

Communicating Corporate Culture in Labor Markets: Evidence from Job Postings*

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Abstract

A company's culture represents one of the most important factors that job seekers consider. In this study, we examine how firms craft their job postings to convey information about their culture and whether doing so helps attract employees. We utilize state-of-the-art machine learning methods to develop a comprehensive dictionary of key corporate values across the near-universe of job postings. Our main analyses demonstrate that culture information in job postings helps firms better attract job seekers, as it is associated with higher worker inflows and lower subsequent worker outflows. Culture information has a more pronounced effect on worker inflows when job seekers face information frictions in learning about culture through other sources. In addition, culture information helps job seekers sort into culturally fit companies and also signals that the company has employee-friendly policies. Additional analyses indicate that interviews are more likely to lead to job offers for firms highlighting culture in their job postings, which is consistent with such information facilitating better matching. Overall, our findings suggest that job postings are an important mechanism for communicating cultural values to prospective employees and attracting talent.

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1. Introduction

Corporate culture represents a critical attribute when choosing a job. A longstanding literature in economics suggests that nonwage attributes, such as culture, can significantly influence job search.¹ Job seekers have placed increasing emphasis on culture in recent years, with some evidence suggesting that job seekers now believe culture to be equally as important as salary when evaluating job prospects (Estrada, 2020). Despite its importance, culture remains difficult to observe, thus generating significant information frictions and search costs for job seekers (Guiso et al., 2008; Guiso et al., 2015b; Graham et al., 2022; Grennan, 2019). In this study, we examine whether communicating cultural values to job seekers through corporate job vacancy postings alleviates such frictions and improves hiring outcomes.

We focus on job postings as they represent the most direct way in which a company can highlight its key values to prospective employees, who are often evaluating multiple job postings at once. Our central prediction is that making culture information salient within the job posting will help companies attract job seekers, and ultimately fill employment vacancies more quickly and efficiently. Our prediction builds on prior research and assumes that employees value culture (Sheridan, 1992; Glassdoor Survey, 2019), but also face information frictions in learning about firm culture.² Culture information in job postings may be useful to job seekers if it helps employees sort into companies and positions that culturally align with their preferences or more generally signals that the company is a good employer with employee-friendly policies (e.g., high levels of employee satisfaction).³ In addition, job postings may provide job seekers with higher quality and

¹ See, for example, Mas and Pallais (2017) and Maestas et al (2018).

² For example, anecdotal evidence suggests significant recruiting benefits for companies that promote culture in job postings, with some arguing that highlighting culture is more effective than specifying required skillsets (e.g., Wagner, 2018; Johnson, 2020).

³ Similar arguments related to sorting have been used in the economics literature to describe the marriage matching market (e.g., Dupuy and Galichon, 2014; Shiue and Keller, 2022).

more relevant information than other information sources, such as corporate websites and job review sites. For example, job seekers relying on external information sources bear additional search costs as they need to collect and assimilate information from multiple external sources.⁴ Such information may not be directly relevant for the position of interest, which may be within a business unit or location with its own subculture.⁵ In contrast, job postings allow hiring managers to customize cultural information for a specific position and make such information more accessible and salient to job seekers.

We note that our prediction is not without tension and that there are valid arguments to suggest that culture information may not influence hiring outcomes. For instance, job seekers may focus primarily on specific job requirements (e.g., skillsets) and compensation, thus rendering cultural information less relevant or second-order. Indeed, recent regulatory initiatives mandating salary disclosures in job postings highlight the importance of wage information (Liu, 2022). Ultimately, the extent to which firms' provision of culture information in job postings affects recruiting outcomes warrants an empirical investigation.

We adopt a semi-supervised machine learning approach to measure the extent to which firms describe their corporate culture in job postings. As culture is multi-dimensional, we focus on how firms describe the five cultural values that companies most frequently highlight on their corporate websites (Guiso et al., 2015b): innovation, integrity, respect, teamwork, and quality.⁶ Using nearly 25 million postings issued by approximately 5,000 companies from 2010-2020, we train a neural network model to learn meanings of all words and phrases in job postings that relate

⁴ For example, job review sites introduce additional search costs as they often require users to submit reviews through “give-to-get” models.

⁵ For example, a job vacancy posting for a managerial position at corporate headquarters for a consumer-facing firm will likely highlight different values and norms than one for a position in a local store.

⁶ Sull et al. (2020) find that these five values are the most listed values in corporate official value statements. For example, 65% of companies listed “integrity” as one of their corporate values.

to the above cultural dimensions and then construct a dictionary containing the associated words. As job seekers may ascribe different weights to certain cultural values depending on their preferences (Sull et al., 2020), it is a priori not clear which values should resonate most with any given job seeker. We thus follow prior studies (e.g., Graham et al., 2022; Li et al., 2021) and utilize a composite score to capture the degree to which firms broadly emphasize culture (across multiple dimensions) in job postings.⁷

We begin by exploring the trends in firms' provision of culture information in job postings. Our data reveal a significant increase in culture-oriented job postings over our sample period, which coincides with culture becoming more important to job seekers in recent years. In addition, we uncover meaningful occupation variation, with job postings in management, legal, and computer and mathematical positions being the most likely to emphasize corporate culture. Occupations relying on manual labor (e.g., construction and extraction, building and grounds cleaning and maintenance, and transportation and material moving, etc.) on the other hand, are the least likely to emphasize culture in their postings.

We also conduct a variance decomposition analysis to better understand what explains variation in the provision of culture information. While firm fixed effects explain a large portion of the variation in our culture measure (accounting for 29% of the variation), we find that employer-occupation interactive fixed effects offer substantially more explanatory power (accounting for 52% of the variation). This statistic indicates that culture language is not “boilerplate” and varies within-firm, thus making job postings potentially more informative than

⁷ We consider various composite measures of strong culture, including indicator variables based on a job posting containing language indicating that the culture is strong across each dimension. In untabulated analyses, we also find that our results are robust to only using seed words to measure corporate culture.

other firm-level information sources (e.g., websites, annual reports). In other words, firms appear to craft job postings uniquely for certain positions or job types.

Our main analyses examine the relation between culture information and employee inflows. For these analyses, we collect detailed data on worker inflows at the Firm-MSA-Quarter level from Revelio Labs. We further aggregate culture scores from individual job postings to the Firm-MSA-Quarter level and then examine the association between the level of job posting culture information and worker inflows. Our baseline results indicate a strong positive relation between culture information and subsequent worker inflow. These effects are robust to controlling for a stringent set of fixed effects (including Firm-MSA and MSA-Quarter interactive fixed effects) and persist across various measures of culture information. In addition, we find no evidence of a pre-trend and instead find that the effects of culture information on employee inflows decrease predictably in the quarters following a job posting. Finally, the results are also economically meaningful. A one-standard-deviation increase in culture information is associated with a 16% increase in employee inflow, relative to the sample median.

Having established a robust association between job posting culture information and employee inflows, we next explore the mechanisms underlying this finding. We first examine the role of information asymmetry. We expect that culture information in job postings will have a greater effect on worker inflow when workers have lower quality external information about the firm's culture. Consistent with this argument, we find that our results are less pronounced among larger Firm-MSA pairs (with presumably better information environments) and for firms with more high-quality review data available on external job review sites. These findings help strengthen our argument that job postings alleviate information frictions about corporate culture in labor markets.

Next, we assess the plausibility of two channels through which culture information can impact employee inflow. First, the cultural fit channels suggests that culture information helps workers sort into jobs that better fit their preferences. Assessing cultural fit poses an empirical challenge as we cannot directly observe worker preferences. To circumvent this challenge, we utilize the Black Lives Matter (BLM) movement as a plausibly exogenous shock that changes job seekers' preferences for certain cultural values. In particular, we expect that the BLM movement should increase the weight that job seekers place on the "Respect" dimension of culture.⁸ Consistent with expectations, we find that job postings containing culture information relevant to respect have a more pronounced effect on worker inflow following BLM. In contrast, cultural dimensions less relevant to BLM are not associated with increased inflows following the movement. These results are consistent with culture information in job postings helping job seekers to find culturally-fit jobs.

We further assess the cultural fit channel by examining detailed data on interview reviews from Glassdoor. If culture information facilitates better matching, we expect job candidates to have better offer and acceptance rates, as job seekers submitting applications self-select into positions for which they are a good fit. Consistent with this expectation, we find that culture information in job postings is positively associated with both offer and acceptance rates, suggesting that such information facilitates better matches and reduces search costs for the firm.

The second channel through which culture information can impact inflow is by signaling that the firm is generally a reputable employer with policies that are employee-friendly (e.g., opportunities for growth and promotion). We assess whether the level of culture information in job postings is associated with external indicators of employee-friendly workplaces, including low

⁸ Li et al. (2021) confirms that this dimension of culture is most relevant for BLM as they validate that it is associated with net diversity strengths, using data from KLD.

numbers of employee-related violations and risk factors (Gantchev et al., 2019; Heese et al., 2021) and higher external culture ratings (Grennan, 2019; Li et al., 2021). Our results are consistent with this explanation and indicate that companies that emphasize culture more prominently in their job postings are indeed better employers.

An underlying assumption in our analyses thus far is that culture information in job postings is credible. That is, given that job seekers appear to value corporate culture, what frictions prevent all firms (including “bad culture” firms) from highlighting culture in their job postings? One explanation is that misrepresenting culture is a costly strategy as it can potentially lead to subsequent reputation damage, poor employee matches, and costly turnover.⁹ Our final mechanism analysis explores this issue by examining how culture information relates to employee outflows. We first demonstrate that higher levels of culture information are associated with lower levels of employee outflow in subsequent years. This result suggests culture information is credible and workers appear to be more satisfied in firms that communicate culture. We also use the outflow setting to demonstrate one potential cost of misrepresenting culture. We construct a measure of “cultural misrepresentation” that accounts for job postings that advertise strong cultures but are subsequently revealed to have low culture ratings on Glassdoor in subsequent quarters. We find that firms that misrepresent their culture in job postings do indeed experience higher levels of subsequent employee outflows, suggesting that such a strategy may not be feasible.

The latter half of our study considers a battery of robustness tests that helps strengthen our claim that culture information in job postings influences worker inflow. First, we disaggregate our analysis to a finer unit of observation by examining a Firm-MSA-Occupation-Quarter panel

⁹ For example, hiring a worker who misunderstands a firm’s culture can lead to that worker ultimately quitting. The U.S. Department of Labor estimates that “bad” hires can generate costs for a firm that are nearly 30% of the individual’s annual income.

(instead of a Firm-MSA-Quarter) panel. This analysis allows us to better match worker inflows to the job vacancy posting. Second, we utilize entropy balancing to match job postings based on firm characteristics, job characteristics, and other external culture metrics. This analysis is particularly powerful, as it allows us to compare two firms that are similar across relevant observables, including external culture metrics, and more directly isolate the effects of culture information in job postings. Finally, we control for advertised and actual wages, which allows us to assess how workers value culture relative to salary, even though salary disclosure is admittedly rare in our sample.¹⁰ Our results persist across all settings, and thus continue to indicate that culture information in job postings has a material effect on worker inflow.

Our study contributes to the literature across several dimensions. First, we extend the academic literature on corporate culture (e.g., Guiso et al., 2015a; Guiso et al., 2015b; Graham et al., 2022; Grennan et al., 2019; Pacelli, 2019; Li et al., 2021). Prior studies examine how firms reveal information about their culture through public disclosures, conference calls, corporate websites, or regulatory violations. Our study is the first to provide large-scale evidence on how firms directly convey information about culture in job postings. This is an important extension to the literature, as recent studies indicate that job postings are informative disclosures with direct implications for labor markets and capital markets (Sran, 2021). Our results suggest that job postings provide an important tool for firms to describe their culture, and in turn attract job seekers.

Second, we extend prior studies examining the informational role of job review sites, such as Glassdoor and Indeed (e.g., Huang et al., 2019; Hales et al., 2018; Campbell and Shang, 2021; Dube et al., 2021). These studies primarily focus on the information content of employee review platforms and how they affect firm behavior and capital market outcomes. We extend this literature

¹⁰ Only 8% of job posting observations disclose salary information in our sample.

by examining how firms seek to alleviate potential information frictions related to job search on these platforms. In doing so, we also build on the nascent line of accounting research examining employee job search costs (Choi et al., 2022; deHaan et al., 2023). Our results are consistent with firms emphasizing culture in job postings to reduce job search costs for employees and reduce information asymmetry regarding firm values.

More broadly, our focus on culture disclosures is also relevant in light of recent initiatives by the SEC requiring firms to provide more detailed descriptions of their human capital. Initial evidence from the human capital disclosure mandate suggests that firms recognize the importance of corporate culture, as nearly 20% of firms discuss this issue (e.g., Batish et al., 2021). Our paper complements recent studies examining human capital disclosure (e.g., Bourveau et al., 2022; Demers et al., 2022), by exploring how firms communicate important human capital factors in unconventional disclosure platforms such as job postings.

Our results should also be of interest to practitioners and managers. While writing effective job postings is a critical step in recruiting talent, many firms underinvest and write ineffective postings (Allie, 2016; Thorp, 2022). This challenge is further evidenced in the rapid growth of AI-augmented job description software focused on improving job posting languages such that it better reflects a firm's values and culture (Misa, 2021).¹¹ Our study provides some of the first large-scale empirical evidence quantifying the benefits of crafting job postings in a way that effectively conveys a firm's culture.

¹¹ For example, Textio and Talvista are two companies that develop such software. Textio notes that one of its goals is to provide “employers the words they need to attract the people they want to hire, using language that reflects the very best values and culture.”

2. Prior Literature and Hypothesis Development

2.1 Prior Literature

Our objective is to provide evidence on how firms communicate culture through their job postings and the effects of this information on hiring outcomes. Broadly speaking, prior studies define corporate culture as an intangible asset that represents the shared assumptions, values, and beliefs that inform employee behavior (Kreps, 1990; Schein, 1990; O'Reilly and Chatman, 1996). Corporate culture is difficult to measure or describe, particularly for outsiders to the firm (Guiso et al., 2008). Given these challenges, the literature has established a variety of frameworks and methodologies for examining and measuring culture.

Several studies infer corporate culture based on the behavior of senior executives in the firm. Biggerstaff et al. (2015) show that CEOs who personally benefit from options backdating are more likely to misbehave in other ways. They interpret this evidence as being consistent with the firm maintaining an unethical corporate culture. Davidson et al. (2015) examine executives' behavior outside of the workplace as an indicator of culture and find that firms led by executives who own luxury goods and have prior legal infractions tend to have a greater likelihood of fraud. Liu (2016) uses the backgrounds of key company insiders to construct a measure of corporate corruption culture and shows that high corruption culture firms are more likely to manage earnings and commit fraud.¹² Pan et al. (2017) examine corporate risk culture (which is defined as leaders' preferences toward risk and uncertainty) and find that risk culture predicts corporate policies.

Beyond executives, other studies attempt to infer a firm's culture based on associations or patterns that cannot otherwise be explained by common observables. For instance, early research by Cartwright and Cooper (1993) argues that mergers and acquisitions fail because of incompatible

¹² Other studies, such as by Merkley et al. (2020), use similar methodologies to examine cultural diversity.

cultures. Cronqvist et al. (2008) document significant persistence in various investment and financing policies and attribute this to corporate culture. Fahlenbrach et al. (2012) examine why banks are prone to perform poorly during crises. The study argues that similarities between the 1998 crisis and the 2008 global financial crisis are attributable to banks' risk cultures. Pacelli (2019) documents an association between unethical behaviors in unrelated divisions within banks and interprets this as evidence of weak corporate culture.

The above studies generally adopt a broad definition of corporate culture. Complementing this line of research, recent work has further attempted to measure specific dimensions of corporate culture. Loughran and McDonald (2016) examine "trusting corporate cultures" by measuring the prevalence of 21 trust-related words in the Management Discussion and Analysis section of the annual report. They find that trusting cultures frequently use audit- and control-type words and exhibit increased share price volatility. Guiso et al. (2015b) analyze corporate websites to study which dimensions of corporate culture relate to firm performance. They find that proclaimed values are not associated with performance but that actual values, as reflected in employees' assessment of managers' trustworthiness and ethics, do predict performance. More recently, Li et al. (2021) extend this framework to earnings call transcripts and show that corporate culture correlates with various business outcomes. As discussed in Section 3, our study builds on this literature and adopts a multi-dimensional view of corporate culture in line with Guiso et al. (2015b) and Li et al. (2021).

In sum, the above discussion highlights the challenges associated with defining and measuring corporate culture. An underlying conjecture in our study is that corporate culture matters to employees when choosing a job. Thus, there may be a demand for firms to provide relevant culture information in job postings.

The notion that corporate culture is important in employee job search is well supported by prior research. For example, practitioner articles indicate significant recruiting benefits for companies that promote culture in job postings, with some arguing that describing culture is more effective than specifying required skillsets (e.g., Wagner, 2018; Johnson, 2020). More broadly, prior research examines how individuals sort into jobs based on their preferences and skills (e.g., Roy, 1951) and provides evidence on how intrinsic nonwage factors can influence job search, suggesting an important role for culture in job search (Akerlof and Kranton, 2005; Bénabou et al., 2011; Card et al., 2012; Hedblom et al., 2019; Ashraf et al., 2020).

Recent studies directly examine the value of culture to employees. For example, Ghoshsamaddar et al. (2021) argues that a strong culture helps retain employees. The authors examine a regulatory shock that increases employee mobility in Illinois and find that firms with strong cultures post fewer jobs and offer lower salaries than those with weak cultures following this event. Gadgil and Sockin (2020) use a sample of corporate scandals and show that negative reputation shocks decrease worker sentiment, largely because of diminished perceptions of management and culture. These scandals also increase the difficulty that firms face in filling job vacancies. Similarly, Lee et al. (2020) study employee perceptions following tax avoidance news (which is indicative of cultural problems) and find that this news harms employee perceptions of firms. In addition, Jeffers and Lee (2019) develop a measure of corporate culture using coworker connectivity on LinkedIn and show that firms with strong cultures depend less on explicit contracts to retain human capital. Finally, survey evidence also indicates that more than 50% of job seekers believe that culture is as important as salary when evaluating job prospects (Estrada, 2020).

To our knowledge, limited research examines how firms *directly* communicate culture to job seekers.¹³ Instead, prior studies focus almost exclusively on the usefulness of alternative information providers in conveying information about culture to stakeholders of the firm (including job seekers). In particular, the focus has largely been on job review sites, such as Glassdoor and Indeed, where former and current employees can rate employers.

In general, prior studies suggest that job review sites provide useful information. Huang et al. (2019) show that employee outlook on Glassdoor predicts operating performance. Chemmanur et al. (2019) find that higher average employee ratings are associated with greater stock returns around equity issuance announcements. Hales et al. (2018) show that employee opinions predict key financial statement information, earnings surprises, and management forecasts news. Similarly, Green et al. (2019) shows that firms experiencing improvements in crowdsourced employer ratings outperform those that experience declines. Outside of the equity market context, Campbell and Shang (2021) show that information from Glassdoor predicts corporate misconduct risk. Fan et al. (2019) explore the role of employee reviews in the debt market setting, demonstrating that such information impacts loan spreads. Finally, Dube and Zhu (2021) demonstrate that firms understand the importance of employee reviews. The study exploits the staggered timing of first-time reviews on Glassdoor as a shock to workplace transparency and finds that firms improve their workplace practices after receiving Glassdoor reviews to remain competitive in the labor market.

Importantly, there is also growing evidence to suggest that there are limitations to the information provided by social media information intermediaries. Karabarbounis et al. (2018) examine how well data on user-entry salaries and industry employment shares from Glassdoor compare with data from the Quarterly Census for Employment and Wages (QCEW). They show

¹³ One notable exception is the work of Grennan (2020), who examines the performance implications of banks communicating their culture consistently across stakeholders.

that wages appear to be highly correlated with QCEW wages but that industry employment shares differ substantially. Gadgil and Sockin (2020) find that, although job seekers find negative information about prospective employers more useful, reputation concerns can reduce the quality and value of information on Glassdoor. Recent work by Marinescu et al. (2018) also suggests issues related to selection bias on Glassdoor. They find that voluntary reviews exhibit different distributional properties than do incentivized ones.

2.2 Hypothesis Development

Our central prediction is that making culture information salient within job postings can help companies attract job seekers and fill employment vacancies more quickly and efficiently. The job posting provides an important opportunity for firms to communicate benefits and requirements associated with a position. Job seekers also face limited time and attention, with some estimates suggesting that the typical job seeker applies to 21 to 80 positions and spends only a few minutes reviewing each posting (Morgan, 2020; Kolmar, 2023). The information contained within job postings may thus be less costly to collect and process than information contained from other sources, such as corporate website and job review sites. In addition, external sources present at least two limitations. First, job review sites often require job seekers to input a review before they can observe reviews through a so-called “give-to-get” model (e.g., Dube and Zhu, 2021), which further increases information collection costs. Second, external sources may contain information that is less relevant for a given position. For example, job review sites may contain descriptions of jobs at different locations or roles within a firm. Corporate websites may also be “too vague” or contain information that is more relevant for other stakeholders (such as customers or investors). These information sources may not be equipped to communicate distinct subcultures with a firm (Jones, 1983; Sackmann, 1992; Hofstede, 1998).

We expect that companies providing culture information can better attract workers and reduce the time required to fill a position. First, culture information allows workers to sort into companies and positions that are a better cultural fit. Such sorting can be useful as the average corporate job opening receives 250 applications (Kolmar, 2023). Culture information can help limit the pool of candidates to only those that believe they are a good fit for the position, thus reducing the number of candidates that need to be interviewed and making the job vacancy period shorter and generate higher acceptance rates.

Second, regardless of an employee's cultural preferences, culture information can simply signal that the firm is a reputable employer that values employee satisfaction. Such satisfaction can be related to positive work environments, effective management styles, and a commitment to employee growth and development, among other factors (Nohria et al., 2008; Helliwell and Huang, 2010; Maestars et al., 2018).

We note that our prediction is not without tension. Support for the null is grounded in the argument that salary may ultimately be the most important element of a job posting and other factors are second-order. For example, a recent Glassdoor study suggests that 67% of job seekers cite salary as a top factor (Glassdoor, 2018). The expansion of state-level regulatory initiatives mandating salary disclosures in job postings further highlights the importance of wage information (Liu, 2022). In addition, workers may also be sufficiently informed about culture through other sources, thus rendering job postings ineffective. It is thus not clear whether and to what extent culture information will impact hiring outcomes.

3. Data, Variable Measurement, and Univariate Statistics

3.1 Measuring Corporate Culture Information

We adopt a semi-supervised machine learning approach to measure the extent to which firms describe their corporate culture in job postings. As culture is multi-dimensional, we focus on the five most common cultural values that firms highlight on their corporate websites (Guiso et al. 2015b). These values include innovation, integrity, respect, teamwork, and quality.

We obtain job posting data from the Burning Glass Institute for the period January 1, 2010, to Dec 31, 2020. The Burning Glass Institute provides the employer's name which allows us to match the firm to Compustat. We retain only job postings that contain more than 100 words. Our primary sample contains approximately 25 million job postings, which are issued by 4,911 firms. We use the Stanford CoreNLP package (Manning et al., 2014) to parse the text contained within the job posting.

The key challenge in measuring corporate culture is that companies discuss culture in subtle and nuanced ways that evolve over time. To circumvent this challenge, we manually identify seed words that reliably define each cultural value and then adopt a machine learning approach (word embedding) to automatically expand the seeds words to high-quality dictionaries that are specifically applicable to the job posting context (Mikolov et al., 2013).

Specifically, we construct a list of seed words for each cultural value based on Guiso et al. (2015b) and Li et al. (2021). We adjust their seed word lists to make them more applicable to the job posting context. For example, "diversity" (a seed word listed under "Respect") is excluded in Li et al. (2021) because it is more likely to describe a diversification strategy in the conference call context. However, in the job posting setting, it is reasonable to retain "diversity" as a seed word for "Respect" because it almost always refers to a firms' DEI initiatives.

Then, we use the *gensim* library in Python to train the word embedding model (i.e., *word2vec*), which allows us to determine synonyms of seed words and thus identify a broader set of words (phrases) that describe each cultural value.^{14,15} For example, when we construct the culture dictionary for “Teamwork” using this method, we can identify not only words commonly associated with teamwork but also euphemistic and less-frequent phrases, such as “share best practices”. Finally, we manually check the dictionary and exclude words that do not fit.¹⁶ Appendix A lists the most common words in the final dictionary for each cultural attribute.

After obtaining accurate and comprehensive dictionaries from the machine learning model, we then measure each cultural value of a job posting by the weighted count of the number of words associated with each value divided by the total number of words in the document. We calculate the weight using term frequency-inverse document frequency, or “*tf-idf*”, to account for the importance and prevalence of a word both within the posting and across the corpus. We apply the weight to adjust for certain words appearing more frequently, as this weight increases with the number of times a word appears in a document and decreases with the number of documents in the corpus that contain the word.

¹⁴ The word embedding model allows us to use unique numeric vectors to represent the meaning of each word. For example, consider the examples “King” and “Queen” which are both defined rulers but differ in gender. The meaning of each word can be represented by a three-dimensional vector (human, ruler, gender), where human is an indicator for a human being, ruler is an indicator for a monarch, and gender is an indicator for male. “King” can thus be represented as a vector equal to (1,1,1) and “Queen” can be represented as a vector equal to (1,1,0). The two words would be considered “synonyms” because their cosine similarities are high (0.82).

¹⁵ To increase the efficiency of the training (i.e., assigning a semantic vector to each word), we use a proportional stratified random sample of one million job postings, where the number of postings drawn for each company is proportionate to its share of job postings in the whole sample. To generate the culture dictionary, we compute the cosine similarity between the vector of each word and the vector representing each cultural value, for which we then select the 500 words for each cultural value with the closest meaning.

¹⁶ For example, we exclude common words such as “every” and “think” and several proper nouns (e.g., entity names) from our list.

Job seekers likely ascribe different weights to cultural values based on their preferences (Sull et al., 2020). Therefore, our primary analyses follow Graham et al. (2022) and Li et al. (2021) and use a composite score for the five cultural dimensions, *Job Culture*. This score is equal to the sum of the five cultural dimensions, and thus captures the extent to which firms describe their culture in job postings. To ease interpretation, we standardize the five culture variables and the composite culture score to have a mean of zero and a standard deviation of one. We also consider two alternative measures that requires firms to provide high levels of culture information on each dimension. We define the variable, *Job Culture-Count High*, as the number of cultural dimensions with the culture scores among the top 30% of the sample distribution and the variable, *Job Culture-All High*, as an indicator variable that equals one if the culture scores of all five dimensions is above 30% of the sample distribution.

3.2 Employee Inflow Data

Our primary outcome variable captures employee inflow using data from Revelio Labs. The firm estimates employee inflow and outflow data from a variety of sources, including online professional profiles, resumes, and government data (Fadhel et al., 2022). We obtain these data at the monthly level for all firms and locations in our sample. Our main analyses aggregate the inflow data to a Firm-MSA-Quarter panel to approximate inflow in an establishment of a firm.¹⁷ The variable *Inflow* is defined as the average number of employees joining the Firm-MSA in a given quarter scaled by the total number of employees in the Firm-MSA at the beginning of the quarter.¹⁸

¹⁷ The Firm-MSA-Quarter panel is a reasonable approximate for an establishment, as most firms do not have more than one plant or facility in an MSA. We drop 2.7% of job postings where MSA is missing.

¹⁸ In Section 6.1, we also consider a robustness test where we aggregate the data to the Firm-MSA-SOC-Quarter level. Our primary analyses rely on the Firm-MSA-Quarter level aggregation since most Firm-MSA-Quarter pairs in our sample only have one or two SOC categories.

3.3 Other Variables

Our analyses include a wide set of controls to account for firm-level and geographical factors that may relate to job postings and labor market outcomes. In addition, our analyses also control for other relevant job posting attributes. Our firm-level controls include firm size, profitability, leverage, market-to-book ratio, and the percentage of intangible assets. Our job-level controls include the number of words in the job posting, requirements on education, experience and skills, the number of job postings released in the current quarter, and the percentage of job postings with non-missing salary information.

In subsequent analyses, we incorporate several additional datasets. These include data on employee reviews from Glassdoor (Campbell and Shang, 2021), employee violations from Good Jobs First' Violation Tracker (Heese et al., 2021), and measures of labor-related risk issues from RepRisk AG (Gantchev et al., 2019). Detailed variable definitions can be found in Appendix B.

3.4 Descriptive Statistics

Figure 1 illustrates the time series trend in culture scores. The figure indicates a steady increase in the intensity in which firms discuss corporate culture in their job postings. This likely reflects increased attention to and interest in culture from job seekers in recent years.

Given that our data is organized by location, we also explore geographical heterogeneity in our measure. Figure 2 presents the average composite culture score at the county-level across our sample period. Darker (lighter) colors indicate areas in which job postings focus more (less) on culture. The figure suggests that jobs located in coastal states with major metropolitan areas, such as California and the Northeast, contain job postings with the most intense cultural focus. In contrast, job postings for firms located in the Midwest emphasize culture far less.

We also explore occupation heterogeneity. In Figure 3, we sort occupations based on the prevalence of culture discussions in their job postings. To classify occupations, we use the 2018 Standard Occupational Classification system (SOC), a statistical standard used by federal agencies to classify workers into occupational categories. The figure suggests that job postings for management, legal, and computer and mathematical positions highlight culture the most. In contrast, job postings for construction and extraction, building and grounds cleaning and maintenance, and transportation and material moving emphasize culture far less.

To better assess the primary sources of variation in the provision of culture information, we employ a variance decomposition framework. We conduct this analysis at the job-posting level (i.e., the unit-of-observation is a single job posting). Formally:

$$Job\ Culture_{f,t,i,s,c} = \gamma_f + \delta_m + \xi_i + \eta_s + \delta_c + \epsilon_{f,t,i,s,c}, \quad (1)$$

where f indexes firm, t indexes date, m indexes month, i indexes industry, s indexes occupation, and c indexes county.¹⁹ The dependent variable *Job Culture* is the composite culture score discussed above. As discussed below, we also consider alternative decompositions similar to this model that include interactive fixed effects.

We report the estimates of equation (1) in Table 1. Each row presents the adjusted R^2 from a regression of *Job Culture* on the corresponding fixed effects. The table indicates several interesting trends. First, with respect to independent fixed effects, firm fixed effects explain most of the variation in our culture measure, accounting for approximately 29% of the variation. Occupation also matters, as SOC codes explain 24% of the variation in *Job Culture*. In contrast, location and time appear less meaningful. As we examine interactive fixed effects, we find that

¹⁹ We examine county-level variation in these analyses because the county is the finest geographical unit in the job posting sample. In our main analysis, we aggregate the data to the MSA level to align with how Revelio compiles its employee inflow data.

most of the variation in *Job Culture* is explained by Firm-SOC interactive fixed effects. These fixed effects, which essentially capture a job function within a firm, account for nearly 52% of the variation in the dependent variable. One interesting takeaway from this analysis is that the use of culture language in job postings appears to vary substantially within firm, as Firm-Month fixed effects only explain 39% of the variation in *Job Culture*. Overall, this analysis combined with the graphical evidence above suggests that job posting language is far from boilerplate. Instead, culture information embedded in job postings appears to be more specific than the culture information provided through traditional external sources, which are often at the firm-level. In other words, firms appear to craft job postings uniquely for certain positions or job types.

[Insert Table 1 Here]

Table 2 reports the summary statistics for the sample, where the unit-of-observation is a Firm-MSA-Quarter pair. The main variable of interest, *Inflow*, is economically small in our sample, with mean (median) levels of 3.2% (1.2%). We note that we do not observe a firm's demand for labor, and *Inflow* simply reflects ex post employee growth, without considering the number of employees a firm seeks to hire in a given quarter. Our subsequent analyses control for labor demand by including a measure of the number of job postings in a quarter.

[Insert Table 2 Here]

4. Culture Information and Employee Inflows

4.1 Empirical Framework

Our main analyses assess whether the culture information embedded in job postings is associated with increased employee inflow. For these tests, we aggregate culture scores to the Firm-MSA-Quarter level to align with our inflow measure. We then estimate the following regression:

$$Inflow_{f,m,t} = \beta_1 Job\ Culture_{f,m,t-1} + Controls + \chi_{f \times m} + \psi_{m \times t} + \varepsilon_{f,m,t}, \quad (2)$$

where f indexes firm, m indexes MSA, and t indexes quarter. *Inflow* is the number of new employees at a Firm-MSA scaled by the total employees at the Firm-MSA pair at the beginning of the quarter. *Job Culture* is the composite culture score aggregated at the Firm-MSA-Quarter level. *Controls* is a vector of variables that includes employers' requirements on education and work experience, the length of the job posting, the number of job postings in the current quarter, the number of skill requirements, and the percentage of job postings with available salary information. The model also includes firm-level control variables, including firm size, ROA, leverage, market-to-book ratio, and intangible intensity. While we vary the fixed effects across models, our most stringent specification controls for time-invariant establishment heterogeneity through the inclusion of Firm-MSA fixed effects ($\chi_{f \times m}$) and time-varying local characteristics through the inclusion of MSA-Quarter fixed effects ($\psi_{m \times t}$). We also consider a host of alternative fixed effects structures, including Firm-Quarter fixed effects, which control for time-varying firm-level heterogeneity. Standard errors are two-way clustered at the firm and MSA levels.²⁰ If culture information helps attract workers and improve inflows, we expect β_1 to be positive.

4.2 Main Results

Table 3 provides the results from regressions of employee inflow on culture information (equation (2) above). We consider several different empirical models. In Column (1), we first consider a model with only firm-level control variables. The coefficient on *Job Culture* is positive and significant at the 1% level, suggesting that culture information in job postings is positively associated with subsequent employee inflow. In terms of the economic magnitude, a one-standard-

²⁰ In untabulated tests, we find that our results are robust to other standard error clustering, including: (1) Firm; (2) Firm-MSA (3) Firm-MSA and Quarter; and (4) Firm, MSA and Quarter level clustering.

deviation increase in *Job Culture* is associated with 0.46% increase in inflow, representing a 38% increase, relative to the unconditional sample median.²¹

In Column (2) through (4), we augment the model with additional controls and fixed effects. First, in Column (2), we include control variables related to job postings as well as MSA-Quarter fixed effects and Firm-Quarter fixed effects, with the latter subsuming firm-level control variables (as they account for any time-varying firm heterogeneity). The coefficient on *Job Culture* remains positive and significant at the 1% level, and the economic magnitude is about half of that in column (1). In Column (3), we include firm controls and replace MSA-Quarter and Firm-Quarter fixed effects with Firm-MSA and Quarter fixed effects, allowing us to further control for time-invariant heterogeneity at the Firm-MSA level. Finally, Column (4), our most stringent specification, includes Firm-MSA and MSA-Quarter fixed effects, to account for time-invariant Firm-MSA and local trends. The coefficient on *Job Culture* remains positive and significant at the 1% level in Columns (2) through (4), with similar magnitudes. Specifically, a one-standard-deviation increase in culture disclosure in job postings is associated with an approximately 0.20% higher level of inflow, which represents a 16.2% increase, relative to the unconditional sample median.

In Panels B and C, we consider alternative culture measures. We re-estimate equation (2) and replace *Job Culture* with two alternative measures. The first one is *Job Culture-Count High*, which is the number of cultural dimensions with a culture score among the top 30% of the corresponding year. The second one is *Job Culture-All High*, which is an indicator variable that equals one if the culture scores are among the top 30% for all five cultural dimensions. Panel B presents the results for *Job Culture-Count High*. Our models with Firm-MSA and MSA-Quarter fixed effects indicate that providing high levels of culture on one additional dimension generates

²¹ We use the sample median instead of mean to assess the economic magnitude, because the distribution of *Inflow* is highly skewed.

a 0.10% increase in employee inflow, which represents an 8% increase relative to the unconditional sample median. Panel C presents the results for *Job Culture-All High*. The estimates in Column (4) suggest that top culture job posting (across all cultural dimensions) generates a 0.20% higher level of inflow, which represents a 17% increase, relative to the unconditional sample median.

[Insert Table 3 Here]

We next examine the dynamic effects of culture information in job postings. Doing so helps alleviate concerns that firms might have already experienced increased inflow prior to information being disclosed in job postings, thus suggesting that the effects we document are unrelated to the disclosure per se. Table 4 provides the results of analyses that consider *Inflow* measured from quarter $t-1$ through $t+4$. In Column (1), we measure inflow in the previous quarter as the dependent variable. We find that the coefficient on *Job Culture* is insignificant, indicating that culture information in job postings is not associated with prior period employee inflow. This suggests that increases in inflow are not driven by information arriving prior to the job posting. In Column (2), we present results from employee inflow in the current quarter as the dependent variable. We find that the coefficient on *Job Culture* is positive and significant at the 5% level, indicating that culture discussions in job postings are associated with current period employee inflow, albeit at magnitudes smaller than our baseline effects measured at $t+1$ (Table 3, Column (4)). Columns (3) through (6) report the results when we use employee inflow in the following four quarters as the dependent variable, respectively. We find that the coefficient on *Job Culture* is positive and significant when we examine inflow during the following two quarters, and the magnitude is decreasing over time.

[Insert Table 4 Here]

Overall, the evidence thus far suggests that job postings providing cultural information are associated with significantly higher levels of employee inflow. These results suggest that making culture information salient within the job posting help companies attract job seekers.²²

5. Mechanism Tests

Having established a robust relation between culture information in job postings and employee inflow, we next consider tests that assess the mechanisms for our findings. In the first test, we examine the role of information asymmetry that a job seeker faces with respect to learning about a firm's corporate culture. The next two sets of analyses explore two possible economic channels: cultural fit and signaling. In the last test, we validate the underlying assumption that culture information on job postings is credible to job seekers.

5.1 *The Role of Information Asymmetry*

First, we explore the role of information asymmetry that a job seeker faces with respect to learning about a firm's corporate culture. As discussed in Section 2, there are various alternative sources of information that a job seeker can consider when learning about corporate culture. We expect job postings to have a weaker effect on attracting employees when these alternative sources of information are more prevalent and useful, as this would reduce the information asymmetry a job seeker faces in learning about corporate culture.

To test this conjecture, we re-estimate equation (2) and interact *Job Culture* with proxies for information asymmetry. We consider three proxies for information asymmetry. First, we consider facility (i.e., Firm-MSA) size, under the assumption that larger facilities are generally more visible in the local community, thus reducing information asymmetry. The next two proxies

²² To mitigate the concern that our culture measure might just capture positive tone in job postings which might drive employee inflow, we control for the tone of job postings, *Tone*, and re-estimate equation (2). Untabulated results suggest that the coefficients on *Tone* are positive and significant at the 5% level. However, the coefficients on *Job Culture* remain positive and significant at the 1% level.

are based on employee reviews on Glassdoor, a popular job review platform. We expect that job seekers face lower information asymmetry when a firm has available reviews on Glassdoor or reviews that are generally considered helpful by Glassdoor users.

Table 5 presents the results for our information asymmetry tests. For each information asymmetry proxy, we report the results based on two sets of fixed effects structures. The first is based on Firm-MSA and Quarter fixed effects, and the second one is based on Firm-MSA and MSA-Quarter fixed effects.

Columns (1) and (2) report the results based on facility size. We define *Large Facility* as an indicator variable that equals one if the total number of employees of a facility is in the top 30% of the sample distribution in the quarter, and zero otherwise. We find the coefficients on *Large Facility* \times *Job Culture* to be negative and significant at the 1% level. The results suggest that culture information in job postings has a weaker effect on attracting employees when the facility is large and culture information about the facility is presumably more available.

Columns (3) and (4) reports the results based on the number of employee reviews on Glassdoor. We define *More Reviews* to take the value of one if the number of reviews on Glassdoor for the facility in the past year is in the top 30% of the sample distribution, and zero otherwise. The coefficients on *More Reviews* \times *Job Culture* are negative and significant at the 5% level and 1% level, suggesting that culture information in job postings has a weaker effect on attracting employees when there are more reviews on Glassdoor.

Panel C reports the results based on the helpfulness of reviews on Glassdoor. We define *High Helpfulness* to take the value of one if the average helpfulness of reviews is in the top 30% on Glassdoor, and zero otherwise. The coefficients on *High Helpfulness* \times *Job Culture* are negative and significant at the 1% level, suggesting that culture information in job postings has a weaker

effect on attracting employees when the reviews on Glassdoor are more helpful. Overall, the above results suggest that culture information in job postings does indeed have a weaker effect on attracting employees when job seekers have access to useful alternative information sources about firm culture.

[Insert Table 5 Here]

5.2 Cultural Fit Channel

Our next set of empirical analyses explore the two channels through which culture information can impact employee inflow. The first one is the cultural fit channel, which suggests that culture information attracts workers with certain preferences. The second one is the signaling channel, which suggests that culture information in job postings can provide a signal of whether a company generally fosters employee growth and has policies that are employee friendly (e.g., opportunities for career development and promotion).

We start by exploring the cultural fit channel, which suggests that culture information in job postings helps employees sort into companies and positions that culturally align with their preferences. We acknowledge that, absent information on job seekers' preferences, we cannot fully assess how each cultural value attracts certain job seekers. To circumvent this challenge, we use the Black Lives Matter (BLM) movement as a plausibly exogenous shock that increase job seekers' preferences for certain cultural values. The recent BLM protests, which started at the end of May 2020, represent the largest social movement in U.S. history (Buchanan et al., 2020). This movement plausibly increased jobseekers' preferences for cultures valuing "Respect", as this dimension reflects activities related to diversity, equity, and inclusion (Li et al., 2021). We thus expect culture information related to "Respect" to have a stronger effect on attracting employees

following BLM. In contrast, less relevant dimensions of culture (such as “Quality”) should not be associated with meaningful increases in inflows following BLM.

To test this conjecture, we define BLM as an indicator equal to one for the months between June 2020 and December 2020 and zero for the months between November 2019 and May 2020. We then estimate the following interactive regression:

$$Inflow_{f,m,t} = \beta_1 BLM_t \times Respect_{f,m,t-1} + \text{Controls} + \chi_{f \times m} + \psi_{m \times t} + \varepsilon_{f,m,t}, \quad (3)$$

where f indexes firm, t indexes month, and m indexes MSA. The independent variable $Respect$ is the standardized culture score for the $Respect$ value. If job postings with more information related to respect attract more employees after the BLM movement, we expect β_1 to be positive and significant.²³ We also conduct a placebo analysis where instead of using $Respect$, we use the sum of the standardized scores of the four cultural values other than $Respect$, i.e., *Other Culture*, as the independent variable. We expect β_1 to not be significant in this placebo test.

We present the results for the cultural fit test in Table 6. The coefficient on $BLM \times Respect$ is positive and significant at the 5% level, suggesting that cultural information about respect in job postings has a more pronounced effect on attracting employees following BLM. In terms of the economic magnitudes, a one-standard deviation increase in $Respect$ is associated with 0.06% greater increase in inflow after the BLM movement, or a 29% increase relative to the median value of $Inflow$ in this subsample (median = 0.21%).²⁴ On the contrary, we do not find a similar effect for information on other cultural dimensions. These results are consistent with the cultural fit

²³ The main effect on BLM is subsumed by the MSA-Quarter fixed effects.

²⁴ The main effect on $Respect$ is not significant, indicating that in the short period leading up to BLM, job seekers did not respond to the culture information related to $Respect$ in job postings. However, in untabulated analyses, we confirm that culture information related to $Respect$ in job postings is positively associated with higher inflow across the full sample period.

channel, which suggests that culture information in job postings is helpful for job seekers when searching for jobs that are aligned with their preferences.

[Insert Table 6 Here]

To further assess the cultural fit channel, we utilize detailed data on interview reviews from Glassdoor. If culture information in job postings facilitates better matching between employers and job seekers, we expect that employers are more likely to extend offers and job seekers are more likely to accept offers after culture information is provided in job postings. To test this prediction, we estimate the following model at the firm-quarter level:

$$Interview\ Outcome_{f,t} = \beta_1 Job\ Culture_{f,t-1} + Controls + \delta_t + \xi_i + \varepsilon_{f,t}, \quad (4)$$

where f indexes firm, t indexes calendar quarter, and i indexes industry group. *Interview Outcome* $_{i,t}$ is one of three variables: 1) *Interview Culture* $_{i,t}$ is the percentage of interviews that mention culture; 2) *Offer Rate* $_{i,t}$ is the share of interviews that result in a job offer; and 3) *Accept Rate* $_{i,t}$ is the percentage of interviewees that accept the offers if granted. *Job Culture* is the sum of the standardized culture scores of five specific dimensions.

We report the results in Table 7. Panel A presents the summary statistics of the sample used in this analysis. On average, during 2.1% interviews, employers mention culture to job seekers. In addition, 38.7% interviews result in offers and 80.2% interviewees accept the offers if granted. Panel B presents results from estimating Eq. (4). In Column (1), we first examine the relation between interviews mentioning culture and job postings highlighting culture. The dependent variable in this model is *Interview Culture*. We find that the coefficient on *Job Culture* is positive and significant at the 1% level. This result helps validate that firms highlighting culture are focused on finding the best fit employee and are more likely to communicate culture during interviews. In Column (2), when using *Offer Rate* as the dependent variable, we find that the

coefficient on *Job Culture* is positive and significant at the 1% level. In terms of economic magnitude, a one-standard-deviation increase in *Job Culture* is associated with a 4.8% increase in *Offer Rate*. In Column (3), when using *Accept Rate* as the dependent variable, we also find that the coefficient on *Job Culture* is positive and significant at the 5% level. A one-standard-deviation increase in *Job Culture* is associated with a 5.3% increase in *Accept Rate*. Overall, the results from Table 7 suggest that culture information in job postings is positively associated with both offer and acceptance rates, suggesting that such information facilitates better matches and reduces search costs for the firm.

[Insert Table 7 Here]

5.3 Signaling Channel

Next, we explore the signaling channel. This channel suggests that culture information will be associated with other external indicators of employee-friendly workplaces, including fewer employee-related violations and higher external ratings. To test the prediction, we estimate the following model at the firm-quarter level:

$$Culture\ Outcome_{f,t} = \beta_1 Job\ Culture_{f,t} + Controls + \delta_t + \xi_i + \varepsilon_{f,t}, \quad (5)$$

where f indexes firm, t indexes calendar quarter, and i indexes industry group. *Job Culture* is the composite culture score, aggregated to the Firm-Quarter level. *Culture Outcome* is one of four alternative measures that can indicate whether a company is a high-quality employer. The first and second are the average employee overall and culture-related ratings on Glassdoor (*Glassdoor Overall* and *Glassdoor Culture*), respectively, measured at the calendar-quarter level. The third is a measure of employee violations, where higher values indicate worse culture (*Violations*). The fourth is a measure of labor-related risk issues (*Labor Risk*). Controls is a vector of control variables that includes the length of job postings, the percentage of job postings with non-missing

salary information, firm size, ROA, leverage, market-to-book ratio, and intangible intensity. We also include Industry and Quarter fixed effects. Standard errors are two-way clustered at the firm and quarter levels. If job postings credibly signal the company is a strong employer, we expect the job review measures to be positively associated with our culture measure. Similarly, we expect labor-related violations and risk issues to exhibit a negative association with our culture score.

Table 8 reports the results. Panel A reports the descriptive statistics for the main variables used in this aggregated sample. An average firm receives an Overall Glassdoor rating and a Glassdoor Culture rating of 3. In addition, a typical firm experiences less than one labor-related violation per year.

Panel B presents the results from estimating equation (4). In Columns (1) and (2), the coefficients on *Job Culture* are positive and significant at the 1% level, indicating that culture information in job postings is positively associated with overall and culture-related ratings from Glassdoor. In Columns (3) and (4), the coefficients on *Job Culture* are negative and significant at the 1% level and 5% level, respectively, indicating that culture information in job postings is negatively associated with labor-related violations and risk issues. Overall, the results from Table 8 suggest that culture information is associated with other external indicators of employee-friendly workplaces, including higher external ratings and fewer employee-related violations, signaling that the company is a strong and reputable employer.

[Insert Table 8 Here]

5.4 Information Credibility

An important assumption underlying our study is that culture information embedded in job postings is credible. We assess the validity of this assumption through two additional analyses utilizing data on employee outflows (instead of inflows).

We start by exploring the relation between *Job Culture* and subsequent employee outflows. If culture information in job postings helps job seekers credibly assess a firm's culture, one might expect employees that are attracted to firms promoting culture to experience greater satisfaction and be less likely to quit. Note that this conjecture is difficult to test in our data, as we cannot readily observe an employee's job path. Instead, we indirectly explore this issue by examining the general association between culture information and outflow trends. We re-estimate equation (2) but replace *Inflow* with *Outflow* (scaled by the number of employees) in the previous quarter ($t-1$) and current quarter (t) as well as the subsequent four quarters ($t+1$ through $t+4$) as the dependent variable, respectively.

Table 9, Panel A reports the results for horizons extending from $t-1$ to $t+4$. In Columns (1) and (2), the coefficients on *Job Culture* are insignificant for $t-1$ and t , suggesting that culture information in job postings is not associated with employee outflows during the current and prior quarters. However, in Columns (3) through (6), the coefficients become negative and significant as we extend the horizon from $t+1$ through $t+4$, suggesting that culture information in job postings is negatively associated with employee outflow in the subsequent four quarters. These results are consistent with high *Job Culture* firms generally having greater job satisfaction and a reduced likelihood of departures among new employees.

In our second test, we use the outflow setting to demonstrate a potential cost to misrepresenting culture. We expect firms that advertise culture prominently but are subsequently revealed to have weak cultures (as measured by job reviews) to experience greater outflow. We define *Cultural Misrepresentation* as an indicator variable equal to one if the job posting culture score is in the top 30%, while the employee culture rating on Glassdoor is in the bottom 30% in either of the following two quarters. We regress employee outflow in the next quarter on the

cultural misrepresentation indicator. The results are reported in Table 9, Panel B. The coefficients on *Cultural Misrepresentation* are positive and significant at the 5% level, suggesting that firms that misrepresent their culture in job postings experience higher levels of future-period employee outflows.

[Insert Table 9 Here]

6. Robustness Tests

Our results thus far indicate a strong association between culture information in job postings and employee inflows. In our next set of analyses, we assess the robustness of our findings and address possible concerns across several dimensions.

6.1 Job-Level Analyses

We first test the robustness of our main analyses to an alternative research design. Our central prediction is that making culture information salient within the job posting will help companies attract job seekers, and ultimately fill employment vacancies more quickly and efficiently. Ideally, we would measure the effect of a job posting on the firm's ability to fill the corresponding job. However, since such information is unavailable, we rely on Firm-MSA-level analyses for our main tests. To alleviate concerns that this data structure generates measurement error, we conduct an alternative analysis that provides a tighter link between job postings and job inflows.

Specifically, we re-estimate our main analysis (which is at the Firm-MSA-Quarter level) at the job function level (Firm-MSA-SOC-Quarter level). This analysis allows us to better match worker inflows to the job vacancy posting, as the average Firm-MSA-SOC-Quarter observation in our sample only has 5.6 postings. We re-estimate equation (2) after aggregating culture and inflow measures at this finer level of aggregation.

The results from the job-level analyses are provided in Table 10. In general, our inferences remain unchanged, as the coefficients on *Job Culture* remain positive and significant at the 1% level or 5% level. In terms of the economic magnitude, the estimates in Column (4) indicate that a one-standard-deviation increase in *Job Culture* is associated with a 62% increase in inflows, relative to the sample median.²⁵ This analysis thus helps generate a stronger linkage between culture information in job postings and a firm’s ability to fill a specific vacancy.

[Insert Table 10 Here]

6.2 Entropy-Balancing

A potential concern for our study is that the effects we document may be driven by other contemporaneous information sources describing firm culture, instead of the culture information present on job postings. We argue that job postings contain incremental information about a firm’s culture and that job seekers respond to such information. While external sources (e.g., employee reviews) provide information on firm culture, collecting information from these websites may be costly, and the information may be of lower quality. In contrast, job postings can provide information that is more accessible, salient, and relevant.

Our analyses thus far address this issue in several ways. For example, our dynamic analyses demonstrate that the timing of culture information in job postings matters. In addition, our cross-sectional analyses also help alleviate this concern, as we find stronger effects when job seekers face higher information asymmetries in learning about culture from external information sources, thus highlighting the role of culture information in job postings.

To further mitigate the concern, we employ an entropy-balanced matching procedure to control for differences between firms that more prominently provide culture information in their

²⁵ The median level of *Inflow* is 0.15 for the Firm-MSA-SOC-Quarter panel.

job postings and those that do not provide such information.²⁶ Specifically, we match observations with *Job Culture* values in the top 30% of the sample distribution (Treated Sample) to observations in the rest of the sample (Control Sample) by assigning weights to each control observation and matching treated observations to control observations on the first and second moments of a wide set of measures. These measures include culture ratings from Glassdoor, education, experience, skill requirements, the overall length and number of job postings, salary disclosures, firm-level controls, and quarter and MSA dummies.²⁷ The weights are then used in the regression analysis. We re-estimate equation (2) and replace *Job Culture* with *Top Culture*, an indicator variable equal to one if *Job Culture* in the top 30% of the sample distribution, as the independent variable.

Table 11 reports the results from the entropy balancing analysis. Panel A shows the distributional properties of the Treated Sample and the Control Sample after entropy balancing. This table shows that this process results in no significant differences in any of the matching variables between the treated and control samples. Panel B presents the regression results with the weights we obtain from the entropy balancing procedure. The results indicate that the coefficients on *Top Culture* are positive and significant, suggesting that our main inferences remain unchanged. This result adds further credence to our claim that culture information in job postings (and not external culture information sources) leads to higher employee inflows.

[Insert Table 11 Here]

²⁶ In general, entropy balancing is superior to other forms of matching, as it re-weights observations in the control sample to ensure the moments of the distributions of the matching variables are the same between the treated sample and the re-weighted control sample. Prior studies indicate that entropy balancing is generally more effective than simple matching or propensity-score matching, since it relies on less restrictive assumptions and retains more information by allowing weights to vary smoothly across observations in a more flexible manner (e.g., Hainmueller, 2012).

²⁷ The sample is smaller in the entropy-balancing analyses as we require non-missing Glassdoor data. In untabulated analyses, we also find that our main results are robust to using a smaller sample and controlling for Glassdoor culture ratings.

6.3 The Role of Wage

Lastly, we examine how employees value culture when controlling for salary information. Job seekers may view culture information to be an alternative signal for high salary, which might induce a positive association between culture information and employee inflow that is unrelated to culture. Indeed, among the firms that do disclose salary in our sample, we find that culture scores and salary levels are positively correlated (untabulated). This result is consistent with recent work by Sockin (2022), who finds that high-paying firms are also firms in which employees indicate high levels of satisfaction. At the same time, it is not clear why high-salary firms do not directly disclose salary information if it helps them attract workers. In addition, some studies suggest that culture is an important nonwage attribute that can substitute for salary (e.g., Maestas et al., 2018).

To mitigate concerns related to salary, we consider models that control for either the advertised wage disclosed in job postings or the actual wage. Disclosing salary information is rare in our sample, which is perhaps unsurprising, given the recent increase in state-level mandates for such disclosure. For analyses examining disclosed wage, we thus focus on a subsample of observations that provide salary information in job postings. As noted earlier, only 8% of Firm-MSA-Quarter observations disclose wage information at least once in our sample, so this subsample is significantly smaller than the full sample used in the main analyses. We re-estimate equation (2) but replace the control variable *Salary Disclosed* with *Advertised Min Wage* and *Advertised Max Wage*, the natural log of minimum and maximum salaries disclosed in the job postings, respectively. We report the results from this analysis in Columns (1) through (4) of Table 12. In Columns (1) and (3), the coefficients on *Advertised Min Wage* and *Advertised Max Wage* are not significant. However, in Columns (2) and (4) the coefficients on *Job Culture* remain positive and significant at the 1% level after controlling for the disclosed minimum and maximum

wage in job postings. We further control for actual wage when such data is available in Revelio. Columns (5) and (6) present the results. In both Columns (5) and (6), the coefficients on *Actual Wage* are positive and significant at the 1% level. In Column (6), we continue to find the coefficient on *Job Culture* to be positive and significant at the 1% level after controlling the actual wage.

Overall, the results in Table 12 suggest that, after controlling for advertised salary and actual salary levels, culture information in job postings still positively affects inflow. These results indicate that job seekers view culture information to be distinct from salary information.

[Insert Table 12 Here]

7. Conclusion

Corporate culture represents one of the critical factors that job seekers consider when choosing a job. We provide the first examination of how firms craft their job postings to convey their cultures. Specifically, we examine the labor market effects of emphasizing corporate culture information in job postings. We use state-of-the-art machine learning methods to develop a comprehensive dictionary of cultural values and generate several important insights. First, culture information in job postings appears to attract job seekers. Such information is more useful when job seekers face higher information asymmetry in learning about culture. In addition, culture information appears to help job seekers sort into culturally fit firms and also signals that the company is a reputable employer and potentially a “great place to work” (e.g., high levels of employee satisfaction).

Our study contributes to the academic literature on corporate culture and employee job reviews. Our findings are also relevant in light of recent human capital disclosure requirements, suggesting an increased regulatory emphasis on disclosing information about important elements of human capital, such as culture. In addition, our study has practical implications. Put simply,

firms can benefit from highlighting their core cultural competencies in job postings, as doing so helps companies better attract key talent.

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Appendix A. Thirty Most Representative Words In the Cultural Dictionary

Cultural Values	Included Words
<i>Integrity</i>	integrity, accountability, transparency, accountable, ethical, organization, consistent, trust, continuous_improvement, core_value, transparent, ethic, reinforce, responsibility, stewardship, role_model, hold_accountable, governance, fairness, honesty, governance_process, guide_principle, highest_standard, steward, honest, governance_framework, credibility, compliance_program, responsible, oversight
<i>Teamwork</i>	teamwork, collaboration, collaborate, partnership, collaborative, cooperation, relationship, peer, cross-functional, interaction, leadership, interact, closely, foster, influence, cross-functionally, collaborative_relationship, partner, interface, partnering, build_relationship, contribute, liaise, cross-functional_team, cohesive, communicate, synergy, alliance, works_closely, works_collaboratively,
<i>Innovation</i>	innovation, innovative, innovate, passion, creative, creativity, excellence, passionate, inspire, idea, mindset, sustainable, best-in-class, data-driven, world-class, empower, learning, enthusiasm, product_innovation, thought_leadership, excellence, technology, operational_excellence, know-how, agility, enable, evolution, cutting-edge, entrepreneurial, innovative_thinking
<i>Respect</i>	respect, team, talent, leader, commitment, team_member, colleague, diverse, people, inclusion, diversity, embrace, share, teammate, inclusive, coaching, coach, collective, leadership_team, teammate, community, recognition, recognize, employee_engagement, thoughtful, talented, mentoring, team_player, workforce, staff
<i>Quality</i>	quality, customer_service, customer, engage, client, focus, engagement, deliver, mission, effort, resource, advocate, stakeholder, supplier, customer_experience, proactive, support, vendor, customer_satisfaction, service, internal_stakeholder, key_stakeholder, support_team, business_team, communication, solution, dedication, high quality, service delivery, operation team

Appendix B. Variables Definitions

Variables	Definitions
<i>Variables from Burning Glass:</i>	
<i>Job Culture</i>	The sum of the scores for five specific culture dimensions (Integrity, Teamwork, Innovation, Respect, and Quality). Each dimension of culture scores is standardized to have mean of zero and a standard deviation of one.
<i>Top Culture</i>	An indicator variable that takes the value of one when <i>Job Culture</i> is in the top 30%, and zero otherwise.
<i>Job Culture-Count High</i>	The number of cultural dimensions with culture score among the top 30% of the corresponding year.
<i>Job Culture-All High</i>	An indicator variable that equals 1 if the culture scores are among the top 30% in all five cultural dimensions, and zero otherwise.
<i>Education</i>	Minimum education level (in years) listed in job postings.
<i>Experience</i>	Minimum experience level (in years) listed in job postings.
<i>Hiring Intensity</i>	The natural log of the total number of job postings published by the focal firm for a specific occupational position at a specific county in a given quarter.
<i>Length</i>	The natural log of the total number of words in a job posting.
<i>Skill Count</i>	The number of skills required in a job posting.
<i>Salary Disclosed</i>	The percentage of job postings with available salary information
<i>Log Salary</i>	The natural log of the minimum salary disclosed in a job posting.
<i>Variables from Revelio:</i>	
<i>Inflow</i>	The level of employee inflow scaled by the total number of employees, multiplied by 100.
<i>Outflow</i>	The level of employee outflow scaled by the total number of employees, multiplied by 100.
<i>Large Facility</i>	An indicator variable that takes the value of one when the total number of employees for a Firm-MSA-Quarter is in the top 30%, and zero otherwise.
<i>Variables from Glassdoor:</i>	
<i>More Reviews</i>	An indicator variable that takes the value of one when the number of reviews on Glassdoor for the focal facility in the past one year is in top 30, and zero otherwise.
<i>High Helpfulness</i>	An indicator variable that takes the value of one when the average helpfulness of reviews is in the top 30% group, and zero otherwise.
<i>Glassdoor Overall</i>	The average overall Glassdoor rating.
<i>Glassdoor Culture</i>	The average Glassdoor culture rating.
<i>Cultural Misrepresentation</i>	An indicator variable that takes the value of one when job posting culture scores are in the top 30% group while employee ratings on corporate culture on Glassdoor are in the bottom 30% group in either of the following two quarters.
<i>Interview Culture</i>	The percentage of interviews that mention culture in a firm-quarter.
<i>Offer Rate</i>	The share of interviews that result in a job offer in a firm-quarter.
<i>Accept Rate</i>	The percentage of interviewees that accept the offers if granted in a firm-quarter.

Other Variables:

Violations

The number of labor-related violations collected from Violation Tracker. The labor-related violation categories include: Occupational Safety & Health Administration, Equal Employment Opportunity Commission, Labor Department Wage and Hour Division, and National Labor Relations Board.

Labor Risk

The number of ESG-related risk issues collected from Reprisk. The ESG-related risk issues include: Discrimination in Employment, Forced Labor, Freedom of Association and Collective Bargaining, Human Rights Abuses and Corporate Complicity, Occupational Health and Safety Issues, Poor Employment Conditions, and Social Discrimination.

BLM

An indicator variable that takes the value of one for the months after the BLM movement in the sample period (2020 June - 2020 November), and zero otherwise (2019 December - 2020 May)

Size

The natural log of firm's total assets.

ROA

Net income scaled by firm's total assets.

MTB

Market value to book value ratio

Leverage

Firm leverage, defined as total liabilities scaled by total assets.

Intangible

Intangible intensity, defined as total intangible assets scaled by total assets.

Figure 1. Time Series Trend

This figure plots the time-series trend of *Job Culture* over the sample period.

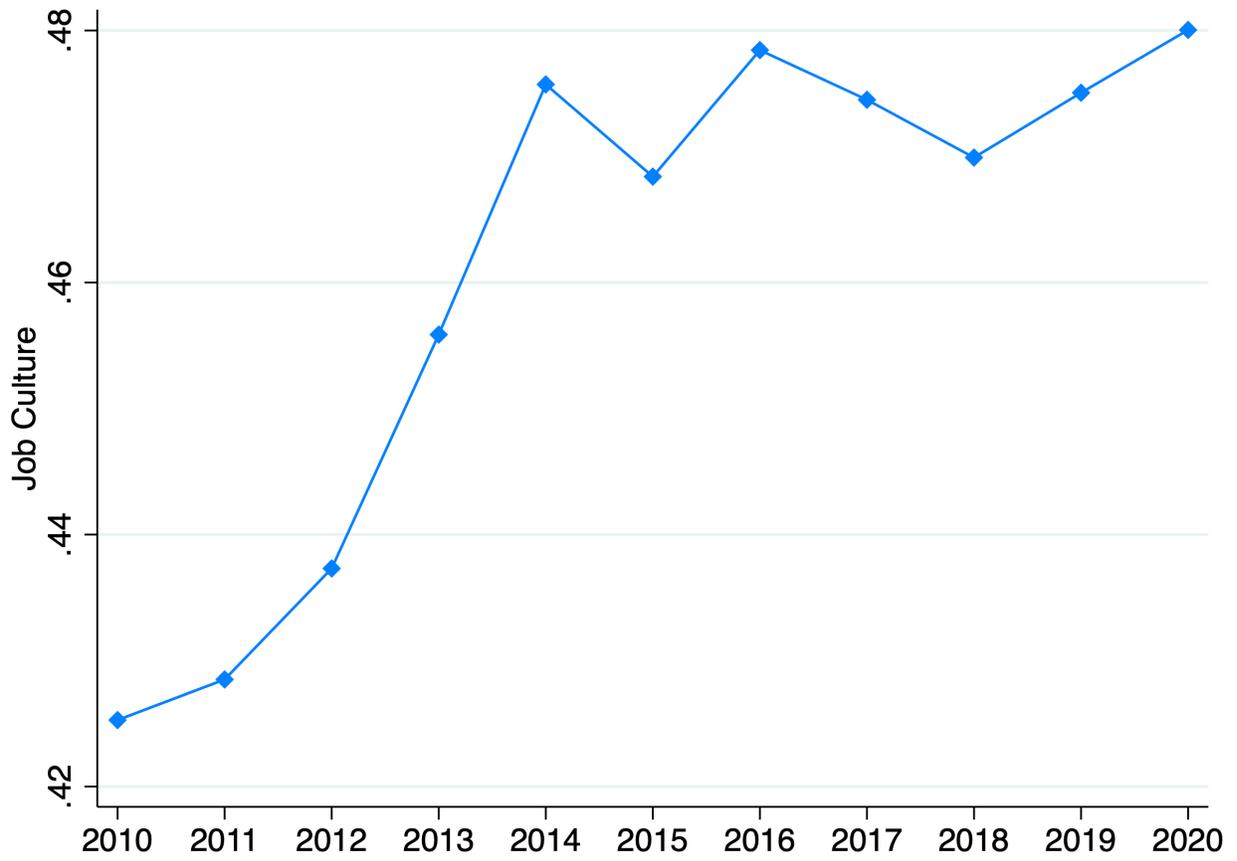


Figure 2. Geographical Heterogeneity

This figure reports the geographical distribution of *Job Culture*. Darker (lighter) colors indicate areas in which job postings focus more (less) on culture.

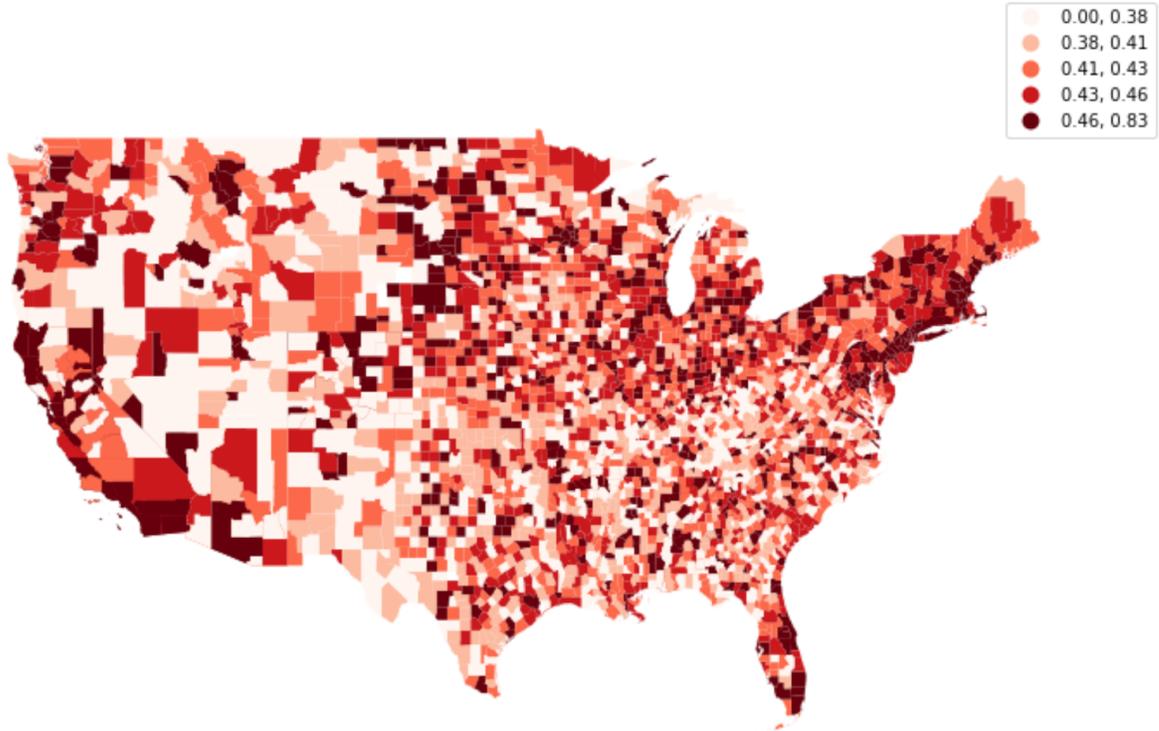


Figure 3. Occupation Distribution

This figure reports the occupation distribution of *Job Culture*. Occupation area is categorized using 2-digit SOC codes. The X-axis presents the occupation area names and the Y-axis presents the average of *Job Culture* among the job postings in an occupation area.

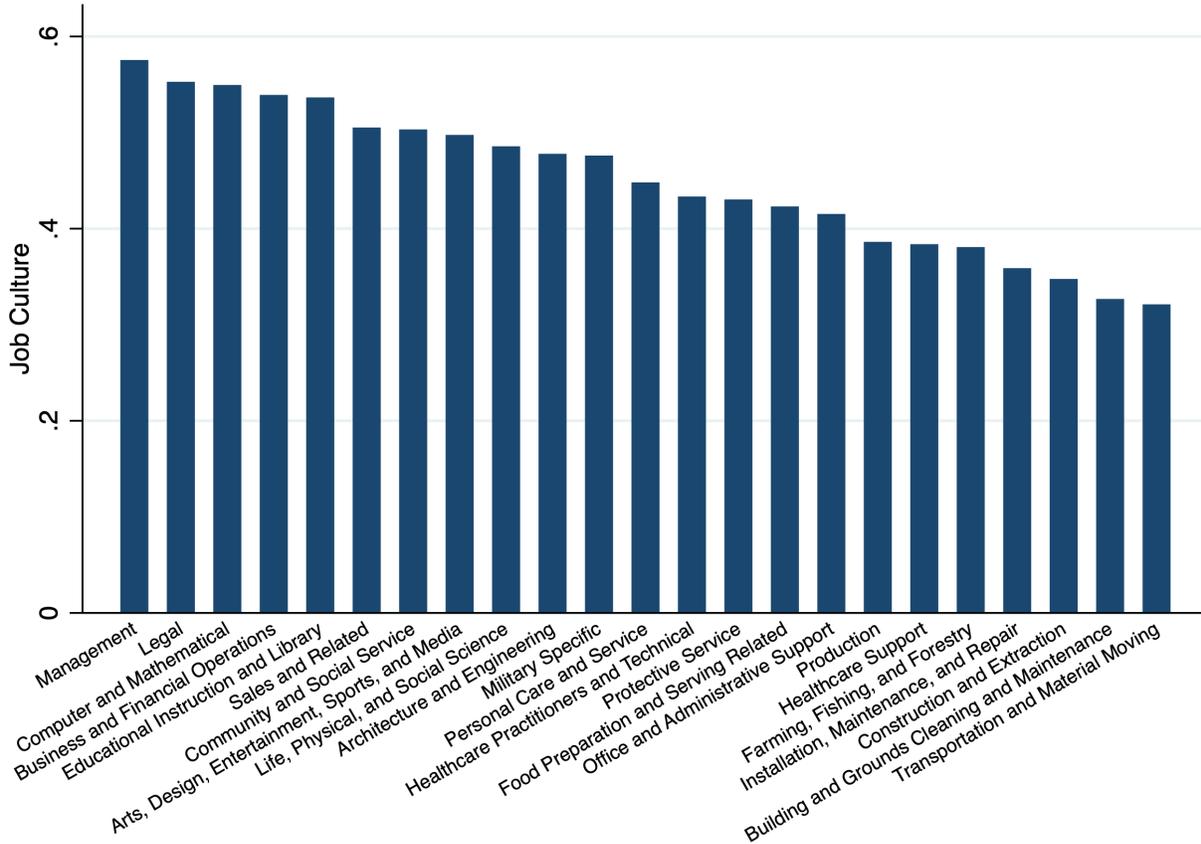


Table 1. Variance Decomposition

This table examines sources of variation in job posting culture information. The key variable of interest, *Job Culture*, is the sum of culture scores for five specific dimensions (Integrity, Teamwork, Innovation, Respect, and Quality). Each row presents the adjusted R^2 from a regression of *Job Culture* on the corresponding fixed effects. From row (1) to (5), we include firm, industry, calendar month, occupational category (SOC), and county fixed effects, respectively. In row (6) to (11), we consider the pairwise interactive fixed effect structures.

Fixed Effect	Adjusted R^2
(1) Firm	28.83%
(2) Industry	16.16%
(3) Month	0.88%
(4) SOC	23.97%
(5) County	5.47%
(6) Firm \times SOC	51.79%
(7) Firm \times County	36.82%
(8) Firm \times Month	38.55%
(9) SOC \times County	29.36%
(10) SOC \times Month	27.36%
(11) County \times Month	7.24%

Table 2. Summary Statistics

This table provides summary statistics of key variables for our sample. The unit of observation is at the Firm-MSA-Quarter level. All variables are winsorized at the top and bottom 1% of the distribution. Variable definitions are provided in the Appendix B.

	Mean	Std. Dev.	Q1	Median	Q3
<i>Inflow</i>	3.218	5.126	0.000	1.213	4.298
<i>Job Culture</i>	0.466	0.144	0.370	0.461	0.560
<i>Job Culture-Count High</i>	1.481	1.269	0.000	1.000	2.000
<i>Job Culture-All High</i>	0.096	0.296	0.000	0.000	0.000
<i>Education</i>	10.174	5.975	5.950	12.000	14.762
<i>Experience</i>	2.431	2.250	0.000	2.000	3.764
<i>Length</i>	5.259	0.621	5.011	5.357	5.638
<i>Skill Count</i>	10.194	5.535	6.062	9.889	13.820
<i>Log Salary</i>	10.625	0.535	10.205	10.578	10.980
<i>Size</i>	9.190	1.911	7.851	9.053	10.373
<i>ROA</i>	0.014	0.022	0.005	0.013	0.022
<i>Leverage</i>	0.650	0.212	0.510	0.643	0.792
<i>MTB</i>	3.600	9.176	1.404	2.422	4.258
<i>Intangible</i>	0.260	0.218	0.052	0.221	0.437

Table 3. Job Posting Culture Information and Employee Inflow

This table reports the results from Firm-MSA-Quarter level regressions of employee inflow on job posting culture scores. The dependent variable, *Inflow*, is measured as employee inflow scaled by the total number of employees, multiplied by 100. In Panel A, the key variable of interest, *Job Culture*, is the sum of standardized culture scores of five specific dimensions. In Panel B, the key variable of interest, *Job Culture-Count High*, is the number of cultural dimensions with culture scores among the top 30% of the corresponding year. In Panel C, the key variable of interest, *Job Culture-All High*, is an indicator variable that equals one if the culture scores are among the top 30% in all five dimensions. Job posting controls *Education*, *Experience*, *Length*, *Hiring Intensity*, *Skill Count*, and *Salary Disclosed*. Firm Controls include *Size*, *ROA*, *Leverage*, *MTB*, and *Intangible*. Standard errors are two-way clustered at the Firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Panel A. Culture Measure: <i>Job Culture</i>				
Dep. Var.: <i>Inflow</i>	(1)	(2)	(3)	(4)
<i>Job Culture</i>	0.455*** (11.74)	0.218*** (8.36)	0.208*** (7.40)	0.196*** (7.17)
<i>Education</i>		0.010** (2.08)	0.004 (0.91)	0.006 (1.30)
<i>Experience</i>		0.014 (1.31)	0.025** (2.28)	0.023** (2.15)
<i>Length</i>		0.026 (0.70)	0.002 (0.04)	0.016 (0.38)
<i>Hiring Intensity</i>		0.207*** (10.80)	0.384*** (12.76)	0.377*** (12.36)
<i>Skill Count</i>		0.026*** (5.10)	0.018*** (2.99)	0.018*** (3.17)
<i>Salary Disclosed</i>		-0.023 (-0.50)	0.142*** (3.11)	0.070 (1.51)
Firm Controls	Yes	No	Yes	Yes
Quarter FE	No	No	Yes	No
Firm-MSA FE	No	No	Yes	Yes
MSA-Quarter FE	No	Yes	No	Yes
Firm-Quarter FE	No	Yes	No	No
Observations	1,248,305	1,238,584	1,236,479	1,236,477
Adjusted R ²	0.0026	0.0420	0.0644	0.0710

Panel B. Culture Measure: *Job Culture - Count High*

Dep. Var.: <i>Inflow</i>	(1)	(2)	(3)	(4)
<i>Job Culture-Count High</i>	0.249*** (9.37)	0.087*** (5.32)	0.100*** (5.27)	0.093*** (5.01)
<i>Education</i>		0.011** (2.23)	0.004 (0.97)	0.006 (1.37)
<i>Experience</i>		0.016 (1.53)	0.026** (2.37)	0.024** (2.23)
<i>Length</i>		0.047 (1.26)	0.019 (0.43)	0.032 (0.78)
<i>Hiring Intensity</i>		0.211*** (10.91)	0.385*** (12.79)	0.378*** (12.39)
<i>Skill Count</i>		0.027*** (5.31)	0.018*** (3.08)	0.018*** (3.26)
<i>Salary Disclosed</i>		-0.028 (-0.60)	0.140*** (3.06)	0.067 (1.46)
Firm Controls	Yes	No	Yes	Yes
Quarter FE	No	No	Yes	No
Firm-MSA FE	No	No	Yes	Yes
MSA-Quarter FE	No	Yes	No	Yes
Firm-Quarter FE	No	Yes	No	No
Observations	1,248,305	1,238,584	1,236,479	1,236,477
Adjusted R ²	0.0020	0.0419	0.0644	0.0710

Panel C. Culture Measure: *Job Culture – All High*

Dep. Var.: <i>Inflow</i>	(1)	(2)	(3)	(4)
<i>Job Culture-All High</i>	0.756*** (8.93)	0.112** (2.31)	0.222*** (4.24)	0.201*** (3.90)
<i>Education</i>		0.011** (2.27)	0.004 (1.00)	0.006 (1.40)
<i>Experience</i>		0.018* (1.72)	0.027** (2.46)	0.025** (2.32)
<i>Length</i>		0.052 (1.38)	0.023 (0.52)	0.036 (0.86)
<i>Hiring Intensity</i>		0.209*** (10.82)	0.382*** (12.73)	0.375*** (12.35)
<i>Skill Count</i>		0.028*** (5.43)	0.018*** (3.11)	0.019*** (3.29)
<i>Salary Disclosed</i>		-0.035 (-0.76)	0.134*** (2.92)	0.062 (1.34)
Firm Controls	Yes	No	Yes	Yes
Quarter FE	No	No	Yes	No
Firm-MSA FE	No	No	Yes	Yes
MSA-Quarter FE	No	Yes	No	Yes
Firm-Quarter FE	No	Yes	No	No
Observations	1,248,305	1,238,584	1,236,479	1,236,477
Adjusted R ²	0.0018	0.0419	0.0643	0.0709

Table 4. Dynamic Effects

This table provides robustness analyses that vary the lead-lag structure in regressions of *Inflow* on *Job Culture*. Column (1) and (2) report the results when measuring inflow in the previous quarter and current quarter as the dependent variables, respectively. The dependent variables in Columns (3) through (6) are inflow in the following four quarters, respectively. The key variable of interest, *Job Culture*, is the sum of the standardized culture scores of five cultural dimensions. Control variables are as specified in Table 3. Standard errors are two-way clustered at the Firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Dep. Var.:	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Inflow_{t-1}</i>	<i>Inflow_t</i>	<i>Inflow_{t+1}</i>	<i>Inflow_{t+2}</i>	<i>Inflow_{t+3}</i>	<i>Inflow_{t+4}</i>
<i>Job Culture</i>	0.026 (0.93)	0.068** (2.48)	0.196*** (7.17)	0.053** (2.16)	-0.017 (-0.66)	-0.015 (-0.56)
<i>Education</i>	0.003 (0.76)	0.006 (1.51)	0.006 (1.30)	0.006 (1.32)	0.006 (1.37)	0.009** (2.10)
<i>Experience</i>	0.026*** (2.61)	0.027*** (2.66)	0.023** (2.15)	0.028*** (2.67)	0.021* (1.78)	0.027** (2.28)
<i>Length</i>	0.114** (2.45)	-0.000 (-0.01)	0.016 (0.38)	0.029 (0.63)	0.021 (0.48)	0.050 (1.06)
<i>Hiring Intensity</i>	0.397*** (13.62)	0.394*** (13.10)	0.377*** (12.36)	0.377*** (12.17)	0.389*** (12.20)	0.388*** (12.51)
<i>Skill Count</i>	0.015** (2.47)	0.019*** (3.41)	0.018*** (3.17)	0.017*** (2.95)	0.018*** (3.11)	0.014*** (2.61)
<i>Salary Disclosed</i>	0.046 (0.90)	0.040 (0.82)	0.070 (1.51)	0.061 (1.18)	0.070 (1.36)	0.077 (1.41)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm-MSA FE	Yes	Yes	Yes	Yes	Yes	Yes
MSA-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,231,520	1,629,348	1,236,477	1,149,740	1,090,644	988,249
Adjusted R ²	0.0702	0.0698	0.0710	0.0662	0.0656	0.0673

Table 5. Culture Disclosures, Employee Inflow and Information Asymmetry

This table provides results examining how the relation between culture disclosure in job postings and employee inflow varies with job seeker information asymmetry. The dependent variable, *Inflow*, is measured as employee inflow scaled by the total number of employees, multiplied by 100. The key variable of interest, *Job Culture*, is the sum of the standardized culture scores of five specific dimensions. In Columns (1)-(2), *Large Facility* is an indicator variable that takes the value of one when the employees team size is in top 30%, and zero otherwise. In Columns (3)-(4), *More Reviews* is an indicator variable that takes the value of one when the number of reviews on Glassdoor for the focal facility in the past 1 year is in top 30%, and zero otherwise. In Columns (5)-(6), *High Helpfulness* is an indicator variable that takes the value of one when the average helpfulness of reviews is in top 30%, and zero otherwise. We include the standard sets of job posting and firm controls as described in Table 3. Standard errors are two-way clustered at the firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Dep. Var.: <i>Inflow</i>	<u>Large Facilities</u>		<u>More Reviews</u>		<u>High Helpfulness</u>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Job Culture</i>	0.279*** (7.81)	0.282*** (8.13)	0.220*** (7.36)	0.211*** (7.23)	0.212*** (7.48)	0.202*** (7.29)
<i>Large Facility</i> × <i>Job Culture</i>	-0.224*** (-5.80)	-0.268*** (-7.14)				
<i>Large Facility</i>	0.416** (2.25)	0.344* (1.84)				
<i>More Reviews</i> × <i>Job Culture</i>			-0.096** (-2.29)	-0.088*** (-3.01)		
<i>More Reviews</i>			0.101* (1.69)	0.157* (1.93)		
<i>High Helpfulness</i> × <i>Job Culture</i>					-0.202*** (-3.40)	-0.241*** (-3.95)
<i>High Helpfulness</i>					-0.067 (-0.89)	-0.060 (-0.80)
Job Posting Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	No	Yes	No	Yes	No
Firm-MSA FE	Yes	Yes	Yes	Yes	Yes	Yes
MSA-Quarter FE	No	Yes	No	Yes	No	Yes
Observations	1,236,479	1,236,477	1,236,479	1,236,477	1,236,479	1,236,477
Adjusted R ²	0.0645	0.0711	0.0646	0.0711	0.0644	0.0710

Table 6. Cultural Fit Channel

This table provides results examining how the relation between culture information in job postings and inflow changes around the Black Lives Matter (*BLM*) movement. The sample consists of 285,037 Firm-MSA-Month level observations in a 12-month period centered around the murder of George Floyd, ranging from December 2019 to November 2020. The dependent variable, *Inflow*, is measured as employee inflow scaled by the total number of employees, multiplied by 100. The key variables of interest are standardized *Respect* culture scores in Column (1) or the sum of standardized culture scores of the other four culture dimensions (*Integrity, Teamwork, Innovation, Quality*) in Column (2). *BLM* is an indicator variable that takes the value of one for the six months after the BLM movement (starting from June 2020), and zero otherwise. We include the standard sets of job posting and firm controls as described in Table 3. Standard errors are two-way clustered at the firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Dep. Var.: <i>Inflow</i>	(1)	(2)
<i>BLM</i> × <i>Respect</i>	0.058** (1.99)	
<i>Respect</i>	-0.014 (-0.65)	
<i>BLM</i> × <i>Other Culture</i>		-0.003 (-0.24)
<i>Other Culture</i>		0.034*** (3.74)
Job Posting Controls	Yes	Yes
Firm Controls	Yes	Yes
Firm-MSA FE	Yes	Yes
MSA-Month FE	Yes	Yes
Observations	285,037	285,037
Adjusted R ²	0.2177	0.2178

Table 7. Interview Analyses

This table provides results examining how culture information in job postings affects subsequent interview outcomes. The sample consists of 25,461 Firm-Quarter level observations. The independent variable, *Job Culture*, is the sum of the standardized culture scores of five specific dimensions. In Column (1), the dependent variable, *Interview Culture*, is defined as the percentage of interviews that mention culture in a firm-quarter. In Column (2), the dependent variable, *Offer Rate*, is the share of interviews that result in a job offer. In Column (3), *Accept Rate* captures the percentage of interviewees that accept the offers if granted. We include the standard sets of job posting and firm controls as described in Table 3. Industry and quarter fixed effects are included. Standard errors are two-way clustered at the firm and quarter levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Panel A. Summary Statistics					
	Mean	SD	Q1	Median	Q3
<i>Interview Culture</i>	0.021	0.104	0.000	0.000	0.000
<i>Offer Rate</i>	0.387	0.367	0.000	0.333	0.667
<i>Accept Rate</i>	0.802	0.255	0.779	1.000	1.000

Panel B. Regressions			
	(1)	(2)	(3)
Dep. Var.:	<i>Interview Culture</i>	<i>Offer Rate</i>	<i>Accept Rate</i>
<i>Job Culture</i>	0.074*** (3.16)	0.048*** (6.96)	0.053** (2.01)
Job Posting Controls	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	25,461	25,461	19,138
Adjusted R ²	0.0829	0.2061	0.0329

Table 8. Signaling Channel

This table examines the association between culture information in job postings and other culture measures. The independent variable, *Job Culture*, is the sum of the standardized culture scores of five specific dimensions. We report the correlations between *Job Culture* and overall employee ratings (*Glassdoor Overall*) in Column (1) and corporate culture ratings (*Glassdoor Culture*) in Column (2). In Columns (3) and (4), we consider firms' labor-related negative events. The negative events are either labor-related violations (*Violations*) collected from Violation Tracker (Column (3)) or labor-related risk issues (*Labor Risk*) collected from RepRisk (Column (4)). Industry and quarter fixed effects are included. Control variables include the average length of job posting, the percentage of job postings with available salary information, size, ROA, leverage, market-to-book ratio, and intangible intensity. Standard errors are two-way clustered at the firm and quarter levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Panel A. Summary Statistics					
	Mean	SD	Q1	Median	Q3
<i>Glassdoor Overall</i>	3.272	0.822	2.857	3.333	3.803
<i>Glassdoor Culture</i>	3.235	0.900	2.727	3.286	3.839
<i>Violations</i>	0.053	0.225	0	0	0
<i>Labor Risk</i>	0.048	0.213	0	0	0

Panel B. Regressions				
	(1)	(2)	(3)	(4)
Dep. Var.:	<i>Glassdoor Overall</i>	<i>Glassdoor Culture</i>	<i>Violations</i>	<i>Labor Risk</i>
<i>Job Culture</i>	0.058*** (5.87)	0.095*** (7.64)	-0.016*** (-7.67)	-0.005** (-2.69)
Job Posting Controls	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	40,150	34,464	102,901	102,901
Adjusted R ²	0.1053	0.0938	0.0943	0.1166

Table 9. Job Posting Culture Information and Employee Outflows

This table examines how culture information relates to employee outflows. In Panel A, we estimate Firm-MSA-Quarter level regressions of employee outflow on the sum of the standardized job posting culture scores (*Job Culture*) with various lead-lag structures. In Panel B, we examine the effects of cultural misrepresentation, where *Cultural Misrepresentation* is an indicator variable that takes the value of one when job posting culture scores are in the top 30% of the sample distribution and Glassdoor culture ratings are in the bottom 30% group in either of the following two quarters, and zero otherwise. The dependent variable in both panels is *Outflow*, which is measured as the level of employee outflow scaled by the total number of employees, multiplied by 100. Standard errors are two-way clustered at the firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Panel A: Culture Information and Employee Outflow						
Dep. Var.:	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Outflow_{t-1}</i>	<i>Outflow_t</i>	<i>Outflow_{t+1}</i>	<i>Outflow_{t+2}</i>	<i>Outflow_{t+3}</i>	<i>Outflow_{t+4}</i>
<i>Job Culture</i>	0.020 (0.75)	0.034 (1.39)	-0.060*** (-2.60)	-0.083*** (-3.51)	-0.098*** (-3.50)	-0.043 (-1.61)
<i>Education</i>	0.009** (2.57)	0.006 (1.63)	0.006 (1.46)	0.007 (1.58)	0.005 (1.15)	0.004 (0.94)
<i>Experience</i>	-0.017* (-1.78)	-0.009 (-1.01)	-0.007 (-0.65)	-0.005 (-0.49)	-0.004 (-0.36)	-0.003 (-0.29)
<i>Length</i>	-0.084* (-1.78)	-0.056 (-1.36)	-0.060 (-1.34)	-0.080 (-1.63)	-0.127** (-2.50)	-0.091* (-1.79)
<i>Hiring Intensity</i>	-0.059*** (-3.26)	-0.057*** (-3.22)	-0.066*** (-3.40)	-0.076*** (-3.85)	-0.069*** (-3.39)	-0.086*** (-4.36)
<i>Skill Count</i>	0.007 (1.39)	0.004 (0.81)	0.006 (1.32)	0.010* (1.93)	0.015*** (2.83)	0.010** (1.97)
<i>Salary Disclosed</i>	-0.023 (-0.50)	-0.018 (-0.39)	-0.023 (-0.47)	-0.023 (-0.44)	-0.064 (-1.20)	-0.045 (-0.83)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm-MSA FE	Yes	Yes	Yes	Yes	Yes	Yes
MSA-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,231,520	1,629,348	1,236,477	1,149,740	1,090,644	988,249
Adjusted R ²	0.0695	0.0656	0.0724	0.0709	0.0690	0.0716

Panel B. Cultural Misrepresentation

	(1)	(2)
<i>Cultural Misrepresentation</i>	0.153** (2.10)	0.164** (2.26)
<i>Education</i>	0.006 (1.57)	0.005 (1.17)
<i>Experience</i>	-0.047*** (-4.87)	-0.046*** (-4.65)
<i>Length</i>	-0.012 (-0.31)	-0.027 (-0.67)
<i>Hiring Intensity</i>	-0.040*** (-3.54)	-0.039*** (-3.45)
<i>Skill Count</i>	-0.009** (-2.05)	-0.009** (-1.96)
<i>Salary Disclosed</i>	-0.102** (-2.54)	-0.076* (-1.84)
Firm Controls	Yes	Yes
Quarter FE	Yes	No
Firm-MSA FE	Yes	Yes
MSA-Quarter FE	No	Yes
Observations	964,321	964,302
Adjusted R ²	0.0649	0.0729

Table 10. Job-Level Panel Analysis

This table provides a robustness analysis of the main results in Table 3 using a Firm-MSA-SOC-Quarter level of aggregation. The dependent variable, *Inflow*, is measured as employee inflow scaled by the total number of employees, multiplied by 100. The key variable of interest, *Job Culture*, is the sum of the standardized culture scores of the five specific dimensions. Control variables are as specified in Table 3. Standard errors are clustered at the Firm, MSA, and SOC-Quarter levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Dep. Var.: <i>Inflow</i>	(1)	(2)	(3)	(4)
<i>Job Culture</i>	0.308*** (6.69)	0.066** (2.55)	0.102*** (4.12)	0.092*** (4.19)
<i>Education</i>		0.007 (1.60)	-0.002 (-0.59)	-0.001 (-0.25)
<i>Experience</i>		-0.010 (-1.12)	0.017** (2.21)	0.018** (2.30)
<i>Length</i>		-0.039 (-1.09)	0.023 (0.58)	0.018 (0.48)
<i>Hiring Intensity</i>		0.915*** (17.88)	0.700*** (11.12)	0.685*** (11.85)
<i>Skill Count</i>		0.012*** (3.16)	0.002 (0.53)	0.002 (0.49)
<i>Salary Disclosed</i>		0.059 (1.19)	0.068 (1.33)	0.058 (1.16)
Firm Controls	Yes	No	Yes	Yes
Quarter FE	No	No	Yes	No
Firm-MSA-SOC FE	No	No	Yes	Yes
MSA-Quarter FE	No	Yes	No	Yes
Firm-Quarter FE	No	Yes	No	No
SOC-Quarter FE	No	No	No	Yes
Observations	2,089,600	2,086,992	2,046,298	2,046,271
Adjusted R ²	0.0011	0.0238	0.0583	0.0623

Table 11. Entropy Matching

This table provides a robustness analysis for the main results in Table 3 using entropy-balancing. The treatment variable, *Top Culture*, is defined as an indicator variable that takes the value of one when the sum standardized culture scores of five specific dimensions are in the top 30% of the sample. We identify observation weights for Firm-MSA-Quarter observations that are not in the top 30% group such that the first and second moments of covariates in the weighted sample are identical to those in the top 30%. We match on *Glassdoor Culture*, *Education*, *Experience*, *Length*, *Hiring Intensity*, *Skill Count*, *Salary Disclosed*, *Size*, *ROA*, *Leverage*, *MTB*, *Intangible*, and a set of quarter dummies and MSA dummies. Panel A provides the covariate distributions from the entropy balancing procedure. Panel B provides regressions of *Inflow* on *Top Culture*, using the weighted sample. Standard errors are two-way clustered at the firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Panel A. Covariate Distributions After Entropy Balancing

	Treatment		Control		Balance Stat.	
	<i>Mean</i>	<i>Std.</i>	<i>Mean</i>	<i>Std.</i>	<i>Diff</i>	<i>Var. Ratio</i>
<i>Glassdoor Culture</i>	3.346	0.694	3.346	0.694	0.000	1.000
<i>Education</i>	11.232	5.723	11.232	5.723	0.000	1.000
<i>Experience</i>	3.013	2.475	3.013	2.475	0.000	1.000
<i>Length</i>	5.405	0.560	5.405	0.560	0.000	1.000
<i>Hiring Intensity</i>	2.928	2.022	2.927	2.022	0.000	1.000
<i>Skill Count</i>	12.201	5.813	12.201	5.813	0.000	1.000
<i>Salary Disclosed</i>	0.204	0.403	0.204	0.403	0.000	1.000
<i>Size</i>	8.922	1.749	8.922	1.749	0.000	1.000
<i>ROA</i>	0.014	0.026	0.014	0.026	0.000	1.000
<i>Leverage</i>	0.634	0.290	0.634	0.290	0.000	1.000
<i>MTB</i>	3.397	6.393	3.397	6.393	0.000	1.000
<i>Intangible</i>	0.220	0.219	0.220	0.219	0.000	1.000

Panel B. Entropy Matching Results

	(1)	(2)	(3)	(4)
<i>Top Culture</i>	0.834*** (8.83)	0.253*** (4.99)	0.347*** (5.20)	0.321*** (5.05)
<i>Glassdoor Culture</i>		0.117* (1.89)	0.171*** (3.35)	0.194*** (3.88)
<i>Education</i>		0.011* (1.79)	0.013* (1.93)	0.014** (2.11)
<i>Experience</i>		-0.008 (-0.62)	-0.011 (-0.82)	-0.012 (-0.89)
<i>Length</i>		0.021 (0.33)	-0.043 (-0.68)	-0.038 (-0.58)
<i>Hiring Intensity</i>		0.207*** (9.78)	0.441*** (12.07)	0.436*** (12.35)
<i>Skill Count</i>		0.021*** (3.34)	0.021*** (2.93)	0.021*** (3.01)
<i>Salary Disclosed</i>		0.018 (0.26)	0.226*** (3.51)	0.134** (1.99)
Firm Controls	Yes	No	Yes	Yes
Quarter FE	No	No	Yes	No
Firm-MSA FE	No	No	Yes	Yes
MSA-Quarter FE	No	Yes	No	Yes
Firm-Quarter FE	No	Yes	No	No
Observations	728,068	723,366	719,572	719,566
Adjusted R ²	0.0021	0.0718	0.0988	0.1171

Table 12. Job Posting Culture Information and Wage

This table provides a robustness analysis for the main results in Table 3 after controlling for advertised or actual wage. The model is the same as that specified in Table 3, with the exception that the test controls for the natural log of the advertised minimum salary in job postings (Column (1)-(2)) and the advertised maximum salary in job postings (Column (3)-(4)) whenever available. In Column (5)-(6), we control for the average wages of existing employees in the previous month reported by Revelio. The dependent variable, *Inflow*, is measured as employee inflow scaled by the total number of employees, multiplied by 100. The key variable of interest, *Job Culture*, is the sum of the standardized culture scores of five cultural dimensions. Control variables are as specified in Table 3. Standard errors are two-way clustered at the Firm and MSA levels. All variables are winsorized at the top and bottom 1% of the cross-sectional distribution. Variables are defined in the Appendix B. Coefficients marked with *, **, and *** are significant at 10%, 5%, and 1%, respectively.

Dep. Var.: <i>Inflow</i>	<u>Advertised Min Wage</u>		<u>Advertised Max Wage</u>		<u>Actual Wage</u>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Job Culture</i>		0.238*** (3.76)		0.238*** (3.76)		0.200*** (7.36)
<i>Advertised Min Wage</i>	0.012 (0.16)	0.039 (0.48)				
<i>Advertised Max Wage</i>			-0.034 (-0.09)	-0.014 (-0.03)		
<i>Actual Wage</i>					0.835*** (10.67)	0.832*** (10.63)
Job Posting Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Facility FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	347,984	297,910	347,984	297,910	1,205,167	1,205,167
Adjusted R ²	0.1024	0.1019	0.1024	0.1019	0.0500	0.0501