

The Geography of U.S. Companies That Care About Their Employees

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ABSTRACT

Investment in employees is increasingly vital for fostering a sustainable and inclusive workplace. While past research has linked investment in employees (i.e., financial benefits and well-being efforts) to individual company performance, it mainly overlooked how these benefits relate to a broader state level. Our study gathered over 350,000 employee reviews of 104 major U.S. companies from 2008 to 2020, used deep learning to assess company investment in employees in these reviews, and associated these companies with the U.S. states in which they are located. Based on a state-level factor analysis, we discovered that there are two main facets that relate to investment in employees: one with primary focus on financial benefits; and a more comprehensive one that, in addition to financial, incorporates a set of other, more intangible benefits, such as as health, education, diversity, infrastructure and atmosphere. We then found that states hosting companies investing in the latter facet tended to be economically prosperous, and attractive to the “creative class.” This fresh perspective on internal corporate efforts has significant implications for economic geography, workplaces, and the computational social science literature.

KEYWORDS

social media, corporate culture, workplaces, deep learning, geography, natural language processing

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1 INTRODUCTION

“Healthy employees, healthy business” is a phrase that underscores the important relationship between employees’ well-being and a company’s overall success. According to the World Business Council for Sustainable Development, it is estimated that nearly 2 million employees worldwide experience adverse well-being conditions in their workplaces every year, including physical and mental health conditions [22]. Even more concerning, as reported by the American Institute of Stress, 40% of workers consider their jobs to be stressful—a number that has significantly increased during the COVID-19 pandemic [51]. When not managed effectively, workplaces can (in)directly deteriorate employees’ physical and mental health, with excessive workloads and lack of work-life balance [50].

Consequently, it becomes imperative for companies to prioritize and invest in employee well-being to foster sustainable and inclusive workplaces. Report after report highlights that companies are actively embracing employee well-being programs as an integral part of their corporate strategies [24, 25]. These programs include policies such as increased maternity and parental leaves, fitness benefits, on-site health services, well-being workshops, ergonomic workplaces, team-building events, financial education, and continuous learning. In fact, a recent study showed that 68% of senior executives intend to invest more in employee well-being and see it as a competitive advantage.

Past research has demonstrated that investment in employees, in particular in their well-being, directly impacts individual company performance [47]. This impact includes enhanced employee engagement, increased productivity and job satisfaction, and concurrent reductions in organizational absenteeism, turnover, and healthcare costs [8, 26, 42]. Nevertheless, the scope of this influence is likely to extend beyond individual employees or companies. Richard Florida’s seminal work established a link between regional economic prosperity and the presence of the “creative class,” composed of professionals engaged in creative and knowledge-based industries [18, 19]. Building upon Florida’s research, subsequent studies found that U.S. states with more educated populations in metropolitan areas tend to experience greater economic success compared to states that do not attract the creative class [31]. Moreover, investments in talent and technology have been shown to predict the retention of the creative class and, in turn, contribute to state income growth [20]. However, what has often been overlooked in previous research is the interplay between the investment

in company employees and its relationship with the economic and social fabric of U.S. states, mainly because of lack of standardized data about investments in employees. In this context, we made two main contributions:

- (1) We collected over 350,000 employee reviews of 104 major U.S. companies from 2008 to 2020, and analyzed them using a state-of-the-art deep-learning framework. For each company, we extracted two main facets that relate to its efforts of investing in employees: (1) financial benefits, and (2) comprehensive staff well-being (including, in addition to financial, benefits related to health, education, diversity, and atmosphere). We then associated these facets with the U.S. states where the companies are located (§3).
- (2) We studied how the two facets are associated with three state-level socioeconomic indicators: *wealth*, *equality*, and *creativity*. We found a strong positive correlation between a state's wealth and companies' staff well-being practices ($[r = 0.37, P = 0.008]$), a positive correlation between a state's income equality and companies' commitment to financial benefits ($[r = 0.47, P = 0.001]$), and a positive correlation between a state's ability to attract the creative class and staff well-being ($[r = 0.31, P = 0.030]$), but a negative correlation with focusing mainly on financial benefits ($[r = -0.51, P = 0.000]$). Financial benefits and staff well-being practices were not only descriptive but also predictive of states' socioeconomic indicators. Our regression analysis showed that the presence of companies investing in and caring for their employees was predictive of wealth (Adj. R^2 of 0.283), equality (Adj. R^2 of 0.279), and creativity (Adj. R^2 of 0.583) (§4).

In light of these results, we discuss the implications of our work for economic geography and computational social science (§5).

2 RELATED WORK

2.1 Individual-Level Workplace Well-being

A growing body of research has examined the relationship between employee well-being programs and organizational outcomes. These programs include a diverse array of corporate policies and initiatives, which have been called “Internal Sustainability Efforts” (ISEs) [47]. These efforts aim at improving employees' work experiences and well-being. They touch upon many aspects of the workplace environment and culture, including work-life balance [35] by offering flexible working hours, gender equality and diversity by ensuring equal pay, inclusive hiring practices [39], and harassment-free working environments through training and reporting procedures [13]. However, the success of such programs depends on perceived organizational support [34]. Employees must feel that an organization genuinely cares about their well-being rather than viewing them as means to boost performance.

Goetzel *et al.* [25] conducted a meta-analysis showing that workplace health promotion programs focusing on lifestyle management and chronic disease produce positive returns on investment. In a survey across multiple industries, Greenhaus *et al.* [28] found that access to health insurance, paid time off, flexible schedules, professional development opportunities predicted higher employee retention, satisfaction, and commitment. Similarly, Baicker *et al.* [8] found that medical costs fell by about \$3.27 for every dollar spent on

workplace well-being programs. At an individual level, research has also shown that employee well-being impacts positively productivity, engagement, and job satisfaction, while reducing absenteeism, and turnover [42, 47].

2.2 State-Level Workplace Well-being

While extensive work has studied the organizational implications, less attention has been paid to the potential broader ripple effects of employee well-being efforts. A few studies have analyzed industry-level differences in adoption of well-being programs, finding higher uptake in white-collar sectors [49]. However, the impacts of these efforts likely extend beyond single companies or industry sectors. For example, practices improving work-life balance could influence employees' personal lives and community involvement, propagating health behaviors into families and neighborhoods [30]. Efforts to increase diversity, equity, and inclusion can help challenge societal discrimination [16]. As such, caring about employee well-being has the potential to create positive spillovers into the wider social fabric and environments employees are embedded in.

Geography has also been considered in understanding these effects. Richard Florida's seminal work connected regional economic prosperity to the presence of the “creative class”, who defined it as a group of people within the workforce who are involved in creative and knowledge-based industries [18, 19]. This class includes individuals such as artists, designers, scientists, engineers, researchers, and professionals in technology, healthcare, education, and other sectors that rely on creativity and intellectual capital. Florida's theory suggests that cities and regions with a higher concentration of the creative class are more likely to foster innovation and economic growth. Hoyman and Faricy [31] showed that states with higher percentages of population over the age of twenty-five with a bachelor's degree or higher in metropolitan statistical areas (MSA) are more economically successful. Additionally, Florida *et al.* [20] used structural equation models and path analysis to demonstrate that investments in developing talent, technology, and tolerance predicted creative class retention, which in turn predicted state income growth. Our work builds on these geographic insights, and posits that companies investing in employee well-being cultivate an environment attractive to equality-driven, creative professionals.

Motivation and Research Questions. No study has systematically analyzed the interplay between state-level socioeconomic outcomes and organizational investment in employees, which is hardly quantifiable because of lack of data and standard methodologies. Our work addresses this gap by examining how corporate attention to well-being efforts links to macroeconomic conditions across U.S. states such as a state's wealth, equality, and creativity. More specifically, we formulated three Research Questions (RQs):

- RQ₁:** *How do the geographical distributions of companies prioritizing only financial benefits compare to those emphasizing comprehensive staff well-being?*
- RQ₂:** *What is the relationship between corporate investment in employee well-being and state-level economic prosperity in U.S.?*
- RQ₃:** *To what extent investment in employee well-being is predictive of state-level indicators?*

Table 1: The six internal sustainability efforts resulting from the three-step mixed-method approach for defining ISEs.

Internal Sustainability Efforts (ISEs)	UN Goal	Example of Review Sentence
Monetary	decent work and economic growth	“Professional growth, training, co-workers, mutuality, income, entrepreneurship”.
Health	good health and wellbeing	“Excellent work-life balance. Great information offered to improve health and equality of life”.
Education	quality education	“Encourage continual education and offer multiple learning opportunities”..
Diversity	gender equality	“Respect for gender equality”.
Infrastructure	industry, innovation, and infrastructure	“Good infrastructure to support the work environment”.
Atmosphere	peace, justice, and strong institutions	“Collaborative environment, excellent benefits, opportunity for growth and development”.

3 METHODS

3.1 Background

Previous work has devised a comprehensive mixed-method approach for the operationalization of corporate investment in employees that was termed corporate ISEs (Internal Sustainability Efforts) [47]. This method has been shown to work on company review data and was executed in three primary stages:

Pre-Selection (Step 1): A panel of three annotators started with the 17 UN SDGs (Sustainable Development Goals) [40]. These goals represent a global initiative urging organizations to actively contribute to tackling some of the most pressing challenges of our time, from ensuring the well-being and health of all individuals, to promoting sustained economic growth that benefits everyone, to fostering a society anchored in peace and justice. Our annotators then collectively identified and discarded those SDGs that were not applicable to the corporate context. This initial screening resulted in the retention of 13 SDGs (e.g., “life under water” was deemed irrelevant).

Unsupervised Discovery (Step 2): From the subset of 13 SDGs, that work employed an NLP (Natural Language Processing) deep-learning framework to determine which SDGs were accurately captured upon a company review dataset akin to our data, which we describe next. This step led to the identification of 8 SDGs that were effectively represented.

Consolidation (Step 3): In the final phase, a team of three annotators systematically merged goals that, when discussed within company reviews, conveyed very similar meanings. This consolidation process resulted in the identification of six distinct ISEs. Table 1 presents a summary of these ISEs, including their names (first column), the original UN SDGs they correspond to (second column), and excerpts from real reviews that are related to each ISE (third column).

Our methodology combines advanced NLP techniques and manual annotations to analyze employee reviews in relation to the United Nations Sustainable Development Goals (SDGs). Next, we explain each technique:

SBERT Framework: We used a Sentence BERT (SBERT) framework [44], known for its effectiveness in capturing semantic similarities in various texts, including those with irregularities like

typos and grammatical inconsistencies. We embedded the 13 SDG definitions into SBERT, generating 13 vectors for each.

Review Analysis: Each review, comprising a title, pros, and cons, was split into individual sentences using a sentence tokenizer. These sentences were then embedded using SBERT. We calculated the cosine similarity between each sentence’s vector and the SDG vectors to estimate their relevance to the SDGs.

Sentence-Level Analysis and Aggregation: For each review, we identified the sentence with the highest similarity to any of the SDG vectors, representing the review’s overall relevance to the SDGs.

Annotator Assessment: To validate our methodology, three independent annotators manually assessed the five highest-ranked sentences for each SDG. We only retained goals where at least four of the top five sentences were deemed relevant. This process resulted in the exclusion of five SDGs due to relevance issues.

Goal Overlap Assessment: To address the issue of overlapping SDGs, we evaluated the content overlap between each pair of goals. This helped in understanding the interconnectedness and potential redundancy among the goals.

Review Selection Criteria: We followed a two-step selection process based on similarity scores. A review was considered relevant to an SDG if its similarity exceeded both a fixed threshold (0.31) and the 95th percentile similarity score for that goal.

3.2 Datasets

In a way similar to previous work [15, 47], we collected information from a well-known company reviewing website, Glassdoor (<https://www.glassdoor.com>), where people, including both current and former employees, write reviews about their experiences at different companies. These reviews cover various aspects like job interviews, salaries, and the overall workplace atmosphere. This website is quite popular, with around 50 million visitors each month in 2021, and it contains 70 million reviews about 1.3 million companies. To make sure the reviews are reliable, the website takes a few steps. They use both automatic and human checks to filter out inappropriate content, they let people see all the reviews only if they sign up and write at least one review themselves (to encourage fairness), and they allow each employee to write only one review per year (to minimize potential bias). Our dataset includes reviews from 2008 to 2020, spanning a twelve-year period.

We also collected the values of four state-level socio-economic indicators previously found to be associated with innovation and economic growth [11, 19]. The first indicator is *urban population* [33] and measures the percentage of the total population in urban areas from the US Census Bureau. Urbanization has often been associated with the ability to attract talent [36] and foster innovation [11]. The second indicator is *wealth* and is operationalized with GDP per capita, since it is a widely-used measure of economic growth. The third indicator is income *equality* and is computed as the inverted value of a state’s Gini coefficient (i.e., this coefficient is the income inequality across households). Inequality has been found to have concerning effects on growth [54]. For example, in the US, the IMF has estimated that a one percentage point increase in the income share of the top 20% will decrease growth by 0.08 percentage points over five years [52]. The fourth indicator is the *creativity index*, as conceptualized by Richard Florida [19]. This index is a tool that measures how cities attract members of the creative class, which includes professionals in the arts, design, sciences, engineering, and knowledge-based fields. Higher creativity index scores are associated with higher rates of urban development, economic growth, and sustainability. The index is derived from a combination of factors that include talent, technology, and tolerance, highlighting the significance of a diverse, innovative, and technologically advanced environment in fostering creativity and attracting a diverse workforce [41].

3.3 Measuring corporate efforts from reviews

We then tested whether commitment to the six ISEs listed in Table 1 manifested itself at macro-level – in a state’s wealth, equality, and creativity. To that end, we computed the score $s(u, i)$ of the i^{th} ISE for state u as the fraction of u ’s reviews that mentioned aspect i :

$$s(u, i) = \frac{\sum_{p \in R(u)} \text{sim}_t(v_p, v_i)}{|R(u)|} \quad (1)$$

The six ISEs are not mutually exclusive concerns, and one may therefore wonder to what extent they are semantically related. To complement the company-level analysis at individual level in previous work, we conducted a Principal Component Analysis (PCA) on $s(u, i)$ at state level instead. This allowed us to assess how much of the variance in the data could be explained by different principal components, and how those components related to the six aspects. We found that the first two components explained 74% and 14% of the variance in the data, while also showing that financial benefits are orthogonal to the other ISEs. We thus found two main facets of employee-centred efforts – *comprehensive staff well-being* (PC_1) and *financial benefits* (PC_2). To avoid multicollinearity, we used these two main facets of ISEs (rather than the six individual ones) to answer our research questions.

4 RESULTS

Prior to addressing our three main research questions, it was important to establish the geographical representativeness of our dataset. To ascertain this, we initially examined the relationship between the number of reviews within our dataset and the population size across different states. This investigation revealed a robust correlation, as quantified by the Pearson correlation coefficient of 0.92

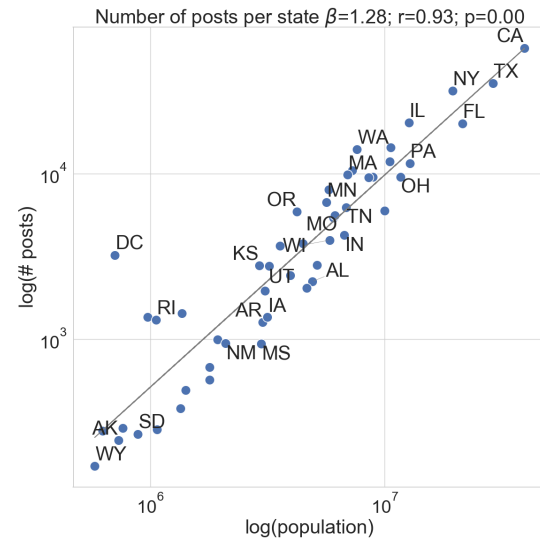


Figure 1: Number of reviews (log) in our dataset versus state population (log). The states of Washington DC (DC) and Rhode Island (RI) have more reviews than what the population size would suggest. The line of best linear fit is shown in gray. U.S. states are shown with the two-code state abbreviation.

(Figure 1). This coefficient signifies a strong alignment between our dataset and the demographic distribution across states, underlining that our data closely aligns with population variations.

Expanding our analysis, we considered an alternative metric by exploring the connection between the number of reviews and the number of *companies* operating within each state, rather than focusing solely on population figures (Table 3). This examination yielded an even stronger correlation, with a Pearson coefficient of 0.98. This finding underscores the concordance between our dataset and the corporate landscape, highlighting that our data effectively captures the distribution of companies across different states.

The dataset’s geographical representativeness allowed us to proceed with our three main research questions.

RQ1. How do the geographical distributions of companies prioritizing only financial benefits compare to those emphasizing comprehensive staff well-being?

Figure 2 reveals strikingly different spatial distributions between the two facets of investment in employees across U.S.

States hosting mostly companies prioritizing *financial benefits* over all others tend to be the interior states, such as Utah, Wyoming, Nebraska, Idaho, and Oklahoma. All of these states have been historically predominantly conservative states [4]. It is possible that traditional business models in such contexts may prioritize financial stability, growth, and shareholders over more modern, intangible aspects of well-being, and overall stakeholders [46, 56].

Table 2: State-level cross-correlation among the 6 ISEs and their two principal components PC1 and PC2. PC1 was strongly associated with the five ISEs of health, education, diversity, infrastructure, and atmosphere; instead, PC2 was strongly associated with the monetary ISE.

	Monetary	Health	Education	Diversity	Infrastructure	Atmosphere	PC1	PC2
Monetary	1.00	0.59	0.49	0.54	0.22	0.48	0.61	0.77
Health	0.59	1.00	0.65	0.84	0.75	0.86	0.92	0.06
Education	0.49	0.65	1.00	0.81	0.69	0.79	0.86	-0.03
Diversity	0.54	0.84	0.81	1.00	0.76	0.88	0.95	-0.02
Infrastructure	0.22	0.75	0.69	0.76	1.00	0.82	0.84	-0.45
Atmosphere	0.48	0.86	0.79	0.88	0.82	1.00	0.95	-0.12
Employee well-being (PC1)	0.61	0.92	0.86	0.95	0.84	0.95	1.00	-0.00
Financial Benefits (PC2)	0.77	0.06	-0.03	-0.02	-0.45	-0.12	-0.00	1.00

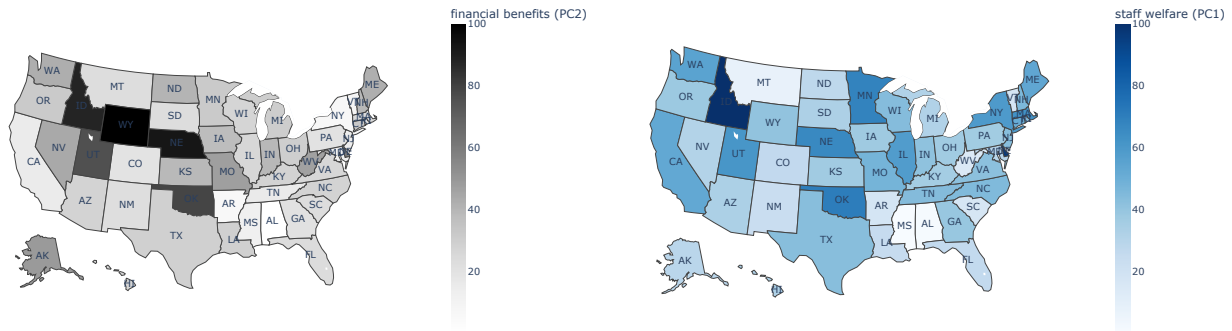


Figure 2: Spatial distributions of (left) financial benefits and (right) staff well-being across U.S. states.

Conversely, states hosting mainly companies prioritizing *comprehensive staff well-being*, are Idaho, Oklahoma, and Minnesota. Idaho scores the highest on comprehensive staff well-being, and it is also among the top on financial benefits, as we have seen. Idaho, particularly the Boise area, has seen significant growth in the tech sector in recent years [5, 6], attracting a variety of companies that offer competitive salaries and comprehensive benefits to attract top talent. Compared to many coastal states, Idaho generally offers a lower cost of living [1], which might mean that salaries and benefits go further in terms of purchasing power. The high ranking of Minnesota for staff well-being could be explained by the state’s mix of industries, ranging from retail to healthcare (like the Mayo Clinic), and a strong emphasis on education. Moreover, Minnesota often ranks high in civic engagement and community involvement [3]. This competitive mix of economic activities and community-oriented mindset can influence companies to take a broader view of employee well-being. On the other hand, states hosting mostly companies that score low on comprehensive staff well-being are Montana, Mississippi, and Alabama. All of these are traditionally conservative states [4]. Possible reasons for their companies scoring low on staff well-being is less competition for talent and limited alternative employment opportunities [2], putting less pressure on companies to offer competitive well-being packages. Perceived tighter cultures might also emphasize conformity and traditional values, which can sometimes be at odds with more modern or progressive views on employee well-being [23, 29].

RQ2. What is the relationship between corporate investment in employee well-being and state-level economic prosperity in U.S.?

We investigated whether the benefits of companies engagement with the well-being of their employees “ripple up” at state level. We did so by computing the correlations between our two main facets of investments in employees and three state-level socioeconomic indicators – wealth [53], equality [12], and creativity [19] (Figure 3). With respect to state’s wealth (GDP per capita), we found high engagement with staff well-being practices to be most relevant, as evidenced by a positive correlation [$r = 0.37, P = 0.008$]; correlation with financial benefits was not found significant instead [$P = 0.259$]. At first glance, this outcome may be unexpected. However, it has to do with the fact that financial benefits aspect primarily emphasizes *just* the salary and financial rewards, whereas staff well-being is a more holistic indicator. Financial benefits are only linked to the monetary dimension, and that might not be enough for driving workplace productivity (which is encouraged by good work infrastructure, for example) and state wealth. In terms of state’s income equality (inverted Gini Coefficient), we found commitment to financial benefits to be more important than staff well-being ($[r = 0.47, P = 0.001]$ vs $[r = 0.29, P = 0.043]$). As for a state’s ability to attract the creative class, we found positive correlation with staff well-being [$r = 0.31, P = 0.030$]; and a negative correlation with over-focus on financial benefits [$r = -0.51, P = 0.000$]. The creative class consists of professionals, such as doctors, engineers,

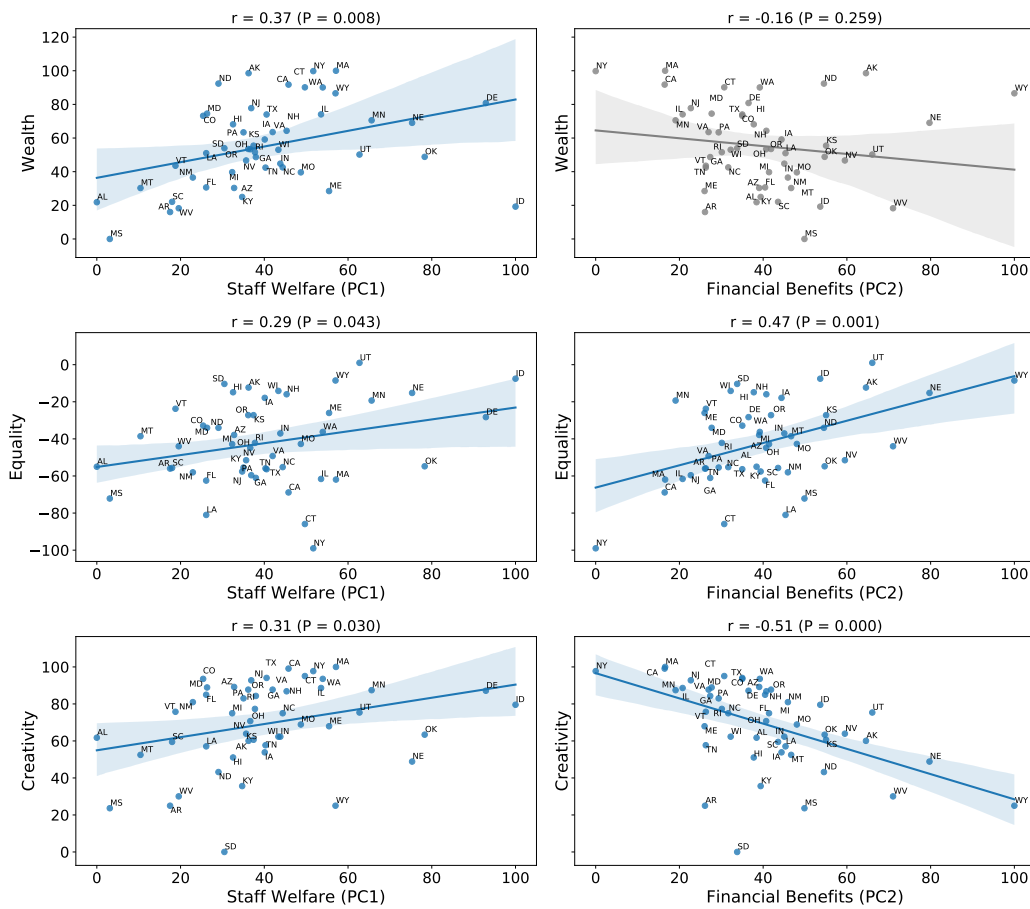


Figure 3: Regression plots between state wealth, equality, and creativity and: a) staff well-being (plots in the first column); and b) financial benefits (plots in the second column). We found staff well-being to be strongly associated with wealth and with the ability to attract the creative class. Financial benefits, on the other hand, was associated with income equality.

artists and musicians, who are known to facilitate the economic prospects of the regions they reside and work in [19]. Our analysis revealed that the creative class is present in states in which companies tend to value employee well-being, fostering supportive and equitable working environments.

RQ3. To what extent investment in employee well-being is predictive of state-level indicators?

A considerable body of literature has shown that state-level socio-economic outcomes (i.e., wealth, equality, creativity) are associated with the agglomeration of the creative class in, crucially, urban areas [11, 19]. To discern what added role our facets of investment in employees play in determining state socio-economic conditions, we predicted our comprehensive staff well-being and financial benefits scores, while controlling for urban population [33]. We used OLS regression models both without and with interaction variables (for those variables that had a correlation higher than |0.1|); since we obtained very similar adjusted R^2 values, we only reported results for the more economical models without interaction variables. To

ease interpretation, all variables were scaled between 0 and 100. As shown in Table 4, the presence of companies investing in and caring for their employees was predictive of wealth (Adj. R^2 of 0.283), equality (Adj. R^2 of 0.279), and creativity (Adj. R^2 of 0.583), and they were so in different ways. A state’s wealth was associated with urban areas in which companies tended to value their employee well-being ($\beta = 0.320$) as opposed to over-focusing on financial benefits. On the other hand, more equal states tended to have companies that focused on both financial benefits ($\beta = 0.532$) and comprehensive well-being ($\beta = 0.343$). Finally, creative states tended to have companies that prioritize comprehensive well-being ($\beta = 0.246$) over the sole focus on financial benefits ($\beta = -0.579$).

5 DISCUSSION

5.1 Implications for Economic Geography and Workplaces

Attributes of companies in creative and prosperous places. Our results enhance the understanding of what makes places creative and

Table 3: Number of reviews and number of offices listed on the company reviewing site across U.S. States, ranked by the number of reviews published between 2008 and 2020 in descending order. Companies in the state of California accumulated the most published reviews, while companies based in Wyoming had the least published reviews. The Pearson correlation between the log number of reviews and the number of companies per state in our data is .98, while the correlation between the log number of reviews in our data and the log of population size across states is .92.

States	# Reviews	# Offices	States	# Reviews	# Offices
CA	57512	104	VA	9480	101
TX	35208	104	CO	7988	102
NY	31645	103	MN	6725	93
IL	20313	103	TN	6274	99
FL	20097	104	MI	5982	100
GA	14437	103	OR	5892	99
WA	14015	100	MO	5601	99
NC	11812	102	MD	5417	98
PA	11548	101	IN	4262	98
AZ	10459	102	WI	3967	89
MA	9839	99	KY	3788	94
NJ	9574	99	CT	3659	91
OH	9567	102	DC	3222	93
			SC	2807	94

economically successful, contributing to the economic geography literature [19]. We have shown that a state’s wealth, equality, and creativity are positively associated with the state being characterized by companies that engage with employee well-being. Put simply, our data suggests that the organizational culture within companies contributes to regional economic prosperity, akin to how urban culture has been found to bolster economic success [32]. This aligns with prior studies indicating that regions with companies prone to occupational depression (essentially, diminished employee well-being) encounter talent deficits and economic stagnation [48], and that stress type experienced by employees is associated with the company stock growth [45].

Role of Organizational Culture and Policies. On the one hand, it is possible that company culture and policies that emphasize employee well-being guide the decisions of the creative class regarding employment locales [38]. These aspects could also later determine the level of creativity exhibited by employees who do join (e.g., previous work has found that focus on *financial rewards* *does* not facilitate “open” (unconstrained) creativity [14]). Conversely, the creative class is renowned for their intrinsic need for, and contribution to, creativity, innovation, and collaboration. Such a dynamic possibly encourages corporate policies to tilt towards fostering employee welfare. An interesting venue for future work, given that most labor regulation occurs at the state-level, is to leverage datasets such as RegData [37] to study how to advance labor policies in the U.S.

Lens of Relational Economic Geography. Our findings can be contextualized using the framework of relational economic geography, which underscores the vital role of interrelations and networks in

economic trajectories [9, 55]. Prioritizing employee well-being can catalyze robust internal and external corporate networks, thereby enriching the broader economic landscape. Internally, an emphasis on well-being can usher in enhanced collaboration and dialogue. Externally, content employees often become stellar brand ambassadors, engendering trust and partnerships with other enterprises, and in turn, elevating broader economic interplay [17]. Building on prior research that credits labor mobility as a primary driver of variability in urban innovation [11], our results suggest that such mobility likely gravitates towards organizations and regions that excel in ensuring employee well-being.

Scrutinizing Spatial Disparities. Our results also hint to potential spatial disparities and the risk of creating enclaves of well-being, where only certain areas benefit from this positive association. Specifically, our data indicates a tighter bond between state equality and companies that prioritize primarily financial benefits, compared to those that holistically value staff well-being. One conceivable explanation for this is the observed inverse relationship between urbanization and equality; concurrently, states with a predominantly rural or agricultural bent seem to favor financial rewards. This triggers a contemplation on the delicate equilibrium between regions that are affluent and those that champion equity. That is to say, up to what point the increase in the presence of creative class and affluence is not going to lead to inequality? Florida touches upon these ideas in his work on the effects of crises viewed as potential resets [21], but future research is needed.

5.2 Implications for the Future of Work

As companies increasingly recognize the importance of employee well-being, we foresee that the future workforce will demand not only financial incentives but also enriched work environments that promote psychological health and creative satisfaction. This shift could redefine talent acquisition and retention strategies, placing companies that prioritize well-being at a competitive advantage. At the same time, it has the potential to shift towards more equitable and sustainable employment practices that align better with the needs and expectations of a diverse and evolving workforce [10, 27].

The growing interconnection between employee well-being and organizational success also invites a reevaluation of work itself. As we move forward, the nature of work will evolve to accommodate more flexible, inclusive, and collaborative work. This evolution could lead to a significant transformation in how work is structured, fostering environments where innovation is not merely a product of economic incentives but a result of genuinely engaging and fulfilling work experiences. Therefore, our understanding of the future of work may see a shift from traditional metrics of productivity to a more holistic view that values well-being and creativity as key drivers of both personal satisfaction and economic viability [7, 43].

5.3 Implications for Computational Social Science Literature

Deep Learning Applications. The use of deep learning to parse and assess fine expressions of employee well-being in such large datasets signifies that advanced computational methods can handle complex, unstructured data and extract novel types of meaningful patterns from them. These advances open up new avenues for computational

Table 4: OLS models predicting state wealth (GDP per capita), equality (inverted Gini coefficient), and creativity index (all three logged) from a stepAIC analysis where the dependent variables are employee well-being, financial benefits, and urban population. All variables were scaled between 0 and 100 to aid interpretation. Statistically significant coefficients are reported; insignificant ones are marked with the symbol ‘-’.

	Wealth	Equality	Creativity
Const	12.025 (9.825)	-63.595*** (11.554)	52.339*** (9.553)
Urban Population	0.436*** (0.129)	-0.200* (0.118)	0.436*** (0.098)
Financial Benefits (PC2)	-	0.532*** (0.159)	-0.579*** (0.131)
Employee Well-Being (PC1)	0.320** (0.156)	0.343** (0.140)	0.246** (0.116)
Observations	50	50	50
R ²	0.312	0.323	0.571
Adjusted R ²	0.282	0.279	0.543
Residual Std. Error	20.950(df = 47)	18.743(df = 46)	15.496(df = 46)
F Statistic	10.633*** (df = 2.0; 47.0)	7.326*** (df = 3.0; 46.0)	20.402*** (df = 3.0; 46.0)

Note:

*p<0.1; **p<0.05; ***p<0.01

social science research, including revisiting some of the research questions about corporations tackled in the recent years with less advanced methods. This work underscores the possibility of integrating computational social science methods with more traditional social science disciplines such as economic geography.

Replicability and Expansion. Given the right datasets, this computational approach can be applied beyond the U.S. context, allowing for global comparisons and in-depth regional and cross-cultural studies.

5.4 Limitations and Future Research

Our work has three main limitations. First, the number of companies under study is limited. We were able to study 104 major companies, largely because the other companies had a limited number of reviews that did not allow for automatic processing. Second, our analyses focused at the company level. Future work could replicate our methodology at industry sector level. However, such an analysis would require the collection of additional data to ensure comprehensive coverage of companies across industry sectors. Third, there is a lack of causal claims. Given our data, we could not assess the causal direction between caring about employee well-being and socio-economic returns. More specifically, we could not assess whether focusing on employee well-being led to better socio-economic returns (e.g., stock growth, increased wealth, more equality, more creativity), whether better socio-economic conditions created a breeding ground for fostering such a well-being, or whether these two causal relations were in a self-reinforcing cycle.

6 CONCLUSION

Leveraging Deep-Learning techniques in Natural Language Processing, we analyzed over 350K employee reviews from 104 prominent U.S. companies, revealing a duality when investing in employees:

a) over-focus on financial benefits, and b) investing in comprehensive well-being efforts, encompassing not only financial benefits but also benefits related to health, education, diversity, and atmosphere. Our study uncovers a distinct geographic distribution of companies primarily emphasizing one approach over the other. This research pioneers the spatial examination of the associations between internal corporate efforts and macroeconomic conditions of the U.S. states. Our work demonstrates the value of computational social science methodologies within the realm of economic geography, highlighting the benefits for future research to tap into novel corporate data sources similar to ours.

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