversee solutions for projects; Conduct tasks for short-term and long-term technical activities per internal requirements.
Telecommunications	Visit data centers; Perform server and service backups; Monitor application releases for security updates; Maintain and update IT inventory; Maintain and configure corporate wireless internet; Service company employees; Provide remote and on-site support; Network configuration; Analyze servers; Install and configure Office package; Assess equipment performance; Assess operating systems; Provide telephone support; Register and route calls to relevant departments; Monitor and update calls from the company; Create service procedures; Install equipment; Install CCTV systems; Operate telecommunication equipment and systems; Perform measurement tests and repairs; Answer phones according to priority and impact criteria; Follow up and resolve incidents and alerts through the monitoring tool; Offer technical assistance and support to partner teams to ensure optimal performance; Be aware of team timelines; Check personal protective equipment and tools; Assemble and install cables; Operate test equipment; Conduct surveys for project preparation; Monitor 24-hour service team to analyze productivity and output quality; Service high-priority customers.
Telemarketing	Answer calls and emails from company representatives; Active telemarketing for prospecting customers; Schedule inspections with customers; Archive and file relevant documents; Manage inventory; Answer inquiries through the company website; Provide information to customers; Evaluate requests for office visits; Provide solutions to issues presented by customers; Record service information; Update company website with photos and videos; Participate in e-commerce operations with an emphasis on customer service, utilizing tools such as WhatsApp, phone, and email; Attend to the reception desk; Certify service providers and suppliers as needed; Visit customers regularly to monitor the use of services.
Transportation and Logistics	Participate in the distribution of supplies; Organize stock and distribution; Monitor operational performance indicators; Prepare control sheets; Assist in the planning of goods storage; Separate, send and receive materials; Assess and plan deadlines and priorities; Issue invoices; Participate in the development of studies of logistics alternatives; Prepare a monthly report of the activities carried out in the month; Request necessary materials; Receive and serve customers; Provide requested information to customers; Create spreadsheets with indicators to be used in presentations by management; Assist with the organization of the distribution center.

Notes: This table provides types of on-the-job activities split by professional area shown to respondents that select "Completed High School" as their highest level of educational attainment. Each synthetic job posting will display 3–5 randomly drawn on-the-job activities with probability 0.6.

TABLE A26. On-The-Job Activities – Completed Technical School

Professional Area	On-The-Job Activities
Accounting	Customer service; Launch invoices; Calculate taxes and prepare financial documents; Perform accounting entries and reconciliations; Provide accounting audit advice; Prepare accounting documents; Bank reconciliation; Prepare payroll; Perform office tasks; Prepare expenses; Help prepare trial balances and balance sheets; Close the balance sheet; Provide technical advice; Review trial balances and management reports; Analyze financial statements.
Automation, Audio and Video	Assemble, supervise and review panel assemblies; Provide remote and in-person support to customers; Supervise the technological space; Perform preventive maintenance activities; Monitor and control technological resources; Configure and install hardware and software; Follow up with assembly team on mechanical completion; Execution of tests and maintenance procedures; Install projection screens and audio systems for corporate rooms; Customer service; Install, cabling and infrastructure for automation; Install speakers; Install receivers; Work with audio and video equipment; Provide technical services, equipment installation and sound testing.
Chemistry	Sample collection and analysis; Process control; Quality control; Industrial process control; Work in accordance with safety standards; Follow routine procedures; Keep the work area clean and organized; Preparation, separation and preservation of containers; Planning and execution of projects; Prepare solutions and measurement equipment; Material characterization analysis; Work in the laboratory for the development of new products; Customer service; Prepare documentation for audits; Perform physical-chemical tests.
Construction	Oversee new construction and residential and commercial renovation projects; Technical visits; Budgeting; Building maintenance; Manage internal and contracted employees; Prepare management reports; Review projects; Manage schedules; Issue and monitor purchase orders; Support and plan tasks; Monitor inventories and assess needs for replacement; Assist the construction team; Guide construction workers; Inspect the service performed; Develop project documents.
Electronics and Refrigeration	Repair and install electronic devices; Develop electronic circuit devices; Preventive and corrective maintenance of equipment; Identify the causes of device defects; Replace electronic components; Install electronic security systems; Develop and execute electrical projects; Contract labor; Configure audio, video, automation and network equipment; Develop grounding system projects; Maintenance of electric motors; Perform technical assistance activities; Perform equipment programming; Test equipment; Customer service; Maintenance repair of electronic systems; Prepare technical drawings; Carry out technical visits; Develop reports; Install refrigeration and ventilation equipment; Determine materials and accessories needed, and install equipment; Carry out various tests on the systems.
Information Technology and Systems Engineering	Perform repairs; Verify network protection; Provide technical support to users; Perform IT activities; Install and maintenance on computers and notebooks; Troubleshoot internal systems; Manage functional networks; Manage Production Part Approval Process (PPAP); Assist in software development; Ensure compliance with information security guidelines; Identify and correct problems with electronic devices; Develop websites; Implement computerized systems; Configure corporate VPN access; Provide audiovisual support.
Mechanics, Electromechanics and Industrial Maintenance	Perform technical maintenance; Prepare drawings of mechanical projects; Provide exceptional customer service; Maintain and calibrate equipment; Conduct and oversee inspection and maintenance services; Develop and test equipment and machines; Evaluate operating conditions in equipment installation; Preventive maintenance and corrective measures; Provide market price quotations; Select and install electronic and mechanical materials and components; Prepare technical reports; Assembly of mechanical devices; Assembly of electrical infrastructure; Install and assembly of equipment; Replace electrical parts and components; Install electric motors; General building maintenance; Document repair actions; Implement and monitor small automation upgrades on existing equipment.
Networks and Telecommunications	Implement computer systems; Carry out technical visits; Report procedures; Work in the telecommunications operational area; Install cabling, ducts and piping for the data network; Carry out repairs, exchanges and maintenance; Install devices; Assist and troubleshoot customer service issues for staff; Carry out preventive maintenance; Participate in the preparation of telecommunication projects; Diagnose and troubleshoot issues with telephone systems and infrastructure; Technically verify processes and services; Perform telecommunications equipment integration; Test routers; Preventive and corrective maintenance and programming in PABX.
Occupational Safety	Perform risk management; Inspect locations; Equipment installations; Monitor works in order to identify risk factors; Accompany casualties with the emergency room; Promote safety training at work; Develop accident prevention programs; Guide activities developed by contracted companies regarding health and safety aspects; Integrate negotiation processes; Promote vaccination campaigns; Record the occurrence of accidents; Participate in the adoption of technologies and work processes; Assist in the implementation of PCMSO, PCMAT, PPRA, and LTCAT health and safety programs; Supervise prevention plans of environmental accidents; Guide the Internal Commission for Accident Prevention (CIPA); Implement the necessary safety signs.

Notes: This table provides types of on-the-job activities split by professional area shown to respondents that select "Completed Technical School" as their highest level of educational attainment. Each synthetic job posting will display 3–5 randomly drawn on-the-job activities with probability 0.6.

TABLE A27. On-The-Job Activities – Completed College (1/2)

Professional Area	On-The-Job Activities
Agriculture, Livestock and Veterinary	Plan rational and scientific experiments related to the company's agricultural projects; Conduct target audience research; Manage herd breeding tasks; Ensure the health and well-being of animals; Contribute to the genetic improvement of animals; Supervise sustainability projects, such as reducing water consumption and proper waste treatment; Manage the processing of renewable biomass; Monitor pests; Develop fertilization methods; Conducting regular animal health check-ups; Propose solutions to problems; Manage the execution of tasks; Implement objectives and actions for the area; Participate in meetings with the board of directors; Plan and negotiate large contracts.
Architecture and Design	Design visual materials for digital platforms, including presentations, logos, branding, and digital advertising graphics; Create and finalize designs for digital media, such as logos, visual identities, and advertising materials, by reviewing content and preparing files for production; Design and create furniture for display promotions in retail spaces, including stores and kiosks; Prepare project drawings, define their characteristics and determine the stages of execution and other technical elements; Monitor project progress, conduct analyses to prepare results; Create technical drawings for the design and implementation of augmented reality training programs; Operate printers, monitor and test prototypes; Develop technical solutions in order to improve the description of existing products; Develop quantitative projects; Assist in the development of projects for property regularization, obtaining operating permits, renovation and execution of construction works; Create and maintain a list of materials needed for the project, selecting appropriate specifications and standards based on guidelines provided; Supervise the assembly of prototypes, evaluate the performance of each component and evaluate the final product; Lead the design process for projects by consolidating information from feasibility studies and creating detailed project plans.; Develop and design interior spaces, including residential, commercial and office spaces, create detailed plans, select finishes and furnishings, and manage budget and purchasing for the project.
Business Administration	Routine administrative activities; Assist in administrative processes; Prepare spreadsheets; Prepare management reports; Manage team; Create reports and performance indicators; Prospect new customers; Coordinate administrative activities; Follow up on HR activities; Participate in planning meetings; Plan, execute and optimize sector tasks; Participate in the implementation of corporate projects; Plan training; Validate project pricing; Analyze reports.
Commercial and Sales	Present our products and services to large customers; Manage sales team; Responsible for the commercial department; Lead the expansion process; Define performance metrics; Coordinate commercial events; Create, structure and improve KPIs to manage the operations and performance; Prepare the cost structure and price formation; Establish goals; Solve conflicts; Conduct feasibility studies; Delegate sector activities; Plan and carry out training; Develop and implement sales plans; Monitor the sales team.
Communications and Marketing	Develop analytical panels to generate visibility and identify solutions; Develop and monitor marketing campaigns through all channels (email, SMS, portal, app, etc.); Manage maintenance of digital platforms, ensuring content is always up-to-date and consistent across platforms; Implement new tools that enhance the customer experience (such as online chat, BOT, etc.); Coordinate all aspects of content, from agenda definition, briefing for writers, project management, editing, and platform publishing; Develop sponsored links ad strategies, especially in Google Ads, making necessary adjustments to campaigns to improve performance and monitor metrics through web analytics tools; Measure and improve the effectiveness of digital marketing campaigns and internal marketing efforts, ensuring brand appeal and reinforcing the dissemination of our brand and culture; Collaborate with the team to develop and implement efficient solutions and strategies in various areas; Develop sales methods and results; Assist sales in creating new materials and strategies, and track performance by creating monthly reports on marketing results; Ensure a seamless customer experience on the brand's proprietary platforms, and create graphic materials for point-of-sale, magazines, promotional campaigns, digital media, and training materials; Design and execute social media, e-commerce, and paid media campaigns; Coordinate and participate in events, meetings, and committees on behalf of the company to represent the company's interests and objectives; Maintain relationships with service providers, industries, and suppliers to present new projects, proposals and businesses.
Engineering	Plan, organize, execute, and oversee projects in the field of civil construction; Conduct investigations and technical surveys; Generate various reports to provide and forward information and data related to its area of activity to the direct supervisor; Manage areas of the company and departments in accordance with pre-established standards and procedures; Provide and participate in training programs within their area of expertise; Prepare reports and technical reports in their area of expertise; Implement management of preventive, corrective, predictive, and autonomous maintenance; Perform and monitor the execution of product validation tests; Interpret technical standards relevant to the product, its maintenance, clarify doubts in its application, and train multipliers for understanding and implementation; Implement continuous improvement efforts to optimize processes and resources; Analyze and design systems and highly complex applications, determining graphical interface, ergonomic navigation criteria, database structure, and program coding; Choose work resources, such as system development methodologies, programming languages, and development tools; Monitor the execution of services using performance indicators, assess performance and make decisions; Responsible for the development of new components and systems, from initial draft to launch, ensuring project requirements following engineering standards, procedures and techniques; Perform review of technical drawings; Carry out and supervise production plans, collaborate with production programming and control, and determine productivity index.
Finance	Apply statistical and procedural methods that contribute to the detection of fraud; Support the structuring of complex financial models; Financial analysis; Identify investment strategies; Prepare cash flow; Prepare billing projections; Carry out tax planning; Analyze options for new investments; Prepare financial statements; Prepare daily balance sheets; Manage the accounting department; Accounting and tax analysis; Prepare and review management reports; Financial modeling; Monitor changes in legislation.
Foreign Trade	International freight contracting; Monitor and control import processes; Monitor customs clearance; Conduct meetings in English; Follow up regularly to ensure deliveries within the stipulated deadlines; Evaluate the feasibility of import costs; Quoting international freight; Plan import activities and export; Analyze international market trends; Negotiate the best commercial conditions; Perform monthly control of indicators; Manage the import and export process; Ensure compliance with current legislation in the countries in which we operate; Evaluate the necessary framework according to Brazilian legislation; Define pricing and supply policies.

Table A27. On-The-Job Activities – Completed College (2/2)

Professional Area	On-The-Job Activities
Hospitality and Tourism	Establish the best rate policy according to supply and demand; Manage expenses; Perform corrective actions when budgets are not met; Monitor and manage the routine and compliance of all departments; Take care of marketing and advertising actions; Assist in hiring employees; Supervising and guiding the work of managers in each area; Managing contact with suppliers; Manage customer satisfaction; Cooperate with customers to determine their needs and provide advice; Use promotion techniques and prepare promotional materials for services; Participate in travel seminars to stay up to date with tourism trends; Enter data into our software and maintain client files; Maintain statistical and financial records; Assist in hiring and firing employees.
Industrial	Implement maintenance management; Contribute to improvement measures and investigate customer complaints and internal issues; Adopt corrective action for issues identified internally and externally, prioritizing customer complaints; Monitor risk-prone equipment, processes and operations; Collaborate with internal teams to assess risks and opportunities; Monitor productivity, quality, and people-management indicators; Conduct daily evaluations of the quality of work, providing positive and constructive feedback to employees; Develop and manage sector indicators; Inspect the company's facilities; Manage and oversee the team performing maintenance tasks, assembling and installing machines, components, and equipment; Create technical drawings to support projects; Monitor the quality of services using performance indicators, evaluate performance and make decisions; Perform critical analysis of processes to introduce improvements to management; Balance the needs of customers, employees, shareholders and suppliers; Ensure compliance with environmental protection regulations, and promote adherence to standards of hygiene and safety in the workplace.
Information Technology	Manage IT strategic processes; Plan and manage IT processes; Ensure that IT supports business processes; Manage the IT team, defining goals and deadlines; Prioritize and support IT projects; Define IT governance measures; Ensure mechanisms and tools for continuity of IT services in case of emergencies (e.g., a cybersecurity attack or system crash); Monitor and present IT indicators; Ensure information security; Request and manage IT resources; Develop programs in demand; Develop user documentation of company programs; Refine the architecture of existing systems; Generate new versions of company programs; Create unit tests.
Legal	Participate in projects to analyze legal and juridical regulations; Prepare opinions and tax reviews; Serve national and international clients; Direct field work and keep leadership updated on the development of projects; Participate in technical discussions to strengthen the company's stance on controversial matters; Support leadership in identifying new business opportunities; Support the sales team in prospecting meetings; Monitor the sector's internal processes; Draft service contracts; Plan, control and direct activities from the legal sector; Monitor notary processes; Distribution of processes; Draft contracts; Close contracts; Attend hearings.
Social Services	Responsible for educational assistance and guidance; Plan and execute workshops and social projects; Create plans for collaborating with relevant social service organizations; Responsible for actions that promote referral and reintegration into the labor market; Family monitoring; Preparation of reports and monitoring of communities in socially vulnerable situations; Develop and implement socio-educational activities, promoting recreational activities, stimulating community participation and ensuring proper use of equipment and materials; Mediate conflicts; Set priorities; Participate in internal and external audit processes, contribute to information availability or collection and recording of evidence; Act with integrity; Plan, prepare and manage educational projects; Manage deadlines and create schedules.
Technical	Consult on the implementation, management, and ongoing improvement of internal control processes; Develop projects; Provide technical support by monitoring project contracting processes; Prepare presentations on departmental projects; Manage the planning and execution of tasks related to operational activities, including development, support, and additional activities; Perform corrective and preventive maintenance; Develop processes and procedures for all technical activities; Develop documentation to support all field activities; Develop metrics and customer service activities; Work on medium and long-term projects according to internal demand; Support the commercial team in the execution of proposals, presentations and training.
Telecommunications	Monitor tasks on Windows servers; Support virtual servers; Support DLP (Data Loss Prevention) solutions; Map sensitive business data; Create DLP (Data Loss Prevention) control policies for mapped data; Ensure full operation of the infrastructure of company solutions; Create and review environmental policies, extract reports following the company's pre-established guidelines and best practices; Communicate with international support via email or conference call; Be aware of data security protocols; Responsible for supporting and maintaining physical and cloud servers, the company's network and communication infrastructure; Configure web servers with HTTPS; Manage system functions and take action to resolve issues by suggesting efficient solutions to restore service; Identify risks and implement solutions to secure technical environments and devices; Implement, support and monitor server resources, data centers, network assets and IT services; Manage computing environments and build architecture technology for information security; Analyze systems, identify vulnerabilities, map risks and implement solutions for the security of technical environments and devices; Prepare documentation on related operational procedures; Monitor delivery and quality; Creation and delivery of KPIs.
Telemarketing	Manage company representatives; Serve the customer reception department; Handle all company documents; Collect and manage necessary documents for customer purchase and processing; Propose products; Research and suggest the most commonly used technical terms in the market; Implement proposals in a service area by incorporating the relevant technical indicators for central operations; Develop strategies and create a portfolio for customers; Track and evaluate performance indicators for the region; Conduct market research and identify opportunities for expansion in the region; Prospect customers; Monitor revenue indicators; Analyze internal processes and implement solutions to improve productivity and quality; After-sales management; Organize the establishment of a call center for proactive customer prospecting; Carry out strategic planning to meet customer demands; Provide training on solutions and respond to customer inquiries as needed.
Transportation and Logistics	Plan all the company's logistics, from transport to the acquisition and storage of products; Manage material acquisition to meet company needs, considering factors such as quality, cost and service; Develop and control all stages of the production cycle, with a focus on financials; Assess and manage transportation resources, with the goal of maintaining efficiency; Coordinate the company's import and export team; Monitor production-related tasks; Prepare, plan and analyze the company's costs; Coordinate the execution of logistics plans; Choose new technologies for implementation; Make final hiring and employment decisions; Evaluate employee productivity; Coordinate programs to improve work efficiency; Participate in weekly meetings with management; Lead services provided to customers; Pricing services and projects.

Notes: This table provides types of on-the-job activities split by professional area shown to respondents that select "Completed College" as their highest level of educational attainment. Each synthetic job posting will display 3–5 randomly drawn on-the-job activities with probability 0.6.

Table A28. On-The-Job Activities – Sentences

Professional Area	On-The-Job Activities
Agriculture, Livestock and Veterinary	We seek a candidate who excels in a collaborative workplace, utilizing technology to bridge the gap between human progress and the natural world's performance, with knowledge of current agriculture and animal husbandry practices; In this role, you will use your knowledge and technique in order to contribute with solutions to improve productivity in the field.
Architecture and Design	We are looking for a multifaceted candidate with phenomenal design sensibilities who is highly imaginative and embraces experimentation. customers and have a passion for bringing ideas to life; In this role, you will explore your knowledge and creativity alongside a team passionate about new ideas and constant innovation, contributing to the consolidation of our company's image and reputation.
Business Administration	In this role, you will support our company's day-to-day operations and partner with corporate and regional teams to help create reliable, scalable, and sustainable solutions; In this role, you will play a critical role on a strong and growing team within our company and leverage your team's strengths to support company initiatives and advance your career in a dynamic, fast-paced environment; In this position, you will join a team that creates value by utilizing best business practices to formulate and execute solutions to various challenges.
Commercial and Sales	We are looking for a passionate candidate to represent our company and its external partners through developing and implementing the sales team's day-to-day strategy and activities; Our company is looking for candidates to help us provide exceptional customer service; In this role, you will represent our company in customer interactions, providing services focused on understanding their needs and solving their problems.
Communications and Marketing	In this role, you will partner with our in-house communications and marketing departments to help develop and execute turnkey campaigns that address our target customers and their different personalities, pain points and needs; We are looking for a creative communications lead, dynamic and effective that can help implement complex and high-impact marketing programs and campaigns that change the consumer's mindset and drive action; Our ideal candidate is passionate about marketing strategies that aim to convey the values and proposals of our company, positively impacting our competitiveness through clear and honest communication.
Engineering	The ideal candidate for this role has a strong technical background and enjoys working on a team dedicated to the smooth running of our business. partnership with our engineering department to help coordinate all relevant technical and commercial initiatives; In our company, you will be part of a team of engineers focused on finding solutions for the implementation of systems aimed at improving productivity in order to offer our services to an ever-growing customer base.
Finance	Our company is looking for a qualified candidate to work alongside our finance team and perform a variety of accounting and finance tasks; We are looking for analytical professionals with a broad strategic vision to join our financial team and implement solutions.
Foreign Trade	In this role, you will be responsible for helping to ensure compliance with import and export rules and regulations, as well as helping to facilitate the timely release of goods through customs and related government agencies. We are looking for a candidate with outstanding organizational skills who can act as a liaison between factories, forwarders, brokers, and customers; Our ideal candidate is passionate about the challenges posed by e-commerce in an increasingly dynamic and complex world and is capable of understanding scenarios and the determining factors for our competitiveness.
Hospitality and Tourism	We are looking for a warm, welcoming, and articulate candidate to ensure that each client's experience is relaxing and effortless. If you love meeting new people, providing services and helping to build a great brand, we'd love to talk; In this role, you'll have the opportunity to work with a team dedicated to providing the best experience for our customers and contributing to solutions and services that enable that they get the most out of the time they invest in you.
Industrial	We are looking for a candidate to help manage production schedules and coordinate services to maximize productivity; In this role, you will help maintain a clean and orderly production environment and drive efficiency; Our ideal candidate is an enthusiast of search for organization and constant improvement of the production environment, ensuring the fulfillment of goals and the best safety practices.
Information Technology	We are looking for a talented IT professional with a strong technical background to help with our company's systems integrations and improve our customer-facing applications; In your role, you will help support our day-to-day IT operations and provide timely resolution to service requests and issues; Our ideal candidate is passionate about technology solutions and has the knowledge to implement solutions that improve the efficiency of internal systems and the quality of the products offered to our customers.
Legal	In this role, you will work closely with the legal and compliance team to provide legal and strategic support across the business; Join our team in developing more effective ways to ensure regulatory tasks and projects are completed with high level of efficiency and optimism to achieve the objectives of the entire company; We are looking for dedicated professionals who can use their technical knowledge in favor of creating legal protocols that reduce costs and increase the predictability of the impact of external changes on production of our company.
Social Services	In this role, you will be responsible for providing, coordinating and ensuring comprehensive care for patients; We are looking for a candidate to provide individual or group counseling services to help individuals and their families achieve effective personal development and adjustment; Our ideal candidate is someone who understands the complexities of human relationships and is passionate about listening, advising and proposing solutions for patients, always focused on ethics and improving individual well-being.
Technical	We are looking for a candidate with a strong ability to think creatively and solve technical challenges and limitations, as well as demonstrate excellent communication skills at all levels, both in the technical and creative dimensions; In this role, you will be responsible for providing technical support to users and internal customers of the company; In this role, you will be part of a team focused on the creation and application of technical solutions aimed at the efficiency and robustness of our production system.
Telecommunications	If you're ready to hone your customer service skills while gaining professional knowledge in the telecommunications industry, our team looks forward to working with you! conversation with potential customers in a transparent manner; In our company, you will work with a team specialized in creating and implementing innovations in telecommunication that increase the performance of our activities and contact with customers.
Telemarketing	A strong candidate will demonstrate excellent communication and customer service skills; Individuals in this role are responsible for placing business to business (B2B) phone calls to clients and scheduling meetings for outside sales teams; In this role, you will work seamlessly with the customer solutions team, from the initial service to the final contact with the proposals and solutions for your demand.
Transportation and Logistics	This position will serve as a link between carriers and our distribution network, ensuring efficient movement of inbound and outbound supply and the consistent implementation of our operational excellence; We are looking for professionals who do their best to develop and improve our supply area.

Notes: This table provides sentences describing on-the-job activities split by professional area. Each synthetic job posting will display one randomly drawn sentence describing on-the-job activities with probability 0.5.

TABLE A29. Workload Requirements

Workload Requirements
Monday to Friday from 8am to 6pm
Monday to Friday from 9am to 7pm
Monday to Friday from 10am to 8pm
Monday to Friday from 10am to 6pm
Monday to Friday from 9am to 5pm
Monday to Friday from 1pm to 9pm
40 hours a week, 5 days a week
Tuesday to Saturday from 10am to 6pm
Tuesday to Saturday from 9am to 5pm

Notes: This table provides types of estimated workload requirements in a given synthetic job posting. Each job posting displays one of the workload options with probability 0.7.

TABLE A30. Work-from-Home

Work-from-Home
Hybrid Work Model - You choose how many days of the week you want to work from the office. Work model: 3 x 2 (3 days at home and 2 days at the office). Work model: 2 x 3 (2 days at home and 3 days at the office). In-person and remote work model (hybrid).

Notes: This table presents work-from-home arrangements. One work-from-home arrangement is randomly drawn from this list and included in the job posting with probability 0.3 for respondents that select "Completed High School" or "Completed College" as their highest level of educational attainment.

TABLE A31. Auxiliary Sentences – Job Opening

Text
Our company's recruitment process seeks to hire qualified professionals to join our team.
Our company is seeking innovative professionals to fill our open positions.
We are seeking top-notch professionals to fill our open positions.
Our hiring process targets professionals for our office in Brazil.
We seek to attract outstanding professionals.

Notes: This table provides auxiliary sentences translated into English that provide additional structure to the synthetic job posting. These auxiliary sentences provide information on the company's job opening and hiring process. One auxiliary sentence is always included in the job postings and is randomly selected.

TABLE A32. Job Prerequisites

Categories	Job Prerequisites
Work-Related Prerequisites	Make a real impact in the business world; Align actions and behaviors with the company's values and mission; Take initiative; Collaborative; Independent; Proactive and eager to work; Collaborative and flexible; Can-do attitude; Eager to learn and contribute to company culture; Team player; Dedication to completing projects successfully
Personal Attributes	Desire for real challenges; Energetic; Willingness to make it happen; Humble and ethical; Curious and inquisitive

Notes: This table presents job prerequisites split by work-related characteristics and respondents' personal attributes. Each synthetic job posting will display 2–3 randomly drawn job prerequisites with probability 0.5, with prerequisites drawn from *Work-Related Prerequisites* and *Personal Attributes* each with probability 0.5.

TABLE A33. Required Majors – Completed College

Professional Area	Required Majors
Agriculture, Livestock and Veterinary	Business Administration; Agricultural Science; Agricultural Engineering; Food Engineering; Fisheries Engineering; Forest Engineering; Veterinary Engineering
Architecture and Design	Architecture and Urbanism; Visual Arts; Cinema and Audiovisual; Social Communication; Design; Advertising
Business Administration	Business Administration; Actuarial Sciences; Accounting; Economics; Production Engineering; Statistics; Mathematics; Psychology; Advertising and Marketing
Commercial and Sales	Business Administration; Actuarial Sciences; Accounting; Economics; Production Engineering; Statistics; Mathematics; Advertising and Marketing
Communications and Marketing	Business Administration; Visual Arts; Social Sciences; Cinema and Audiovisual; Media; Design; Journalism; Language Arts; Advertising; Radio; TV; Internet (Audiovisual and Multimedia Communication); International Relations; Public Relations
Engineering	Biological Sciences; Aeronautical Engineering; Agricultural Engineering; Environmental and Sanitary Engineering; Cartographic and Surveying Engineering; Civil Engineering; Food Engineering; Bioengineering; Computer Engineering; Control and Automation Engineering; Fortification and Construction Engineering; Materials Engineering; Mining Engineering; Fisheries Engineering; Petroleum Engineering; Production Engineering; Telecommunications Engineering; Electrical Engineering; Electronic Engineering; Forest Engineering; Mechanical Engineering; Metallurgical Engineering; Naval Engineering; Chemical Engineering; Textile Engineering; Physics
Finance	Business Administration; Accounting; Economics; Engineering; Statistics; Mathematics
Foreign Trade	Business Administration; Economics; Production Engineering; Advertising and Marketing; International Relations; Public Relations
Hospitality and Tourism	Business Administration; International Relations; Public Relations; Advertising and Marketing; Social Communication
Information Technology	Computer Science; Economics; Computer Engineering; Network Engineering; Telecommunications Engineering; Statistics; Informatics; Mathematics; Information Systems; Engineering
Industrial	Food Engineering; Control and Automation Engineering; Materials Engineering; Production Engineering; Electrical Engineering; Electronic Engineering; Metallurgical Engineering; Textile Engineering
Legal	Law
Social Services	Social Services; Economics; Social Sciences; Psychology
Technical	Agricultural Science; Biological Sciences; Civil Engineering; Food Engineering; Control and Automation Engineering; Materials Engineering; Production Engineering; Electrical Engineering; Electronic Engineering; Metallurgical Engineering; Textile Engineering; Statistics; Physics; Geography; Geology; Mathematics; Meteorology; Information Systems
Telecommunications	Computer Engineering; Telecommunications Engineering; Network Engineering; Electrical Engineering; Electronic Engineering; Information Systems
Telemarketing	Business Administration; Agricultural Science; Actuarial Sciences; Accounting; Economics; Natural Sciences; Social Sciences; Production Engineering; Statistics; Physics; Mathematics; Psychology; Advertising; International Relations; Public Relations
Transportation and Logistics	Business Administration; Agricultural Engineering; Food Engineering; Control and Automation Engineering; Materials Engineering; Production Engineering; Electrical Engineering; Electronic Engineering; Mechanical Engineering; Metallurgical Engineering; Chemical Engineering; Textile Engineering

Notes: This table provides a list of majors split by seventeen categories, presented to respondents that select "Completed College" as their highest educational level.

TABLE A34. Hiring Stages

Categories	Hiring Stages
Stage 1 - Application	Application; Online application
Stage 2 - Online Assessments	Online assessment; Exam; English test; Logic test
Stage 3 - Other Assessments	Group interview; Group case study interview; Online interview; Business challenge; Dynamics; Business hack
Stage 4 - Final Interview	Final interview with managers; Final interview; Interview panel with our managers; Panel interview; Final interview with managers and human resources department

Notes: This table presents hiring stages split by four categories. Respondents that select "Completed Technical School" as their current educational level are only presented with synthetic job postings with two stages, *Stage 1 - Application* and *Stage 4 - Final Interview*. Respondents that select "Completed High School" or "Completed College" as their highest level of educational attainment are presented with synthetic job postings with all four hiring stages.

TABLE A35. Nonwage Amenities

Categories	Amenities and Benefits
Amenities	In-office gym; Training platform; Wellness program; Physical activity support; Gym membership; Educational assistance program; Personal support program; Personal development; Mentoring and training
Benefits	Meal allowance; Food allowance; Medication allowance; Transportation allowance; Pharmacy allowance; Pregnancy allowance; Medical assistance; Internet allowance; Daycare allowance; Dental assistance; Partnerships with educational organizations; Language course allowance; Private pension plan

Notes: This table presents nonwage amenities split by two categories. *Amenities* are nonmonetary, physical work environment incentives that improve employee experience. *Benefits* are nonwage compensations to support employee financial, health, and personal needs. Each synthetic job posting will display 2–4 randomly drawn amenities or benefits from *Amenities* and *Benefits*, with a probability of 0.3 from *Amenities* and 0.7 from *Benefits*.

Appendix A.5. Firm-Level Survey Structure

We provide the entire text of the firm-level survey in Appendix Section A.6. The survey begins with an introductory page that offers basic instructions to participants, clarifies the survey's objectives, and verifies the respondent's status as an owner, as well as their consent to continue.[29] See Appendix Figure A10 for the corresponding survey page. We ask for the total number of full-time employees, including the respondent themselves, at the respondent's company. Respondents who are not owners, do not provide consent, or whose companies employ 10 or fewer employees are excluded from the survey. Subsequently, we provide a concise overview of the survey structure (see Appendix Figure A11).

We gather information on various firm aspects such as industry, establishment year, and location. Following this, we provide a concise overview of environmental, social, and governance (ESG) practices (Appendix Figure A12). We then ask about respondents' background with regards to ESG practices prior to participating in the survey. For respondents indicating more than a general understanding of ESG, we request an open-ended explanation of their comprehension. We also assess whether their company has implemented ESG practices and, if so, request details on the specific types and extent of these initiatives. Then, we inquire about the top three perceived benefits and challenges of ESG adoption within the organization. Lastly, we gauge respondents' familiarity with B Corp certification.

In the following section, we ask respondents to estimate costs for implementing various Environmental, Social, and Governance (ESG) practices. The survey covers these three 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 (see Appendix Tables A36, A37, and A38 for criteria by ESG category). Respondents then estimate associated costs, including one-time fixed expenses and recurring annual costs. Additionally, respondents rate their confidence in these cost estimates and estimate their willingness to pay for an investment that would enable their company to meet the criteria for strong ESG performance. Respondents evaluate the likelihood of their company making the investment within the next 1–3 years. We check attentiveness, filtering out those who haven't devoted full attention to maintain data quality.

Following the ESG section, we provide a overview of B Corporation and its certification requirements, shown in Appendix Figure A13. 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 Corporation certification. As in the prior ESG section, we also inquire about their level of confidence in their estimates, their willingness to pay for an one-time fixed cost investment for certification, and the probability of making this financial investment to attain B Corporation certification.

Then, we pose additional questions about the respondent's firm, including the number of full-time employees, employee demographics and wages, and total revenue generated by the

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

firm within the past 12 months. We filter out respondents that report a number of full-time employees that is inconsistent with their original response. Respondents then select and rank four industries, excluding their own, that they believe exhibit the highest and lowest standards of ESG performance.

Finally, we gather demographic information about the respondent, including gender, age, ethnicity, education level, and political preferences. We also inquire about the level of effort and filter out low-quality responses.

Appendix A.6. Firm-Level Survey Questionnaire

Introduction Page. See Appendix Figure A10.

Q1. Are you the owner of your company and do you wish to participate in this survey?
Yes, I am the owner and I would like to participate; No, I am not the owner; No, I do not wish to participate.

Filtering Question.

Q2. Including yourself, how many full-time employees does your company have? Please enter only the numerical value in the field below.
Nonnegative number.

Overview. See Appendix Figure A11.

Firm Characteristics Questions.

Prompt. In this section, we will ask questions that will help us gather basic information about your company. Your responses will help us understand the unique characteristics and context of your business.

Q3. What industry does your company operate in? If your company operates in multiple industries, please select the option that represents the largest operating activity of the company in terms of overall revenue.
Agriculture, livestock, forestry, fishing, and aquaculture; Construction; Electricity and gas; Extractive industries; Finance, insurance, and real estate; Healthcare and social services; Information and communication; Manufacturing; Other service activities; Professional, scientific, and technical activities; Retail Trade; Transportation, storage, and mail; Water, sewage, and waste management; Other (please specify).

Q4. What year was your company founded?
Open-ended response.

Q5. What state is your company located in?
List of 26 states and the Federal District.

Q6. What municipality is your company located in?
Open-ended response.

ESG Explanation. See Appendix Figure A12.

ESG Knowledge and Background.

Q7. On a scale of 1 to 5, please indicate your familiarity with Environmental, Social, and Governance (ESG) practices prior to taking this survey, with 1 being the lowest and 5 being the highest.
1–Not familiar (have not heard of ESG much or at all); 2; 3–Moderately familiar (general understanding of ESG); 4; 5–Extremely familiar (in-depth understanding of ESG)

Q8. In a few sentences, please describe your understanding of ESG practices. *(Displayed if respondent selects 4 or 5 in Q7)*
Open-ended response.

Q9. Has your company implemented rigorous ESG practices?
Yes, we have extensively integrated ESG practices into our operations and decision-making processes; Yes, we have implemented ESG practices to a moderate extent within our organization; No, but we are open to exploring them; No, and we currently have no interest or plans to implement ESG practices.

Q10. Can you please provide specific information about the ESG practices that your company has implemented? *(Displayed if respondent selects "Yes, we have extensively integrated ESG practices into our operations and decision-making processes" or "Yes, we have implemented ESG practices to a moderate extent within our organization" in Q9)*
Open-ended response.

Q11. What do you think are the main benefits of adopting ESG practices in your company? Select up to three choices.
Reputation and brand value; Easier access to finance/lower cost of capital; Compliance with regulatory requirements; Attracting and retaining talent; Risk management; Aligns with company values; Other (please specify).

Q12. What are the main factors preventing your company from fully adopting or increasing your investment in ESG practices? Select up to three choices.
Too expensive; Other competing priorities or initiatives; Does not add any value to the company; Do not have available expertise or manpower; Unfamiliar with ESG; Other (please specify).

Q13. Are you familiar with the B Corp certification, a leading ESG certification awarded to companies that exhibit strong ESG performance?
No, I have never heard of B Corp certification; Yes, I know a bit about B Corp certification; Yes, I know about it and I am extremely familiar with the requirements necessary to achieve B Corp certification.

ESG Cost Questions.

Instructions. In the following section, you will select the most relevant **Environmental, Social, and Governance (ESG) practices** for businesses similar to yours. Then, you'll review the industry ESG standards for achieving strong performance in these areas and estimate the costs involved in implementing them.

Please respond as accurately as possible. If you do not know an answer, please provide your best estimate. However, please invest sufficient time in reading and comprehending each question. To ensure the integrity of the survey data, we will perform various statistical checks. **As a reminder, responding without adequate effort may result in your responses being flagged for low quality and discarded.** Let's begin!

Environmental Prompt. First, we will ask about **environmental practices**. Environmental practices are centered around minimizing the company's impact on the natural environment. This involves measures such as reducing carbon emissions, conserving resources, managing waste effectively.

Q14. Please select the top two environmental topics that are most relevant for businesses similar to yours in terms of size and industry to achieve strong ESG performance.
Water usage and conservation; Hazardous waste management; Greenhouse gas emissions management; Energy efficiency; Sustainable packaging; Supply chain emissions management; Waste management and recycling; Sustainable transportation policies.

Criteria for Strong Performance in E. You have identified the following as the top two environmental topics that are most relevant for businesses similar to yours in size and industry to achieve strong ESG performance:
1. [Selected Practice (1)]
2. [Selected Practice (2)]

Leading ESG certifications such as B Corp typically require the following to achieve strong ESG performance in relation to these practices:
1. [Selected Practice (1)]: [Selected Practice (1) Description]
2. [Selected Practice (2)]: [Selected Practice (2) Description]

See Appendix Table A36 for the criteria to achieve strong ESG performance in relation to each environmental practice.

Q15. What would you estimate to be the upfront one-time fixed dollar amount required to achieve the industry ESG standard outlined above for strong performance? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL)

in the field below.
Number equal to or greater than 1,000.

Q16. What would you estimate to be the annual recurring dollar amount required to maintain the industry ESG standard outlined above for strong performance? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL) in the field below.
Number equal to or greater than 1,000.

Q17. On a scale of 1 to 5, how confident do you feel about the accuracy of your estimated costs?
1–Not confident at all; 2–Slightly confident; 3–Moderately confident; 4–Confident; 5–Very confident.

Q18. Consider an investment opportunity that would enable your company to achieve the industry ESG standard outlined above for strong performance. How much would you be willing to pay for this one-time fixed cost investment? Please enter only the numerical value (in BRL) in the field below.
Nonnegative number.

Timer Prompt. Please ensure you have reviewed the description and answered the questions attentively before proceeding with the survey. The next button will appear once sufficient time has elapsed.

Q19. Consider the costs you provided on the previous page to achieve the industry ESG standard for strong performance below:
Upfront one-time fixed dollar amount: [Environmental Fixed Cost] BRL
Annual recurring dollar amount: [Environmental Recurring Cost] BRL
Within the next 1-3 years, what is the probability that your company will make this financial investment to achieve the industry ESG standard for strong performance?
Number between 0 and 100.

Social Prompt. The following section focuses on **social practices**. Social practices encompass how the company interacts with its employees, customers, communities, and other stakeholders. This includes ensuring fair treatment of employees, promoting diversity and inclusion, supporting community development initiatives, and upholding human rights standards.

Q20. Please select the top two social topics that are most relevant for businesses similar to yours in terms of size and industry to achieve strong ESG performance.
Inclusive hiring practices; Management of diversity, equity, and inclusion; Professional development policies; Employee health and safety practices; Civic engagement & giving; Employee engagement and satisfaction; Local sourcing and spending policies.

Criteria for Strong Performance in S. You have identified the following as the top two social topics that are most relevant for businesses similar to yours in size and industry to achieve strong ESG performance:
1. [Selected Practice (1)]
2. [Selected Practice (2)]
Leading ESG certifications such as B Corp typically require the following to achieve strong ESG performance in relation to these practices:
1. [Selected Practice (1)]: [Selected Practice (1) Description]
2. [Selected Practice (2)]: [Selected Practice (2) Description]

See Appendix Table A37 for the criteria to achieve strong ESG performance in relation to each social practice.

Q21. What would you estimate to be the upfront one-time fixed dollar amount required to achieve the industry ESG standard outlined above for strong performance? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL) in the field below.
Number equal to or greater than 1,000.

Q22. What would you estimate to be the annual recurring dollar amount required to maintain the industry ESG standard outlined above for strong performance? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL) in the field below.
Number equal to or greater than 1,000.

Q23. On a scale of 1 to 5, how confident do you feel about the accuracy of your estimated costs?
1–Not confident at all; 2–Slightly confident; 3–Moderately confident; 4–Confident; 5–Very confident.

Q24. Consider an investment opportunity that would enable your company to achieve the industry ESG standard outlined above for strong performance. How much would you be willing to pay for this one-time fixed cost investment? Please enter only the numerical value (in BRL) in the field below.
Nonnegative number.

Timer Prompt. Please ensure you have reviewed the description and answered the questions attentively before proceeding with the survey. The next button will appear once sufficient time has elapsed.

Q25. Consider the costs you provided on the previous page to achieve the industry ESG standard for strong performance below:
Upfront one-time fixed dollar amount: [Social Fixed Cost] BRL
Annual recurring dollar amount: [Social Recurring Cost] BRL
Within the next 1-3 years, what is the probability that your company will make this financial investment to achieve the industry ESG standard for strong performance?
Number between 0 and 100.

Attention Check.

Q. Attention Check. Before proceeding to the next set of questions, we want to ask for your feedback about the responses you provided so far. It is vital to our study that we only include responses from people who devoted their full attention to this study.

In your honest opinion, should we use your responses, or should we discard your responses since you did not devote your full attention to the questions so far?
Yes, I have devoted full attention to the questions so far and I think you should use my responses for your study; No, I have not devoted full attention to the questions so far and I think you should not use my responses for your study.

Governance.

Prompt. The following section focuses on **governance practices**. Governance practices relate to the company's internal structures and policies that govern its operations. This involves maintaining transparency, ethical conduct, and accountability at all levels of the organization. It includes effective board oversight, sound risk management, compliance with laws and regulations, and treating shareholders fairly.

Q26. Please select the top two governance topics that are most relevant for businesses similar to yours in terms of size and industry to achieve strong ESG performance.
Anti-corruption reporting and prevention; Financial controls; Executive compensation and responsibility; Code of Ethics; Stakeholder communication and commitment; Compliance management; Mission statement.

Criteria for Strong Performance in G. You have identified the following as the top two governance topics that are most relevant for businesses similar to yours in size and industry to achieve strong ESG performance:
1. [Selected Practice (1)]
2. [Selected Practice (2)]
Leading ESG certifications such as B Corp typically require the following to achieve strong ESG performance in relation to these practices:
1. [Selected Practice (1)]: [Selected Practice (1) Description]

2. [Selected Practice (2)]: [Selected Practice (2) Description]

See Appendix Table A38 for the criteria to achieve strong ESG performance in relation to each governance practice.

Q27. What would you estimate to be the upfront one-time fixed dollar amount required to achieve the industry ESG standard outlined above for strong performance? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL) in the field below.
Number equal to or greater than 1,000.

Q28. What would you estimate to be the annual recurring dollar amount required to maintain the industry ESG standard outlined above for strong performance? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL) in the field below.
Number equal to or greater than 1,000.

Q29. On a scale of 1 to 5, how confident do you feel about the accuracy of your estimated costs?
1–Not confident at all; 2–Slightly confident; 3–Moderately confident; 4–Confident; 5–Very confident.

Q30. Consider an investment opportunity that would enable your company to achieve the industry ESG standard outlined above for strong performance. **How much would you be willing to pay for this one-time fixed cost investment?** Please enter only the numerical value (in BRL) in the field below.
Nonnegative number.

Timer Prompt. Please ensure you have reviewed the description and answered the questions attentively before proceeding with the survey. The next button will appear once sufficient time has elapsed.

Q31. Consider the costs you provided on the previous page to achieve the industry ESG standard for strong performance below:
Upfront one-time fixed dollar amount: [Governance Fixed Cost] BRL
Annual recurring dollar amount: [Governance Recurring Cost] BRL
Within the next 1-3 years, what is the probability that your company will make this financial investment to achieve the industry ESG standard for strong performance?
Number between 0 and 100.

B Corporation.

B Corporation Overview. See Appendix Figure A13.

Prompt. We will now ask a few questions about achieving a B Corp certification.
As a reminder, you provided the following estimated **upfront one-time fixed costs** for achieving the industry standards of strong performance for two practices within each ESG category:

(1) Environmental: [Environmental Fixed Cost] BRL
(2) Social: [Social Fixed Cost] BRL
(3) Governance: [Governance Fixed Cost] BRL

Considering that the B Corp certification also evaluates companies on various other ESG aspects that you haven't specifically chosen, we anticipate that the minimum cost to fulfill the requirements for obtaining the certification would be higher than the sum of the cost estimates you provided, totaling [Total Fixed Costs] BRL.
Please keep this in mind while providing your estimated costs below.

Q32. What is your lower-bound, upper-bound, and best estimate of the upfront one-time fixed dollar amount needed to undertake the necessary steps and fulfill the requirements to attain the B Corp certification? Please account for all direct (e.g., equipment purchases or labor expenses) and indirect costs (e.g., training or administrative overhead) in your estimate. Please enter only the numerical value (in BRL) in the fields below.
Lower-bound estimate (greater or equal to 3,000 BRL)
Upper-bound estimate (greater than or equal to lower-bound estimate)
Best estimate (between or equal to lower-bound and upper-bound estimates)

Q33. On a scale of 1 to 5, how confident do you feel about the accuracy of your estimated costs?
1–Not confident at all; 2–Slightly confident; 3–Moderately confident; 4–Confident; 5–Very confident.

Q34. Consider an investment opportunity that would enable your company to fulfill the necessary requirements to attain the B Corp certification. How much would you be willing to pay for this one-time fixed cost investment? Please enter only the numerical value (in BRL) in the field below.
Nonnegative number.

Q35. Consider the costs you provided on the previous page to undertake the necessary steps and fulfill the requirements to attain the B Corp certification:

(1) Environmental: [Environmental Fixed Cost] BRL
(2) Social: [Social Fixed Cost] BRL
(3) Governance: [Governance Fixed Cost] BRL

Within the next 1-3 years, what is the probability that your company will make this financial investment to undertake the necessary steps and fulfill the requirements to attain the B Corp certification?
Number between 0 and 100.

Firm Characteristics Questions (continued).

Prompt. Thank you for your responses. In this section, we will ask some additional questions about your company.

Q36. Including yourself, how many full-time employees does your company have? Please enter only the numerical value in the field below.
Number greater than 10.

Q37. What percentage of full-time employees in your company have completed college or attained a higher level of education?
Number between 0 and 100.

Q38. What is the average monthly wage for full-time employees in your company that have completed college or attained a higher level of education?
Less than R$1,000; [R$1,000, R$15,000]; R$15,000 or more

Q39. What is the average monthly wage for full-time employees in your company that have not completed college?
Less than R$1,000; [R$1,000, R$15,000]; R$15,000 or more

Q40. What percentage of your company's full-time employees identify as white?
Number between 0 and 100.

Q41. What is the total revenue generated by your company in the past 12 months? Please enter only the numerical value (in BRL) in the field below.
Open-ended response.

Industry ESG Ranking.

Q42. 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? Please drag and drop four industries to each of the relevant boxes on the right. Rank the highest performing industries from highest (1) to lowest (4) performance, and the lowest performing industries from lowest (1) to highest (4) performance.
List of industries excluding that of the respondent's.

Demographic Questions.

Prompt. Thank you for your responses. In this last section, we will ask some additional questions about you.

Q43. What gender do you identify as?
Male; Female; Prefer not to answer.

Q44. What is your age?
Open-ended response.

Q45. What ethnicity do you identify as?
Indigenous; White; Asian; Black; Mixed; Other.

Q45. What is your level of education?
Completed primary education; Incomplete high school; Completed high school; Incomplete college; Completed college; Completed masters; Completed doctorate.

Q46. In terms of your political preferences, where do you see yourself on the progressive/conservative spectrum?
Liberal; Moderate; Conservative; Prefer not to answer.

Effort.

Q. Effort. It is vital to our study that we only include responses from people that devoted their full attention to this study. Otherwise years of effort (the researchers' and the time of other participants) could be wasted. Please tell us how much effort you put forth towards this study.
I put forth almost no effort; I put forth very little effort; I put forth some effort; I put forth quite a bit of effort; I put forth a lot of effort.

Conclusion.

Q. Conclusion. Thank you for taking the time to complete our survey.
We value your feedback and suggestions. If you have any additional comments or feedback that you would like to share with us, please feel free to do so in the space provided below. Your input is greatly appreciated!

Appendix A.7. Firm-Level Survey Additional Figures and Tables

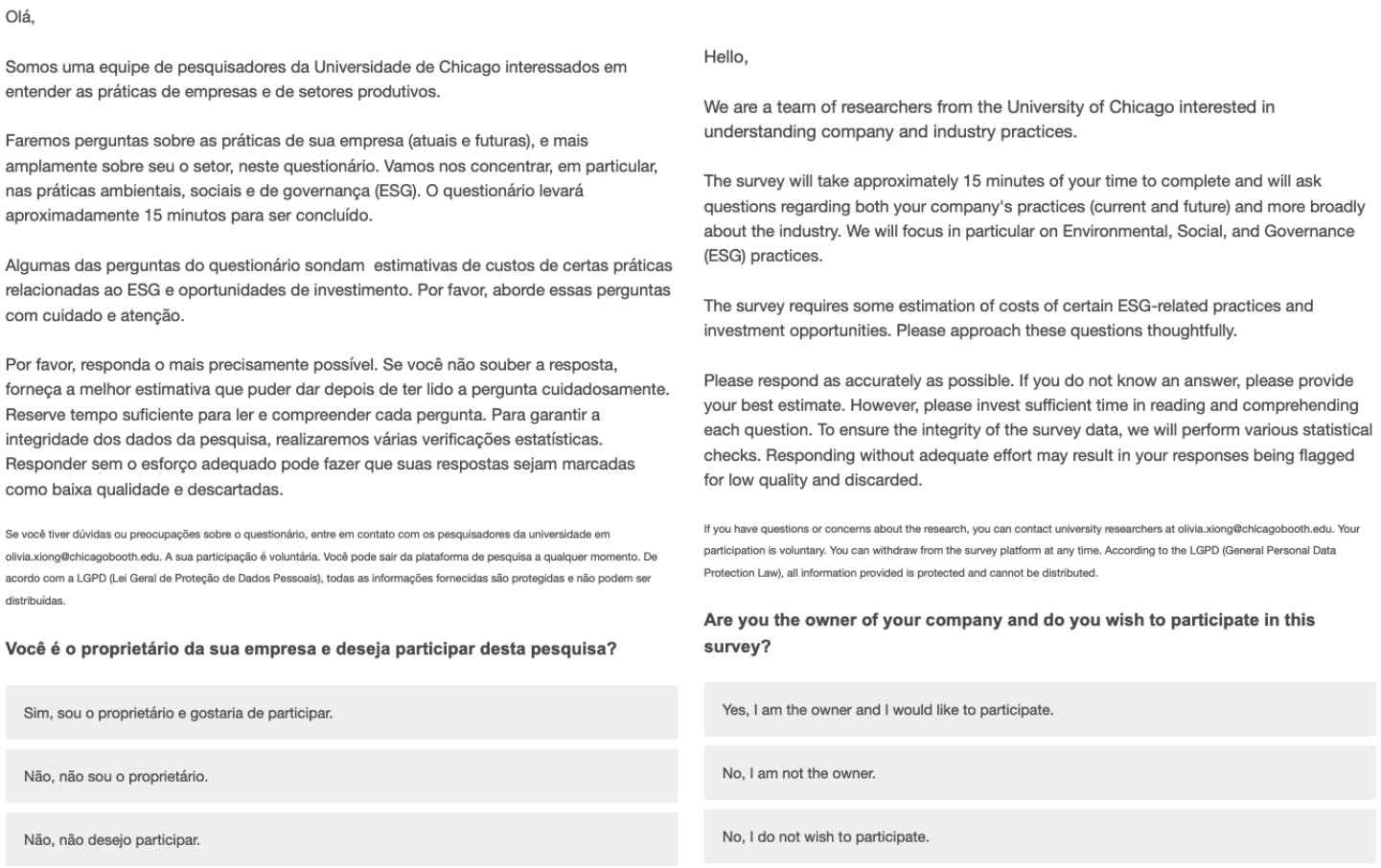


Figure A10. Firm Survey Introduction Page

Notes: This figure presents the introduction page of the firm survey, the first page that respondents see upon clicking on the survey link. Panel A shows the actual page in Portuguese shown to respondents in the survey. Panel B shows the English translation.

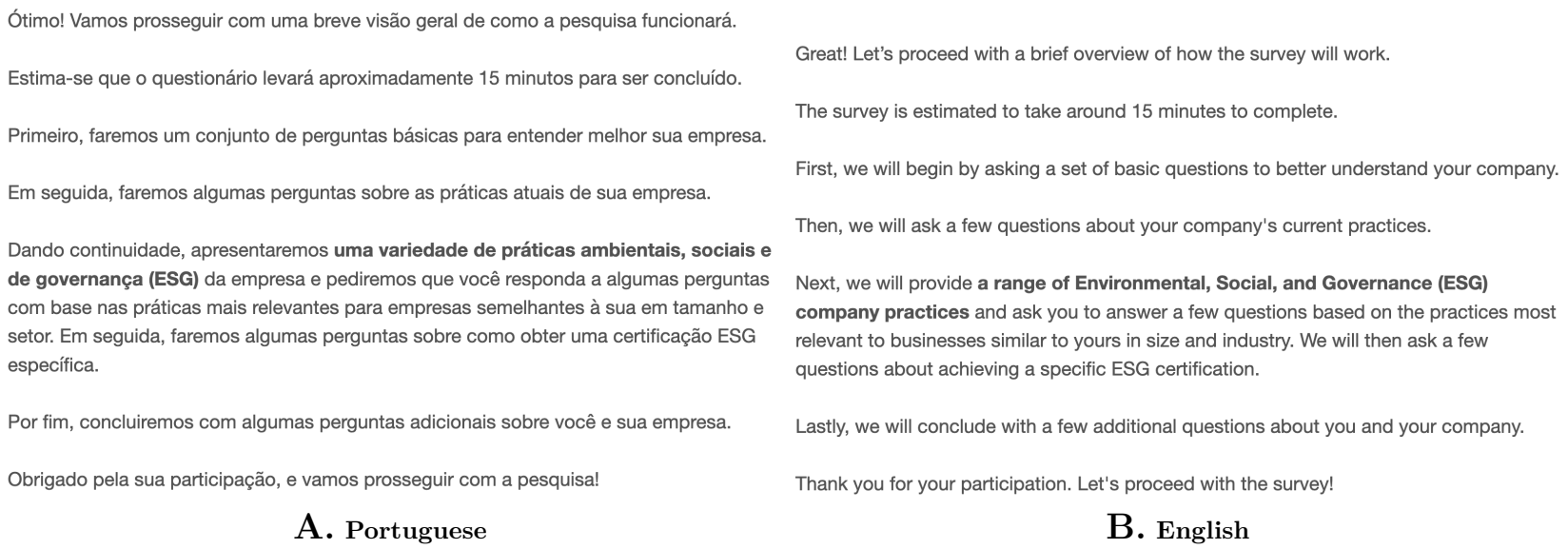


FIGURE A11. Firm Survey Overview

Notes: This figure presents the overview page of the firm survey. Panel A shows the actual page in Portuguese shown to respondents in the survey. Panel B shows the English translation.

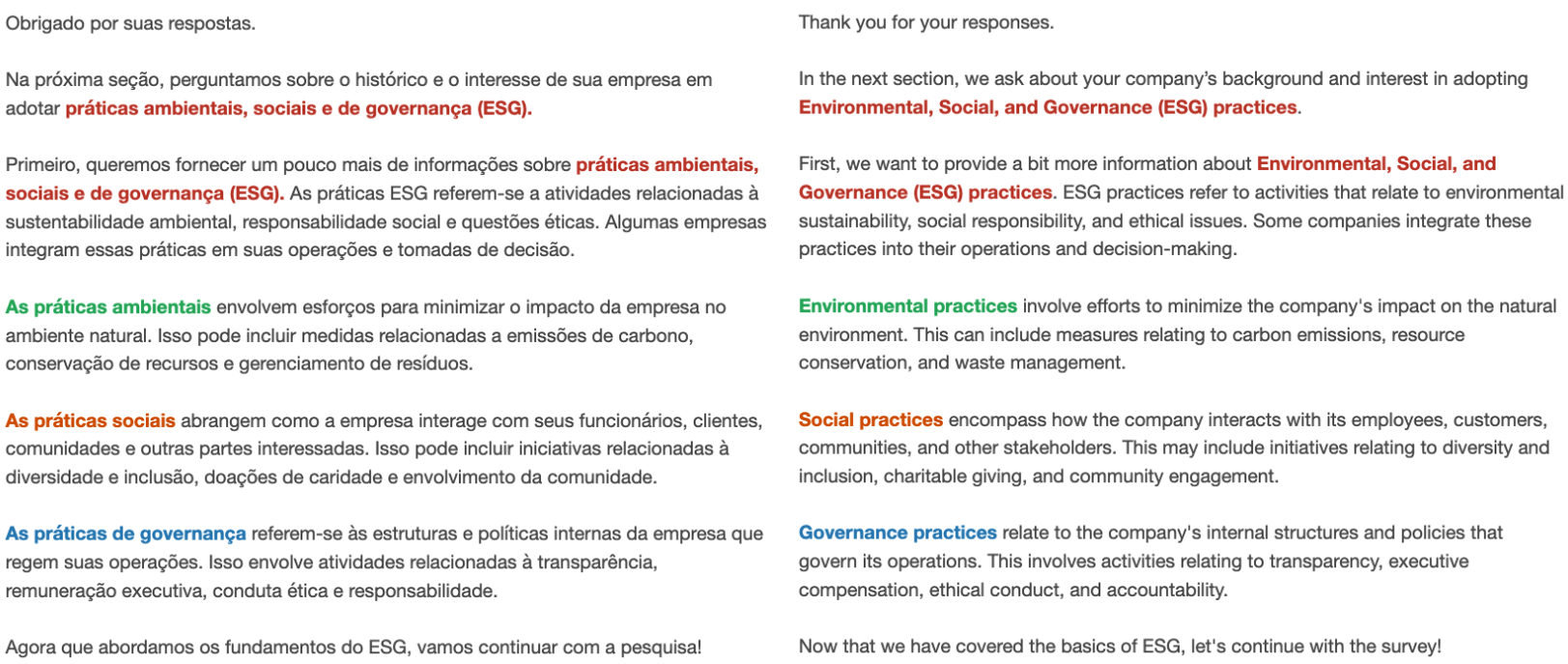


FIGURE A12. Firm Survey ESG Overview Page

Notes: This figure presents the page of the firm survey that provides an overview of Environmental, Social, and Governance (ESG) practices. Panel A shows the actual page in Portuguese shown to respondents in the survey. Panel B shows the English translation.

Obrigado por suas respostas. Por favor, leia atentamente a o texto abaixo antes de prosseguir com a pesquisa. Você poderá seguir adiante assim que tempo suficiente tiver sido dedicado a essa leitura.

Discutimos diversas práticas de ESG e os padrões para se alcançar um desempenho sólido de ESG para dois tópicos em cada categoria de Ambiental, Social e Governança.

Gostaríamos de fornecer a você uma visão geral de uma das principais certificações ESG, a B Corp, que reconhece as empresas por seu desempenho excepcional em várias dimensões de práticas ambientais, sociais e de governança (ESG). **Para obter uma certificação B Corp, as empresas devem exibir e relatar um forte desempenho em todas essas áreas.**

Aqui está uma visão geral do processo típico para obter a certificação B Corp para empresas como a sua:

1. **Complete uma avaliação online** que avalia o desempenho da sua empresa em áreas-chave como impacto ambiental, governança, trabalhadores, comunidade, meio ambiente e clientes. Esta avaliação abrangente inclui tópicos semelhantes aos apresentados nesta pesquisa. Os padrões de alto desempenho descritos para cada prática estão alinhados com os critérios de avaliação usados na certificação.

2. Para se qualificar para a certificação, sua empresa deve **obter uma pontuação mínima** na avaliação. Se sua pontuação inicial cair abaixo do limite, pode ser necessário implementar mudanças e melhorias nas áreas identificadas para atingir o nível de qualificação.

3. A etapa final antes da certificação é **enviar e verificar os documentos comprobatórios** para validar as respostas fornecidas na avaliação online.

A. Portuguese

Thank you for your responses. Please read the description below attentively before proceeding with the survey. The next button will appear once sufficient time has elapsed.

We discussed various ESG practices and the industry standards to achieve strong ESG performance for two topics in each Environmental, Social, and Governance categories.

We would now like to provide you with an overview of a leading ESG certification, B Corp, that recognizes companies for their exceptional performance across various Environmental, Social, and Governance (ESG) categories. **To obtain a B Corp certification, companies must exhibit and report strong ESG performance across all ESG categories**.

Here's an overview of the typical process for obtaining the B Corp certification for companies like yours:

1. **Complete an online assessment** that evaluates performance in key areas such as environmental impact, governance, workers, community, environment, and customers. This comprehensive assessment covers similar topics to those presented in this survey. The standards for strong ESG performance described for the practices selected in this survey closely align with the evaluation criteria used in the certification.

2. To qualify for certification, companies must **achieve a minimum score** on the assessment. If the initial score falls below the threshold, it may be necessary to implement improvements in the identified areas to meet the qualifying level.

3. The final step before certification is **submitting and verifying supporting documents** to validate the responses provided in the online assessment.

B. English

FIGURE A13. Firm Survey B Corp Overview Page

Notes: This figure illustrates the page of the firm survey dedicated to explaining B Corporation and the certification's requirements. Panel A shows the actual page in Portuguese shown to respondents in the survey. Panel B shows the English translation.

Table A36. Criteria for Strong Performance by E(SG) Practice

Practice	Criteria
Water usage and conservation	High ESG performance in water usage and conservation involves adopting practices to conserve and manage water resources. This includes: – Regularly monitoring and recording water usage. – Conducting an analysis of the company's value chain, including suppliers, services, and materials, to identify material areas of water usage. – Setting specific reduction targets for reducing water footprint relative to previous performance (e.g., a 5% reduction of water usage from baseline year). – Implementing water conservation methods at the majority of the company's corporate offices and facilities, such as installing low-flow water fixtures. – Managing nonhazardous wastewater through on-site watershed management, wastewater reuse or recycling, on-site partial-reclamation, or off-site water treatment.
Hazardous waste management	High ESG performance in hazardous waste management involves adopting practices to ensure proper storage, treatment, and disposal of dangerous waste. This includes: – Eliminating hazardous waste and materials. If elimination is not feasible: – Regularly monitoring and tracking hazardous waste production (e.g., batteries, paint, electronic equipment, etc.) throughout the entire value chain. – Setting a target of zero hazardous waste. – Implementing written procedures for the safe storage, use, and responsible disposal of each hazardous material (e.g., chemicals, pesticides, and fertilizers). – Properly sealing, labeling, and storing hazardous materials in a locked area separate from regular business activities.
Greenhouse gas emissions management	High ESG performance in greenhouse gas emissions management involves adopting practices to monitor, record, and reduce greenhouse gas (GHG) emissions. This includes: – Regularly monitoring and recording GHG emissions. – Setting specific reduction targets relative to previous performance (e.g., a 5% reduction of GHGs from baseline year). – Conducting an analysis of the company's value chain, including suppliers, services, and materials, to identify material risk contributions of greenhouse gas emissions. – Purchasing certified carbon credits to offset some or all of the greenhouse gas emissions generated by the company and supply chain.
Energy efficiency	High ESG performance in energy efficiency involves adopting practices to optimize energy consumption. This includes: – Monitoring energy usage and setting targets based on monitored intensity (e.g., energy use relative to revenue or volume produced). – Conducting regular energy audits to identify areas of inefficiency. – Implementing energy-efficient equipment and lighting solutions in buildings and facilities. – Sourcing electricity from renewable energy sources, such as on-site renewables, other clean or renewable-based generators, or a municipal power grid that generates at least 10 – Implementing energy-saving strategies, such as energy use monitoring, efficient appliances and lighting, and the use of renewable energy, in the majority of company buildings and facilities.
Sustainable packaging	High ESG performance in sustainable packaging involves adopting practices to minimize the environmental impact of packaging materials. This includes: – Conducting a formal assessment of packaging design and materials to identify opportunities to minimize environmental impact. – Using nontoxic, recyclable packaging designed to have less overall environmental impact than common alternatives. – Providing clear recycling instructions on packaging to promote responsible disposal.
Supply chain emissions management	High ESG performance in supply chain carbon emissions management involves adopting practices to regularly monitor and record greenhouse gas (GHG) emissions throughout the supply chain. This includes: – Establishing communication channels with suppliers for tracking and reporting GHG emissions. – Evaluating suppliers based on their commitments to reducing emissions. – Auditing and supporting suppliers in completing corrective actions to reduce emissions. – Conducting a comprehensive analysis of the value chain to identify material risk contributions of greenhouse gas emissions. – Setting concrete GHG emission reduction targets throughout the supply chain.
Waste management and recycling	High ESG performance in waste management and recycling involves adopting practices to regularly monitor, record, and reduce waste production. This includes: – Setting specific waste reduction targets relative to previous performance (e.g., a 5 – Implementing comprehensive, facility-wide recycling programs with ongoing collection of at least all standard materials in the area in the majority of company facilities. – Promoting recycling and reuse of materials on-site with clearly marked bins for proper use. – Posting a written recycle/reduce/reuse policy in at least 80 – Implementing a product/packaging reclamation and recycling or reuse program, either designed internally or in collaboration with a third party.
Sustainable transportation policies	High ESG performance in sustainable transportation policies involves adopting practices to prioritize the use of sustainable and low-emission vehicles for product transportation and distribution. This includes: – Utilizing clean and low-emission vehicles (e.g., hybrid, LPG, electric) to transport and distribute products. – Using strategic planning software to minimize fuel usage and optimize transportation routes. – Implementing a written shipping or distribution policy that prioritizes environmentally-efficient practices. – Prioritizing shipping methods with lower environmental impacts, such as sea or rail transportation over air shipment.

Notes: This table presents the criteria for achieving strong ESG performance split by selected environmental practice in the firm survey. Respondents first select two environmental practices and then are presented with the corresponding criteria for strong ESG performance.

TABLE A37. Criteria for Strong Performance by (E)S(G) Practice

Practice	Criteria
Inclusive hiring practices	High ESG performance in inclusive hiring practices involves adopting practices that promote inclusivity and equity throughout the hiring process. This includes: – Including a commitment to diversity, equity, and inclusion in all job postings. – Conducting anonymous or 'blind' reviews of applications or resumes without attaching names or identifiable characteristics. – Actively recruiting from organizations that serve underrepresented populations. – Conducting regular reviews of job description language and requirements to ensure they are inclusive and equitable.
Management of diversity, equity, and inclusion	High ESG performance in managing diversity, equity, and inclusion involves adopting practices to foster an inclusive and equitable workplace. This includes: – Implementing a formal, written nondiscrimination policy that covers at a minimum: gender, race, disability, political opinion, sexual orientation, age, religion. – Designating an individual or group explicitly responsible for overseeing diversity, equity, and inclusion efforts (i.e., a Diversity Manager or Inclusion Committee). – Offering comprehensive training to all employees on diversity-related topics. – Establishing voluntary employee resource or affinity groups. – Tracking workforce diversity through anonymous surveys. – Setting measurable diversity improvement goals that are reviewed by senior executives. – Conducting pay equity analyses by gender, race/ethnicity, or other demographic factors and implementing equal compensation improvement plans if necessary.
Professional development policies	High ESG performance in professional development policies involve implementing policies and opportunities to support employee professional growth. This includes: – Establishing a formal onboarding process for new employees. – Providing employees with regular ongoing training on core job responsibilities at least annually. – Implementing a formal policy to encourage internal promotions and hiring for advanced positions (e.g., posting job openings internally first). – Facilitating external professional development opportunities (e.g., conference attendance, online training). – Supporting employees in pursuing intensive continuing education credentials (e.g., college degrees, professional licenses) through reimbursements or programs.
Employee health and safety practices	High ESG performance in employee health and safety practices involves adopting practices that promote protection from work-related safety and health hazards. This includes: – Conducting annual safety and health training for all employees. – Transparently recording and sharing data internally on injuries and accidents. – Establishing a formal safety reporting system for employees to submit safety concerns. – Appointing a safety program representative or committee reporting to senior management. – Conducting thorough investigations into accidents and incidents according to documented standard procedures. – Conducting annual evaluations of the safety and health system with active senior management involvement.
Civic engagement & giving	High ESG performance in civic engagement and giving involves adopting practices that actively contribute to the development of the local community through philanthropic efforts. This includes: – Making financial or in-kind donations to nonpolitical causes. – Investing in the local community or providing pro-bono services. – Establishing corporate partnerships with charitable organizations. – Having a formal commitment to donations (e.g., 1% for the planet). – Offering programs to match individual employees' charitable donations. – Implementing screening practices for charitable contributions or impact measurement mechanisms for community investments.
Employee engagement and satisfaction	High ESG performance in employee engagement and satisfaction involves adopting practices to monitor and evaluate employee satisfaction and engagement levels. This includes: – Calculating and comparing employee attrition rates against industry benchmarks to gauge workforce retention. – Conducting regular surveys, at least annually, to assess employee satisfaction and engagement levels and comparing the results to industry benchmarks. – Outperforming industry benchmarks on employee attrition and satisfaction. – Implementing formalized feedback and complaint mechanisms that go beyond direct reporting lines to address employee concerns and improve company practices. – Conducting comprehensive reviews of employee feedback and complaints, at least every other year, with active involvement from employees.
Local sourcing and spending policies	High ESG performance in local sourcing and spending policies involves adopting practices that prioritize economic growth and sustainability within the local community. This includes: – Incorporating a written preference for purchasing from local suppliers into procurement policies. – Establishing formal targets or goals for the amount of local purchasing. – Maintaining lists of preferred local vendors for specific facilities. – Ensuring a significant portion (80%+) of the Cost of Goods Sold is spent within the country of operations, specifically from in-country registered companies or national citizens. – Allocating a substantial portion (60%+) of annual company expenses to independent suppliers local to the company's headquarters or relevant facilities.

Notes: This table presents the criteria for achieving strong ESG performance split by selected social practice in the firm survey. Respondents first select two social practices and then are presented with the corresponding criteria for strong ESG performance.

Table A38. Criteria for Strong Performance by (ES)G Practice

Practice	Criteria
Anti-corruption reporting and prevention	High ESG performance in anti-corruption reporting and prevention involves adopting practices to promote integrity and address potential related concerns. This includes: – Establishing a comprehensive written employee whistle-blowing policy with confidentiality provisions. – Communicating the anti-corruption reporting and prevention systems at least annually to relevant internal and external stakeholders. – Implementing mechanisms for continuous monitoring and internal assessments (e.g., internal employee self-evaluations, automated controls monitoring). – Ensuring that senior managers promptly implement necessary changes based on the findings of internal and external reviews. – Providing annual training on the anti-corruption system.
Financial controls	High ESG performance in financial controls involves adopting practices that promote sound financial management. This includes: – Establishing robust control activities, such as password protection systems that are periodically changed and tailored to different access levels based on employee positions. – Conducting fraud risk assessments at least annually and reporting internal control deficiencies to senior management. – Documenting lines of financial reporting, responsibilities, and limits for the authorization, approval, and verification of disbursements in writing. – Implementing and documenting financial controls that, at a minimum, cover controls for cash disbursement, accounts receivable, accounts payable, and inventory management.
Executive compensation and responsibility	High ESG performance in executive compensation and responsibility involves adopting practices to promote sustainable practices and accountability within the leadership team. This includes: – Integrating social and environmental considerations into executive roles and job descriptions. – Aligning executive compensation with social and environmental goals. – Reviewing social and environmental performance at the Board of Directors level. – Formally incorporating contributions to social and environmental goals in performance reviews.
Code of Ethics	High ESG performance in relation to a company's Code of Ethics involves adopting a formal written Code of Ethics that comprehensively documents policies around various governance-related topics. This includes: – Prohibiting bribes in any form, including kickbacks or gifts, on any portion of contract payments or soft dollar practices. – Establishing formal oversight policies and committing to public disclosure of direct or indirect contributions to political parties, politicians, lobby groups, charitable organizations, and advocacy groups. – Providing regular training on the Code of Ethics to the Board of Directors, newly hired employees, managers, and non-managerial employees, and other relevant stakeholders. – Promptly communicating any changes to the code to all relevant stakeholders.
Stakeholder communication and commitment	High ESG performance in stakeholder engagement and commitment involves adopting practices that emphasize proactive communication with stakeholders. This includes: – Implementing a formal stakeholder engagement plan or policy that includes identification of relevant stakeholder groups. – Establishing formal and regular processes to gather information from stakeholders (focus groups, surveys, community meetings). – Implementing formal procedures to address results from stakeholder engagement, with a designated individual or team responsible for appropriate follow-ups. – Reporting stakeholder engagement results to the highest level of oversight in the company.
Compliance management	High ESG performance in compliance management involves adopting practices to formally address potential material compliance breaches. This includes: – Promptly reporting breaches, including case details, to the Board of Directors. – Conducting thorough investigations into compliance breaches through independent parties. – Taking appropriate actions, such as dismissing or disciplining involved employees and terminating contracts with business partners in breach. – Making improvements to compliance documents and programs based on reported cases.
Mission statement	High ESG performance in relation to a company's mission statement involves: – Having a written corporate mission statement that is formally shared with employees or publicly available. – Including a commitment to a specific positive social impact (e.g., poverty alleviation, sustainable economic development). – Including a commitment to a specific positive environmental impact (e.g., reducing waste sent to landfills through upcycled products). – Including a commitment to serve a target beneficiary group in need (e.g., low-income customers).

Notes: This table presents the criteria for achieving strong ESG performance split by selected governance practice in the firm survey. Respondents first select two governance practices and then are presented with the corresponding criteria for strong ESG performance.