

# **THE MARKET'S BLIND SPOT**

**EMPLOYEE SATISFACTION AS A SOURCE OF ALPHA**

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Master Thesis  
Stockholm School of Economics  
2024

# **The Market's Blind Spot: Employee Satisfaction as a Source of Alpha**

## Abstract

This thesis evaluates the investment strategy proposed by Edmans (2011) by examining whether investing in companies with high employee satisfaction (ES) generates abnormal returns. Using data from 2014 to 2023, including 4,380 company-month observations from Fortune's "Best Companies to Work For" list, we find that a value-weighted portfolio yields an annual six-factor alpha of 9.12%. The results remain robust when controlling for industry, firm characteristics, and outliers. Expanding upon Edmans' framework, we introduce Glassdoor's list of "Best Places to Work" as an alternative proxy for high ES firms. The Glassdoor-based portfolios yield higher and statistically significant alphas across both equal- and value-weighted specifications. Notably, excess returns for both lists are strongest during the post-COVID-19 era. These findings suggest that Edmans' strategy remains effective in both stable and volatile markets and can be further enhanced using Glassdoor data.

## Keywords:

Employee Satisfaction, Abnormal Returns, Investment Strategy

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## Acknowledgments:

We would like to express our gratitude to our supervisor, Ting Dong, for valuable discussions and insightful feedback throughout the development of this thesis. We also thank Jan Starmans for introducing us to Edmans' paper in his Sustainable Finance course.

## Master Thesis

Master Program in Accounting, Valuation and Financial Management  
Stockholm School of Economics

Liam Claréus and Pi-Lillebi Hermansson, 2024

**Abbreviations**

BC = Best Company. Company on Fortune or Glassdoor list of “Best companies to work for”.

ES = Employee Satisfaction

EMH = Efficient Market Hypothesis

EW = Equal-Weighted

VW = Value-Weighted

CAR = Cumulative Abnormal Returns

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*“US research firm Irrational Capital has created a novel approach to stock picking that largely abandons traditional financial metrics in favour of a system designed to select companies based on how happy their workers are.”* – Financial Times, September 2024

## **1. Introduction**

### **1.1 Purpose & Research Question**

In an influential paper published over a decade ago, Edmans (2011) demonstrated that a portfolio based on the “100 Best Companies to Work For in America” earned a positive and significant alpha. His findings challenge the Efficient Market Hypothesis (EMH), suggesting that the stock market fails to fully incorporate the value of human capital as an intangible asset. However, given that the paper is now thirteen years old, it is worth questioning whether this investment strategy remains effective in generating superior returns.

Hence, the research question of our paper is: *Does investing in companies with high employee satisfaction deliver abnormal returns?* To answer this question, we follow a methodology similar to that of Edmans (2011).

### **1.2 Focus of Study & Delimitations**

Our study is confined to companies listed on U.S. stock exchanges over the period 2014-2023. This geographic scope ensures consistency with Edmans (2011) and allows for comparability with his findings. Additionally, U.S. equity markets are among the largest and most liquid in the world, making them particularly relevant for studies of market efficiency and investment strategies. The focus on U.S.-listed companies is further justified by the fact that the majority of the “Best Companies to Work For” are U.S.-listed. The 2014-2023 time period allows us to evaluate the continued performance of this investment strategy over the most recent decade, including the effects of significant market disruptions such as the COVID-19 pandemic.

This thesis adopts an investor perspective. Therefore, it does not aim to test the causal mechanisms linking employee satisfaction (ES) and firm performance or explore ways of improving ES at the firm level. Instead, it investigates whether investing in a portfolio of firms with high ES yields positive abnormal returns.

### **1.3 Main Findings**

Our findings demonstrate that a value-weighted (VW) portfolio of the “100 Best Companies to Work For” generated a six-factor alpha of 9.12% annually from 2014 to 2023. This alpha remains robust when benchmarked against both an industry-matched portfolio and a characteristics-matched portfolio. Robustness checks, which include an alternative asset pricing model and adjustments for outliers, further support the results. Notably, excess returns were particularly pronounced during turbulent periods, such as the post-COVID-19 era (2020-2023).

In contrast to Edmans (2011), our results show that an equal-weighted (EW) portfolio based on the Fortune list does not generate statistically significant alpha. Expanding upon Edmans’ framework, we introduce Glassdoor’s list of “Best Places to Work” as an alternative proxy for

high ES firms. Using this list, we find consistently higher abnormal returns compared to the Fortune list. Notably, the Glassdoor-based portfolios deliver significant alpha under both EW and VW methodologies, highlighting the Glassdoor list's robustness and broader applicability. These findings suggest that while Edmans' original strategy remains effective when VW, it can be further enhanced by incorporating the Glassdoor list, which is both robust across weighting methodologies and superior in terms of generating returns.

Furthermore, this study highlights the persistent undervaluation of ES by the stock market. Specifically, we find that firms on the Fortune list and Glassdoor list achieve VW CARs of 52.70% and 68.13%, respectively, in excess of the market over a five-year period following their inclusion on the respective lists. The CARs do not dissipate over the five-year study period, suggesting that the window during which high-ES firms are able to generate abnormal returns extends beyond the observed timeframe.

#### 1.4 Contributions

This thesis makes several key contributions to the literature on ES and financial performance, as well as to the practical field of investment strategies. First, our study extends the seminal work of Edmans (2011) by evaluating the continued efficacy of investing in companies with high ES over a more recent period (2014-2023), marked by significant market events such as the COVID-19 pandemic. By confirming the persistence of positive alpha in VW portfolios derived from Fortune's "100 Best Companies to Work For" list, we reinforce the relevance of ES as a critical yet undervalued determinant of investor returns.

Second, we advance the existing literature, which has predominantly relied on Fortune's "100 Best Companies to Work For" list as the primary proxy for high-ES firms, by introducing the Glassdoor "Best Places to Work" list as an alternative measure. This addition refines the investment strategy of constructing portfolios based on high-ES firms by demonstrating that the Glassdoor list, with its greater emphasis on employee reviews data, is more effective for generating returns and capitalizing on the mispricing of the benefits of high ES.

Third, our results contribute to the debate on market efficiency. While the Efficient Market Hypothesis (EMH) suggests that all publicly available information, including ES, should be fully reflected in stock prices, our findings indicate persistent abnormal returns for high-ES firms, particularly during periods of market turbulence. These findings challenge the assumption of market efficiency and suggest that ES remains underappreciated by the broader investment community.

Lastly, this thesis provides actionable insights for investors. By demonstrating the financial benefits of incorporating ES into investment strategies, it offers an evidence-based approach to capturing abnormal returns.

The rest of this paper is structured as follows. Section 2 reviews the relevant literature and theoretical frameworks on ES and its relationship with both firm performance and financial performance. Section 3 outlines the study's hypothesis. Section 4 details the data and methodology used in the analysis. Section 5 presents the results, encompassing the baseline test findings, robustness checks, extensions to the baseline analysis, and an evaluation of the

longevity of abnormal returns. Section 6 discusses the findings in the context of prior research, and Section 7 concludes the paper with a summary of contributions, limitations, and suggestions for future research.

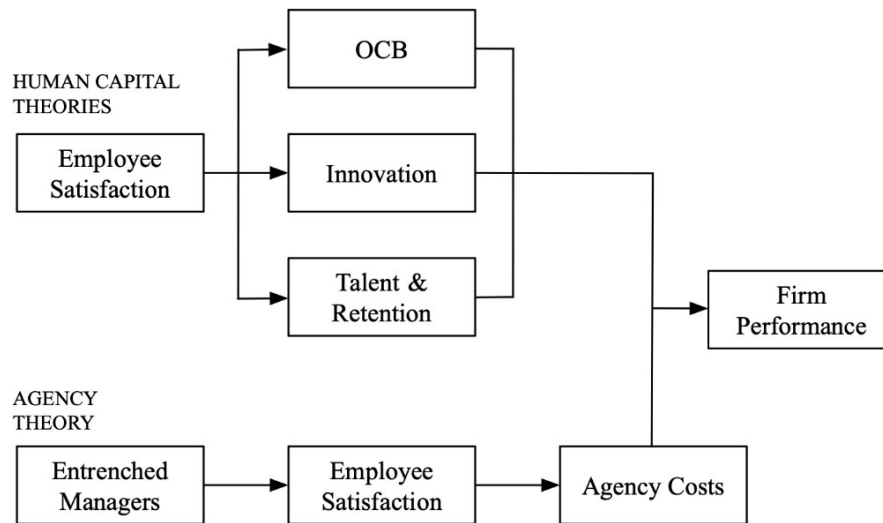
## **2. Literature Review**

This literature review is divided into two main sections. The first examines the theoretical and empirical research on the relationship between ES and firm performance. This focus is essential because the investment strategy of holding high-ES firms to generate abnormal returns relies on the premise that ES contributes to better firm outcomes. Understanding the mechanisms through which ES may enhance or diminish performance provides important context for the strategy. Furthermore, linking observed financial returns to strong theoretical foundations mitigates the risk that potential abnormal returns are merely the result of chance or short-term anomalies. By exploring this body of research, we establish a more robust basis for the investment strategy and its potential for consistent performance.

The second section of the literature review explores how a potential positive relationship between ES and firm performance may translate into financial performance, shifting the focus from accounting metrics to stock returns. This discussion ties directly to the study's objective of evaluating the viability of an investment strategy leveraging high-ES firms to deliver superior returns. Two contrasting perspectives are presented: the efficient market hypothesis, which posits that any benefits of high ES are already reflected in equity prices, leaving no room for future abnormal returns, and the behavioral finance perspective, which allows for the possibility of long-term market mispricing and, consequently, alpha-generating investment strategies based on high-ES firms.

The relationship between ES and firm performance remains a contested issue in the literature. Theoretical tension exists over whether investments in employee well-being are value-accretive, with human capital theories advocating for their positive impact, while agency theory offers a contrasting view. According to human capital theories, increased ES enhances firm performance through mechanisms such as Organizational Citizenship Behavior (OCB), innovation, and talent attraction and retention. In contrast, agency theory suggests that high levels of ES may indicate the presence of entrenched managers using their power for personal gain, at the expense of shareholders. This leads to undesirable costs, referred to as agency costs, which negatively affect firm performance. Figure 1 provides an overview of the dynamic between ES and firm performance from the perspective of the two competing theories.

**Figure 1.** An illustration of the relationship between ES and firm performance from two opposing theories.



## 2.1 Human Capital Theories

Human capital theories identify several mechanisms through which high ES may improve firm performance. Among these, three channels stand out: productivity and motivation, innovation, and talent retention and attraction.

### 2.1.1 Productivity & Motivation

A significant body of research highlights the impact of ES on productivity and motivation. Organ (1977) reinterprets the relationship between ES and performance through the lens of social exchange theory. This theory suggests that when employees perceive they are treated well, they feel an obligation to reciprocate with positive behaviors. While job satisfaction may not always directly lead to higher productivity, it fosters a sense of commitment that manifests in Organizational Citizenship Behavior (OCB). OCB includes voluntary, prosocial actions such as helping co-workers, maintaining a positive work environment, and adhering to organizational norms.

Building on this, Bateman and Organ (1983) find a significant positive correlation between job satisfaction and OCB, indicating that satisfied employees are more likely to engage in discretionary behaviors that benefit the organization. Organ and Ryan (1995), through a meta-analysis of 55 studies, further confirm that job attitudes like job satisfaction and organizational commitment are strong predictors of OCB, solidifying the link between ES and supportive workplace behaviors.

Moving from predictors to outcomes, Podsakoff et al. (1997) demonstrate that OCB, particularly helping behaviors, contributes to both the quantity and quality of work group output. However, due to the cross-sectional nature of their data, it remains uncertain whether OCB drives performance improvements or whether more productive teams foster higher levels

of OCB. Addressing this limitation, Koys (2001) uses longitudinal data to show that OCB is predictive of subsequent business unit profitability, providing stronger evidence that OCB positively influences performance over time.

Akerlof (1982) provides further evidence for the reciprocity view, suggesting that treating employees well – such as paying higher-than-market wages – motivates workers to reciprocate with greater effort, ultimately improving productivity. Similarly, Levine (1992) and Wadhvani and Wall (1991) demonstrate that higher wages lead to increased productivity, reinforcing the notion that fair employee treatment enhances firm performance. Konrad and Mangel (2000) extend this idea to work-life programs, showing that such initiatives encourage employees to exert greater effort, thus contributing to improved organizational performance.

### 2.1.2 Innovation

In addition to productivity, ES also plays a vital role in fostering innovation. Employee-friendly workplaces create an environment conducive to creative thinking and knowledge sharing. Chen, Leung, and Evans (2016) find that firms with better employee relations produce more patents and sustain R&D investments even during economic downturns, suggesting that ES promotes resilience in innovation activities. Chen, Chen, Hsu, and Podolski (2016) further demonstrate that favorable employee treatment leads to both a greater quantity and quality of innovation, with firms producing more impactful patents.

Mao and Weathers (2019) build on these findings, showing that firms that treat employees well not only generate more patents but also focus their innovation efforts on core business areas, enhancing the economic value of their innovations. Wei et al. (2020) provide evidence that improved employee welfare in manufacturing firms leads to higher-quality innovation, largely through retaining skilled employees and increasing the efficiency of R&D personnel. This retention of talent ensures continuity and cumulative knowledge development, which are critical for innovation.

### 2.1.3 Talent Retention & Attraction

Another key benefit of high ES is its role in talent retention and attraction. High turnover can be costly for firms, with Cascio (2006) estimating that replacing an employee can cost up to twice their annual salary due to recruitment, training, and lost productivity. Huselid (1995) finds that human resource practices such as employee participation, extensive training, and internal promotions reduce turnover and improve productivity, leading to better financial outcomes. Sheridan (1992) also demonstrates that organizational cultures that emphasize interpersonal relationships and employee well-being are linked to higher retention rates, particularly among top performers, which helps reduce turnover costs and sustain firm performance.

Studies by Allen et al. (2010) and Lee et al. (1999) further reinforce the retention benefits of job satisfaction, as they find a negative relationship between job satisfaction and employee turnover. In terms of talent attraction, Turban and Greening (1997) show that firms with strong

corporate social performance are more attractive to prospective employees, suggesting that companies known for treating their stakeholders well, including employees, are better positioned to attract high-quality talent.

In conclusion, human capital theories argue that ES enhances firm performance through mechanisms such as improved productivity, increased innovation, and better talent retention and attraction. However, this perspective contrasts with agency theory, which suggests that high levels of ES might be pursued at the expense of shareholder value.

## 2.2 Agency Theory

Agency theory, as developed by Jensen and Meckling (1976), is one of the most frequently cited frameworks for understanding potential conflicts between managers and shareholders, particularly when examining whether ES aligns with shareholder interests. The theory does not straightforwardly predict that the relationship between ES and firm performance is negative. Instead, it offers a more nuanced perspective: managers may use employee treatment to advance their own personal interests, which can sometimes benefit the firm but, in other cases, can lead to outcomes detrimental to shareholder value. This misalignment arises from the separation of ownership and control, creating a potential for agency costs, where managers act in ways that serve their own goals rather than those of the shareholders.

When managers hold a substantial share of a firm's equity, their financial incentives align more closely with those of shareholders, as they stand to gain or lose significantly from the firm's performance. However, as managerial ownership decreases – often as a consequence of external equity financing – this alignment weakens. Managers with diminished ownership stakes may become less motivated to maximize firm value, instead prioritizing actions that serve their own interests. As Jensen and Meckling highlight, this divergence leads to agency costs, which occur when managerial decisions – such as indulging in personal perks or reducing effort – come at the expense of profitability.

A key issue associated with reduced managerial ownership is the increased discretion managers have in prioritizing their personal welfare. As their ownership stakes shrink, they bear only a small portion of the financial consequences of their decisions, with shareholders shouldering the bulk of the costs. For instance, a manager with only 5% ownership in the firm will only experience 5% of the financial impact from non-productive expenditures, while the remaining 95% falls on shareholders. This misalignment may encourage managers to indulge in non-essential benefits, such as luxurious offices or personal perks, rather than focus on decisions that enhance firm value.

Research by Cronqvist et al. (2009) provides concrete evidence of how entrenched managers, those with significant control but low financial ownership, tend to prioritize their own comfort by paying higher wages to employees, particularly those closer to them. These inflated wages provide private benefits to managers, such as reduced bargaining effort and improved relationships with employees, which in turn make their work environment more comfortable.

However, this behavior tends to diminish when managers hold larger financial ownership, aligning their interests more closely with shareholders.

Similarly, Call et al. (2016) highlight another dimension of this issue, demonstrating that managers may grant higher compensation to employees for reasons unrelated to shareholder value. They find that firms involved in financial misreporting are more likely to issue stock options to rank-and-file employees, thus aligning employees' financial interests with the continuation of the firm's misconduct and discouraging whistle-blowing. This use of compensation as a strategic tool to protect managerial interests underscores how self-serving behavior can further entrench managers at the expense of shareholders.

Further expanding on the theme of managerial discretion, Bertrand and Mullainathan (2003) explore how, when insulated from external pressures, managers often prioritize their own comfort over shareholder interests. In their study of antitakeover laws, they observe that managers, shielded from hostile takeovers, tend to avoid difficult decisions such as layoffs or expansion. Instead, they focus on maintaining a "quiet life" by increasing wages and avoiding actions that may disrupt the work environment. This behavior leads to stagnation in firm growth and a decline in profitability, illustrating how managerial preferences for comfort can override the objective of value maximization.

The work of Landier et al. (2009) adds nuance to this discussion by introducing geographic proximity as another factor influencing managerial decisions. Their study reveals that managers are less likely to lay off employees in divisions closer to corporate headquarters, even when performance might justify such actions. Social factors, such as personal ties and proximity, play a significant role in shaping these decisions, again resulting in a misalignment between managerial and shareholder interests. In contrast, more distant divisions are more likely to face layoffs, reinforcing the idea that managerial discretion in employee treatment is not always driven by rational, value-maximizing objectives.

A similar misalignment is observed by Hemingway and Maclagan (2004) in the context of corporate social responsibility (CSR). They argue that managers often engage in CSR initiatives driven by their personal values rather than shareholder interests. While such actions might reflect commendable ethical commitments, they can result in increased costs and reduced profitability, creating further agency conflicts. This reinforces the broader theme that managerial discretion, when influenced by personal motives, can result in decisions that deviate from the firm's economic goals.

Finally, the research by Atanassov and Kim (2009) and Pagano and Volpin (2005) underscores the extent to which managers can align with employees to secure their positions, often at the expense of shareholder value. Atanassov and Kim show that in countries with strong labor protections, underperforming managers can form alliances with employees to avoid layoffs, often leading to value-destroying asset sales rather than necessary restructuring. Similarly, Pagano and Volpin highlight how managers, by offering generous wages and securing long-term labor contracts, can create worker alliances that fend off hostile takeovers. By increasing

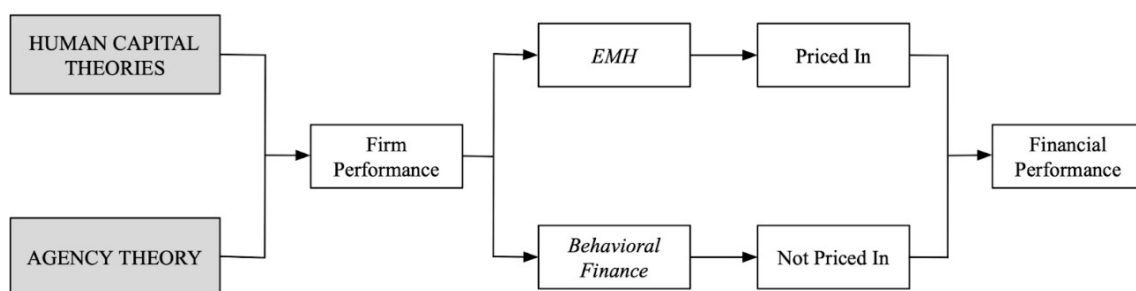
takeover costs and ensuring worker support, managers further entrench themselves in their positions, prioritizing their personal interests over shareholder value.

In conclusion, with regard to the relationship between ES and firm performance there is theoretical friction between human-capital theories and agency theory. With human-capital theories proclaiming that ES raises firm performance through, for example, improved employee productivity and motivation, innovation and talent retention and attraction. While, agency theory raises concern that, in cases of weak corporate governance and investor protection, ES may be achieved at the detriment of shareholder value maximization.

### 2.3 Do Stock Prices Reflect Employee Satisfaction?

If the relationship between high ES and greater firm performance is indeed positive, as human capital theories suggest, it remains an open question whether these potential benefits are fully reflected in equity prices. This is crucial in determining whether alpha can be generated from an investment strategy that uses high ES as a screening criterion for portfolio formation. According to the Efficient Market Hypothesis (EMH), all price-sensitive information available to investors would quickly be incorporated into stock prices, thereby raising prices and eliminating any potential for excess returns. In contrast, behavioral finance argues that due to inherent cognitive biases and market inefficiencies, stock prices are often mispriced, creating opportunities for alpha. Figure 2 below expands on Figure 1 by illustrating the relationship between firm performance (based on accounting metrics) and financial performance (the returns investors realize). This distinction is important, as a firm with an overvalued stock may perform exceptionally well operationally, yet still deliver subpar returns to its investors.

**Figure 2.** An overview of the link between ES, firm performance, and financial performance. For the sake of brevity, the detailed relationship between ES and firm performance, as presented in Figure 1 through the lenses of human capital theories and agency theory, has been simplified in this figure.



#### 2.3.1 Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH), as first formalized by Fama (1970), posits that in an efficient market, asset prices fully reflect all available information. If ES positively impacts firm performance, rational investors would incorporate this information into their expectations, driving up stock prices until any potential for abnormal returns is eliminated. According to the semi-strong form of EMH, which holds that publicly available information is swiftly priced in,

any advantage from investing in high-ES firms should be short-lived, as the benefits of ES would soon be reflected in the firm's stock price.

While ES may be perceived as an intangible factor that is difficult to observe or quantify, this is less of a concern for the firms in our study. These companies are included in Fortune's well-publicized "100 Best Companies to Work For" list, which has been released annually since 1998, making the information easily accessible to the broader market. Research by Edmans (2011) demonstrated that constructing a portfolio of these firms yielded positive abnormal returns. However, given that Edmans' paper is now over 13 years old and widely cited, it is reasonable to expect that the alpha from such an investment strategy may diminish as market participants become increasingly aware of the relationship between ES and firm performance.

This pattern is consistent with the findings of Bebchuk et al. (2013), who showed that governance-based investment strategies, which had once produced excess returns, lost their ability to generate alpha after being widely publicized and adopted. As more investors incorporate such information into their models, the market gradually adjusts, reducing the potential for abnormal returns. Similarly, ES-based strategies that once delivered alpha are likely to lose their effectiveness over time, as the benefits of high ES become fully priced into stock valuations. Therefore, while ES may continue to enhance firm performance, the opportunity to exploit this relationship for excess returns is likely to fade as markets adapt.

Contrary to the EMH, Boustanifar and Kang (2022) present evidence that alpha can still be earned from a portfolio constructed based on the Fortune list, even nine years after Edman's popularized the strategy. According to traditional financial theory, this persistence of abnormal returns may not represent inefficiency but instead compensation for higher risk. If these returns were true alpha, rational investors would arbitrage away any such opportunities by bidding up prices, leading to lower future returns. This raises questions about whether the observed alpha is indeed due to inefficiencies in the market or simply a reflection of risk premia associated with holding the portfolio of the Fortune firms. Boustanifar and Kang (2022) address this concern by employing an extensive set of asset pricing models. These models, including Carhart, Fama-French six-factor, q-factor, q5-factor, and AFP, account for a wide range of risk factors. Despite this extensive modeling, the study still finds persistent abnormal returns, suggesting that the alpha cannot be fully explained by unpriced risk.

### 2.3.2 Behavioral Finance

While the EMH assumes that all available information, including the potential benefits of high ES, is reflected in stock prices, behavioral finance offers a different perspective. It questions the market's ability to accurately price such an intangible asset and, as a result, expects the market to continue undervaluing ES for several reasons. First, attention is a limited cognitive resource (Kahneman, 1973). Consequently, while investors may have access to data on ES, this information could be overlooked in favor of more readily available and traditional valuation inputs, such as those found in financial statements. Additionally, as an intangible asset, ES requires greater effort to be "financialized," or translated into a quantifiable measure,

a process that is inherently difficult and often involves subjective, imprecise assessments, making it challenging to integrate into conventional valuation models (Arjaliès and Bansal, 2018).

Furthermore, while Edmans (2011) indicates that certain Socially Responsible Investment (SRI) strategies – specifically those using employee welfare as a screening criterion – can lead to higher returns for investors, other studies in the field of SRI have produced conflicting results (Gollie and Pouget, 2014; Luo and Balvers, 2017; Pastor et al., 2021). Given these mixed findings, investors may be reluctant to attribute value to ES in their valuation models, allowing the market to continue undervaluing this asset. In conclusion, the persistent abnormal returns found by Boustanifar and Kang (2022) may not arise from risk compensation but rather from the market’s inefficiency in fully appreciating the long-term benefits of ES.

### 2.3.3 Performance During Crisis

While high-ES firms may earn abnormal returns under a behavioral finance view of the capital market, it is of interest to investors to understand how these firms perform during times of crisis, when downside protection and recession resilience become essential. Carvalho and Areal (2016) find that firms listed in Fortune’s “100 Best Companies to Work For” exhibit resilience during financial crises, maintaining stable performance despite market downturns. This suggests that high ES provides a protective advantage in adverse conditions. The authors attribute this resilience to a “reputation shield,” where strong employee relations foster trust among stakeholders, helping to sustain firm performance when market confidence declines. Boustanifar and Kang (2022) also show that high-ES firms achieve their greatest excess returns specifically during crisis periods.

Shan and Tang (2023) extend this line of research by examining Chinese firms during the COVID-19 pandemic. They find that higher ES firms outperformed their lower ES counterparts during the initial market shock, with less severe stock price declines. The outperformance persisted in the months that followed, suggesting that ES contributes to firm resilience during crises. The authors argue that high employee morale enabled firms to better navigate the operational challenges posed by the pandemic, particularly in managing remote work and implementing no-pay leave policies, which helped to alleviate financial pressures. Employees in high-ES firms were likely more productive while working remotely, even without direct supervision. In contrast, firms with lower ES struggled to gain the necessary support from their workforce, underscoring the critical role of ES in sustaining organizational stability during crises.

In addition to research on ES, related studies on corporate social responsibility (CSR) provide further insights into the role of strong stakeholder relationships in firm performance during economic downturns. Lins et al. (2017) find that firms with high CSR experienced significantly higher stock returns during the Great Financial Crisis compared to low-CSR firms. These firms also demonstrated better profitability, higher sales per employee, and stronger sales growth during the crisis, indicating that CSR helped sustain operational performance under adverse

conditions. The authors argue that CSR investments can act as an “insurance policy,” providing a buffer during periods of market-wide distrust, such as the Great Financial Crisis. Firms that had built strong relationships with stakeholders through CSR activities were better equipped to withstand the crisis.

Ding et al. (2020) extend these findings to the COVID-19 pandemic, showing that firms with stronger CSR practices prior to the pandemic saw better stock price performance during the crisis. The authors suggest that these CSR practices likely strengthened relationships with stakeholders, enabling these firms to better weather the disruptions caused by the pandemic. However, Bansal et al. (2022) offer a contrasting view, finding that socially responsible investments (SRI) outperform primarily during good economic times, but tend to underperform during downturns. Their study suggests that the performance of high-SRI firms is driven by investor preferences, which are wealth-dependent. During prosperous periods, investors prioritize social responsibility, leading to high demand for “good” stocks. However, in recessions, when investors focus more on wealth preservation, demand for high SR stocks declines, causing them to underperform.

### **3. Hypothesis**

This study investigates the research question: *Does investing in companies with high employee satisfaction (ES) yield abnormal returns?* The relationship between ES and financial performance remains contested in the literature, with studies offering both support and counterarguments regarding its potential to drive superior investor returns.

On one hand, human capital theories argue that high ES enhances firm performance through mechanisms such as increased productivity, innovation, and effective talent retention (Organ, 1977; Chen et al., 2016; Huselid, 1995). Satisfied employees are more motivated and engaged, leading to higher organizational citizenship behaviors and operational efficiency (Organ & Ryan, 1995; Koys, 2001). High ES also fosters innovation, as employee-friendly workplaces provide an environment conducive to creativity and sustained R&D investments (Chen et al., 2016; Mao & Weathers, 2019). Furthermore, firms with high ES are better positioned to attract and retain top talent, which can reduce turnover costs and enhance long-term competitiveness (Sheridan, 1992; Turban & Greening, 1997). These mechanisms translate into stronger firm performance, which may, in turn, yield abnormal returns.

There is empirical evidence supporting this view. Edmans (2011) demonstrated that portfolios of firms included in Fortune’s “100 Best Companies to Work For” produced significant abnormal returns, a finding later corroborated by Boustanifar and Kang (2022). Behavioral Finance theories provide additional support, suggesting that cognitive biases and the intangible nature of ES may result in its underpricing by the market (Kahneman, 1973; Arjaliès & Bansal, 2018). High-ES firms also appear more resilient during economic crises, maintaining stable performance even in volatile conditions (Carvalho & Areal, 2016; Shan & Tang, 2023). This resilience, often attributed to a “reputation shield” and enhanced employee commitment, suggests that high-ES firms may offer consistent alpha over time, even under challenging market conditions.

On the other hand, the Efficient Market Hypothesis (EMH) presents a strong challenge to the hypothesis. If high ES genuinely enhances firm performance, rational investors should incorporate this information into stock prices (Fama, 1970). As a result, any potential for abnormal returns would disappear as markets efficiently price in the benefits of ES. This effect is likely amplified by the widespread publication of ES-based strategies, such as those documented by Edmans (2011). Boustanifar and Kang (2022) themselves note that alpha generation may diminish as market participants increasingly incorporate ES into their valuation models, a trend observed in other domains, such as governance-based investment strategies (Bebchuk et al., 2013).

Agency theory further complicates the case for high ES by highlighting its potential costs. Managers with low ownership stakes may prioritize personal interests, such as avoiding conflict with employees or indulging in excessive perks, over maximizing shareholder value (Jensen & Meckling, 1976; Cronqvist et al., 2009). In such scenarios, high ES metrics may reflect managerial self-interest rather than value creation. Moreover, during periods of economic distress, investors may shift their focus away from intangible factors like ES toward more immediate priorities, such as liquidity and wealth preservation, further diminishing the relevance of ES as a driver of returns and challenging the efficacy of high-ES investment strategies.

Taken together, these contrasting perspectives highlight the complexity of the relationship between ES and financial performance. While arguments grounded in market efficiency and agency theory challenge the existence of a positive relationship, the broader body of evidence supporting a link between high ES and superior financial performance remains compelling. We therefore propose the following hypothesis: *Investing in companies with high employee satisfaction delivers abnormal returns.*

#### **4. Data & Method**

This section describes the data sources and methodological framework used to investigate whether investing in companies with high ES generates abnormal returns. Section 4.1 discusses the proxies used for firms with high ES, focusing on the Fortune “100 Best Companies to Work For” list and incorporating an equivalent list by Glassdoor to serve as an alternative measure. Section 4.2 explains the setup of the baseline test, detailing the robustness checks applied to validate the findings and the extensions to the baseline test introduced to explore the drivers of the results and how the strategy performs under varying market conditions. Section 4.3 outlines the CAR methodology, which assesses the persistence of abnormal returns up to four years beyond the one-year time horizon post list inclusion that is the focus of the baseline test.

##### **4.1 Proxies for Firms with High Employee Satisfaction**

In line with Edmans’ methodology, we use Fortune’s “Best Companies to Work For” list as a proxy for firms with high ES. Published annually at the beginning of the year, this list has ranked the top 100 companies – both public and private – for over 40 years. Although the list is published by Fortune, the evaluation is conducted by the Great Place to Work® Institute, and companies must apply for inclusion.

The core of the assessment is the Trust Index™ Survey, completed by employees at each participating company. This survey comprises 60 questions covering various aspects of workplace culture, such as trust in management, respect, fairness, and camaraderie. Companies are required to survey either the entire workforce or a statistically valid random sample, ensuring that a broad range of employee experiences – from the front line to executive levels – is represented. Additionally, the For All™ Methodology is applied to ensure consistent workplace experiences across different roles, backgrounds, and demographics.

Alongside the Trust Index™ Survey, companies submit a Culture Brief™, which details their policies, benefits, and practices, offering further insight into their efforts to create a positive work environment. Although companies pay for access to the Trust Index™ Survey, their ranking on the Fortune list is based solely on employee feedback and an objective assessment of workplace practices.

Since Edmans (2011), the list selection process has become more extensive. The survey now includes additional questions, and the current methodology places greater emphasis on fair representation across the workforce. Companies are also required to provide more detailed information on their workplace improvement initiatives.

#### 4.1.1 Glassdoor as an Alternative Proxy

As a robustness check, we use another proxy for high ES: Glassdoor’s “Best Places to Work” list in the United States, focusing specifically on the “Top Large” companies category. The Glassdoor list is incorporated into all tests, which are detailed in the subsequent method section, allowing each test to be performed twice – once using the Fortune list as the primary proxy for high-ES firms and again using the Glassdoor list. This approach serves two purposes: first, to evaluate the generalizability of our findings based on the Fortune list; and second, to compare the performance of the two lists in generating alpha. By including the Glassdoor list, we aim to provide a broader perspective on the relationship between ES and abnormal returns.

Published annually in January, this list has been in existence since 2009, initially featuring 50 companies and expanding to 100 companies (both public and private) since 2018. Unlike Fortune’s list, where companies apply for consideration, Glassdoor’s rankings are based entirely on voluntary and anonymous employee feedback. Employees submit reviews through the Glassdoor platform, rating their employer on work-related factors such as career opportunities, senior management, compensation, and work-life balance. The reviews include both quantitative ratings and qualitative feedback, which Glassdoor uses to compile its rankings.

Glassdoor’s proprietary “Glassdoor Review Analysis” methodology considers the quantity, quality, and consistency of employee reviews. To qualify for the list, companies must receive a minimum number of reviews. The methodology also ensures that feedback is consistent across various job functions, departments, and employee levels, providing a representative view of the employee experience. Furthermore, recent reviews are weighted more heavily to capture a current perspective on the company. Importantly, Glassdoor’s rankings are independent of corporate influence; companies cannot pay for a higher position on the list.

## 4.2 Baseline test

This section describes the methodology of our baseline test, which examines whether investments in high-ES firms generate abnormal returns. To perform this test, we construct two portfolios of U.S.-listed companies included in Fortune’s “100 Best Companies to Work For” list: one EW and one VW, covering the period from 2014 to the end of 2023. The performance of these portfolios is evaluated using the Fama-French six-factor model and the Carhart four-factor model to determine whether they yield significant alpha.

**Table 1.** Sample selection for the Fortune list.

Sample Selection	# obs
Total number of firms on Fortune's BCs list from 2014-2023	1000
Less: Non-public firms	(570)
Less: Firms not listed in the US	(49)
Final sample	<u>381</u>
Number of unique firms	88

To compile the list of Fortune firms, we manually assembled each year’s “100 Best Companies to Work For” list from 2014 to 2023 as published on the Fortune website. Each company’s official ticker symbol was identified using Compustat, retaining only publicly traded firms while companies without an assigned ticker were excluded from the sample, see Table 1 (for the Glassdoor list, see Table A1 in the Appendix). The portfolio is initially formed at the end of April 2014 and is rebalanced annually on this same date to reflect the latest Fortune list. Although the list’s exact publication date varies, falling between mid-January and early April, we standardize the portfolio formation date to the end of April to allow ample time for potential effects of ES to be incorporated into stock prices and to simplify the practical adoption of this investment strategy.

Monthly return data for U.S.-listed companies from 2014 to 2023 were obtained from the CRSP database via the Wharton Research Data Services (WRDS) platform. The CRSP dataset includes monthly stock returns, share prices, shares outstanding, and SIC codes, enabling us to calculate firm market capitalizations for constructing VW portfolios. SIC codes further support the creation of an industry-matched portfolio benchmark. After merging the CRSP data with the Fortune list data, we restrict the dataset to only U.S.-listed firms.

The excess returns of the Fortune portfolio are calculated relative to three benchmarks: (1) the risk-free rate, (2) an industry-matched portfolio, and (3) a characteristics-matched portfolio. The risk-free rate is represented by the one-month Treasury bill rate.

The industry-matched portfolio is constructed using the 49-industry classification by Fama and French (1997) to control for the impact of industry-specific performance on our sample.

From the Dartmouth Kenneth French website, we obtained two datasets: the first maps SIC codes to the 49 industries, and the second provides monthly returns for each of these industries. After merging these datasets with the Fortune-CRSP data, we assign each firm to an industry based on its SIC code and match it with the corresponding monthly industry return.

We construct both EW and VW industry-matched portfolios to serve as benchmarks. For the EW industry-matched portfolio, each month's industry return is weighted equally, and this serves as the benchmark for the EW Fortune portfolio. In the VW industry-matched portfolio, returns are weighted by the market capitalization of each firm in the Fortune portfolio, providing the benchmark for the VW Fortune portfolio.

The characteristics-matched portfolio draws upon the characteristics-adjusted benchmark methodology of Daniel et al. (1997). This approach matches each stock to a portfolio of stocks with similar size, book-to-market ratio, and momentum, addressing whether the observed performance of best companies (BCs) is due to size, value, or momentum anomalies.

Using Compustat data, we gather information on each U.S. firm's market capitalization, total equity, and last twelve-month return (LTM) as of June 30th each year from 2013 to 2023. These variables allow calculation of the book-to-market ratio (total equity / market capitalization). This dataset is then merged with CRSP's monthly return data for all U.S.-listed firms.

To construct the benchmark, each year on June 30th, firms are ranked by market capitalization and divided into quintiles, forming five size portfolios. Within each size quintile, firms are ranked by book-to-market ratios, yielding 25 portfolios (5 size quintiles  $\times$  5 book-to-market quintiles). Firms in these 25 portfolios are further ranked by LTM returns, with quintiles formed to create a total of 125 portfolios (5  $\times$  5  $\times$  5). Monthly VW returns are then calculated for each of the 125 portfolios, allowing each firm-month observation to include a corresponding characteristics-matched portfolio return.

This data is then merged with the Fortune list data, retaining only BC firms. As a result, each Fortune firm is now matched with the monthly return of its corresponding characteristics-matched portfolio, one of the 125 portfolios, for each month. Following the approach used for the industry-matched portfolio, we construct both EW and VW characteristics-matched portfolios. In the EW version, each month's portfolio return is weighted equally, serving as the benchmark for the EW Fortune portfolio. In the VW version, portfolio returns are weighted by the market capitalization of the BC firms, providing the benchmark for the VW Fortune portfolio.

#### 4.2.1 Model Specifications & Robustness Checks

To determine whether the Fortune portfolio generates any alpha, we regress its excess returns relative to three benchmarks (the risk-free rate, industry-matched portfolio, and characteristics-matched portfolio) on the Fama-French six-factor asset pricing model, as specified in Equation 1 below. In Equation 1,  $R_{\text{Portfolio}}$  represents the return of the Fortune portfolio, which is calculated using either equal weighting or value weighting.  $R_{\text{Benchmark}}$  denotes the return of one of the three benchmarks, and the difference  $R_{\text{Portfolio}} - R_{\text{Benchmark}}$  is the portfolio's excess return. The intercept  $\alpha$  is the primary focus of this test, as it represents the portfolio's alpha. The six

additional terms and their associated coefficients correspond to the six factors in the Fama-French model. This analysis is performed separately for both the EW and VW portfolios.

$$\text{Eq. 1: } R_{\text{Portfolio}, t} - R_{\text{Benchmark}, t} = \alpha + \beta_{\text{MKT}} \text{MKT}_t + \beta_{\text{HML}} \text{HML}_t + \beta_{\text{SMB}} \text{SMB}_t + \beta_{\text{CMA}} \text{CMA}_t + \beta_{\text{RMW}} \text{RMW}_t + \beta_{\text{MOM}} \text{MOM}_t + \varepsilon_t$$

As a robustness check, we also apply the Carhart four-factor model to perform the same regressions as in Equation 1 but with a different asset pricing model, providing additional validation of the results. Additionally, to assess whether outliers drive the results, we winsorize the firm-level monthly returns each year at the 5th and 10th percentiles on the Fama-French six-factor model.

#### 4.2.2 Extensions of the Baseline Test

Beyond the robustness checks of the baseline test, which include employing the Carhart four-factor model as the asset pricing model and winsorizing the results, we introduce two key extensions to the baseline analysis described in Section 4.1. First, we divide the portfolio into two sub-portfolios: one comprising firms ranked in the top half of the Fortune list and the other comprising those in the bottom half. Second, we adjust the baseline regression by splitting the analysis into pre- and post-COVID periods to examine whether portfolio returns differ under varying market conditions. These extensions provide additional insights into the drivers of abnormal returns and the potential sensitivity of the results to different contexts.

To better understand the drivers of portfolio returns and explore potential refinements to the investment strategy used in the baseline test, we adopt the methodology of Boustanifar and Kang (2022) by dividing the portfolios based on firms' rankings on the Fortune list. This creates a top-half portfolio consisting of the 50% highest-ranked firms and a bottom-half portfolio of the 50% lowest-ranked firms. In line with our hypothesis, we expect the top-half portfolio to deliver higher returns, as these firms score higher on ES. However, it is possible that the bottom-half portfolio may outperform due to potential mispricing of the positive effects of ES, as firms ranked lower on the list, such as those in the top 80 versus the top 5, will likely receive less media coverage. We conduct these split portfolio tests for both EW and VW portfolios, using the Fama-French six-factor model and the Carhart four-factor model.

Our sample period, spanning 2014 to 2023, encompasses the COVID-19 pandemic and its aftermath, including a period of inflation and unprecedented interest rate hikes by the Federal Reserve and other central banks worldwide. These events represent a time of significant market turbulence and uncertainty. To investigate whether the performance of the investment strategy is sensitive to such turbulent times, we divide our analysis into two sub-periods: 2014-2019 (pre-COVID), representing a more normal market environment, and 2020-2023 (post-COVID), designated as a period of heightened market volatility. This approach allows us to assess whether portfolio returns differ under varying market conditions. Consistent with the main analysis, we perform this test for both EW and VW portfolios, using the Fama-French six-factor model and the Carhart four-factor model.

### 4.3 Longevity: CARs

This section extends the baseline test, which evaluates abnormal returns for the one-year period following inclusion on the Fortune “100 Best Companies to Work For” list, by examining the persistence of these returns over a longer horizon. Specifically, we calculate CARs over a five-year period post list-inclusion to determine whether abnormal returns persist or dissipate over time. This allows us to assess whether the market adjusts equity prices to fully reflect the benefits of high ES, thereby eliminating the potential for continued abnormal returns. By calculating both EW and VW CARs, we provide a comprehensive evaluation of the long-term performance of high-ES firms, complementing the one-year analysis of the baseline test.

CAR is utilized to evaluate the long-term performance of portfolios by summing abnormal returns over specific periods following portfolio formation. CAR is calculated by first determining each stock’s benchmark-adjusted or abnormal return for each month after inclusion in Fortune’s “100 Best Companies to Work For.” The abnormal return for month  $t$  is obtained by subtracting the benchmark return from the stock’s actual return. These monthly abnormal returns are then cumulatively summed to derive the CAR for designated time intervals.

Three distinct benchmarks are employed in this analysis: the market benchmark, sourced from CRSP as the monthly return of a VW market portfolio; the industry benchmark; and the characteristics benchmark, both of which are calculated using methodologies outlined in previous sections. Portfolios are formed annually at the end of April based on the firms listed in Fortune’s “100 Best Companies to Work For” and are held for up to five years (60 months) to assess performance over extended periods. CARs are calculated for each cumulative six-month interval from month 0 to month 60 (e.g., 0-6, 0-12, 0-18, etc.) to evaluate the enduring effects of high ES. For example, the CAR for the 2014 portfolio is calculated from May 2014 to April 2019. This procedure is repeated for each subsequent year’s Fortune portfolio.

Since the sample period concludes in December 2023, portfolios formed in later years are evaluated over shorter durations – for instance, the 2023 portfolio only has eight months of data – because CRSP only provides stock returns data up to December 2023 at the time of analysis. For each year, CARs are computed for individual stocks and then aggregated to form portfolio-level CARs using both EW and VW approaches. The EW CAR is calculated as the arithmetic average of the individual stock CARs, treating each stock equally. In contrast, the VW CAR accounts for each stock’s market capitalization relative to the total portfolio market cap each month, ensuring that larger firms have a proportionate impact on the overall CAR.

Once computed, the CARs for each year’s portfolio are averaged to derive a mean CAR for each time period. This approach provides a comprehensive measure of abnormal returns associated with high ES investments, enabling the evaluation of whether such investments consistently yield above-benchmark returns over varying time horizons.

## 5. Results

The findings of the study are detailed in this section, structured to align with the methods outlined in the preceding section. Section 5.1 presents descriptive statistics to summarize key

aspects of the data and provide an overview of the sample. Section 5.2 reports the results of the baseline test, which evaluates the abnormal returns associated with portfolios formed from the Fortune “100 Best Companies to Work For” list as well as an equivalent list issued by Glassdoor. Section 5.3 examines the robustness of these results by employing the Carhart four-factor model in place of the Fama-French six-factor model used in the baseline test and by testing the sensitivity of the results to outliers through winsorization. Section 5.4 presents the outcomes of two extensions to the baseline test: dividing the portfolio into top and bottom halves based on firm rankings on the respective lists (Section 5.4.1) and analyzing differences in performance between pre- and post-COVID periods (Section 5.4.2) to assess how the strategy performs in turbulent versus normal market conditions. Finally, Section 5.5 investigates the persistence of abnormal returns by evaluating the length of the window during which such returns can be earned.

### 5.1 Descriptive Statistics

Table 2 provides an overview of the consistency, or “stickiness,” of firms’ presence on the Fortune list. The first column, labeled “BCs,” reflects the number of Best Companies (BCs) that meet our inclusion criteria of being both publicly traded and listed on a U.S. stock exchange – requirements for inclusion in our portfolio, as detailed in the forthcoming Method section. The potential pool each year comprises 100 firms. Notably, the number of qualifying BCs increases steadily from the start of our sample period in 2014 through 2023, suggesting a shift towards greater representation of publicly listed firms within the Fortune list.

The subsequent columns display the number of companies that retained their place on the list from the previous year, the number newly added, and the number dropped from the prior year’s list. This distribution highlights a notable degree of stability, as a substantial portion of firms maintain their listing status year-over-year, indicating that high levels of ES tend to be persistent.

**Table 2.** Summary statistics for the Fortune list.

Year of List	BCs	Retained	Added	Dropped
2014	34			
2015	34	27	7	7
2016	30	28	2	6
2017	34	28	6	2
2018	38	30	8	4
2019	39	32	7	6
2020	37	36	1	3
2021	44	28	16	9
2022	43	34	9	10
2023	48	38	10	5

For the Glassdoor list (see table A2 in the Appendix), it is important to note that the list size expanded from 50 firms (2014-2017) to 100 firms from 2018 onward. Compared to the Fortune list, Glassdoor’s list includes a slightly higher number of firms that meet our criteria of being publicly traded and U.S.-listed, with BC counts in the low-to-mid 50s in recent years. Like the Fortune list, the number of qualifying firms has generally increased from 2014 to 2023. However, the Glassdoor list is relatively more dynamic, as evidenced by a lower retention rate of firms from year to year and a higher number of new entries annually.

**Table 3.** Summary characteristics for the Fortune portfolio.

	# obs	Mean	Median	Std. Dev.	Min	Max
Market Cap (\$ bn)	376	64.40	29.64	93.24	0.13	684.33
Forward P/E	355	29.99	19.00	32.01	3.71	227.10
Dividend Yield	430	1.23%	0.52%	1.77%	0.00%	11.60%
Market/Book	375	11.45	4.11	49.66	- 246.27	831.61
Intangibles/Total Assets	339	0.24	0.17	0.23	0.00	0.81

Table 3 reports the summary characteristics of firms included in the Fortune “100 Best Companies to Work For” from 2014 to 2023. The mean market capitalization is \$64.40 billion, with a median of \$29.64 billion, reflecting a concentration of larger firms alongside representation from mid-sized companies. The range, spanning \$130 million to \$684.33 billion, highlights the diversity in firm size within the portfolio.

The forward P/E ratio has a mean of 29.99 and a median of 19.00, with the median providing a more accurate representation due to the upward skew from a subset of highly valued firms. For comparison, the median forward P/E ratio of S&P 500 firms during the same period, calculated using Compustat data, is 19.14, placing the Fortune portfolio broadly in line with market levels.

Dividend yield averages 1.23%, with a median of 0.52%, suggesting that many firms prioritize reinvestment over shareholder distributions. The market-to-book ratio exhibits significant variability, with a mean of 11.45 and a median of 4.11, reflecting the presence of both high-growth firms and more traditionally valued companies. Finally, the intangibles-to-total-assets ratio, with a median of 0.17, underscores the importance of intangible assets, such as intellectual property, among these firms.

The equivalent summary statistics for the Glassdoor portfolio are presented in Table A3 in the Appendix. Compared to the Fortune portfolio, the Glassdoor portfolio consists of larger firms, with a mean market capitalization of \$170.22 billion and a median of \$51.30 billion, nearly double the size of the median Fortune firm.

The forward P/E ratio is also higher for the Glassdoor portfolio, with a mean of 37.00 and a median of 23.80, compared to 29.99 and 19.00 for the Fortune portfolio, indicating that Glassdoor firms tend to have higher valuation multiples. Dividend yields are lower, with a mean of 0.97% and a median of 0.16%, compared to 1.23% and 0.52% for the Fortune portfolio, reflecting a lower emphasis on shareholder distributions.

The market-to-book ratio is also higher for the Glassdoor portfolio, with a mean of 12.53 and a median of 6.26, compared to 11.45 and 4.11 for the Fortune portfolio. Both lists exhibit significant skewness, with mean values exceeding medians. Lastly, the intangibles-to-total-assets ratio is nearly identical between the two portfolios, with both showing a mean of 0.24 and similar medians and ranges, underscoring the comparable reliance on intangible assets among firms on both lists.

**Figure 3.** Counts of Fortune BC's, by industry.

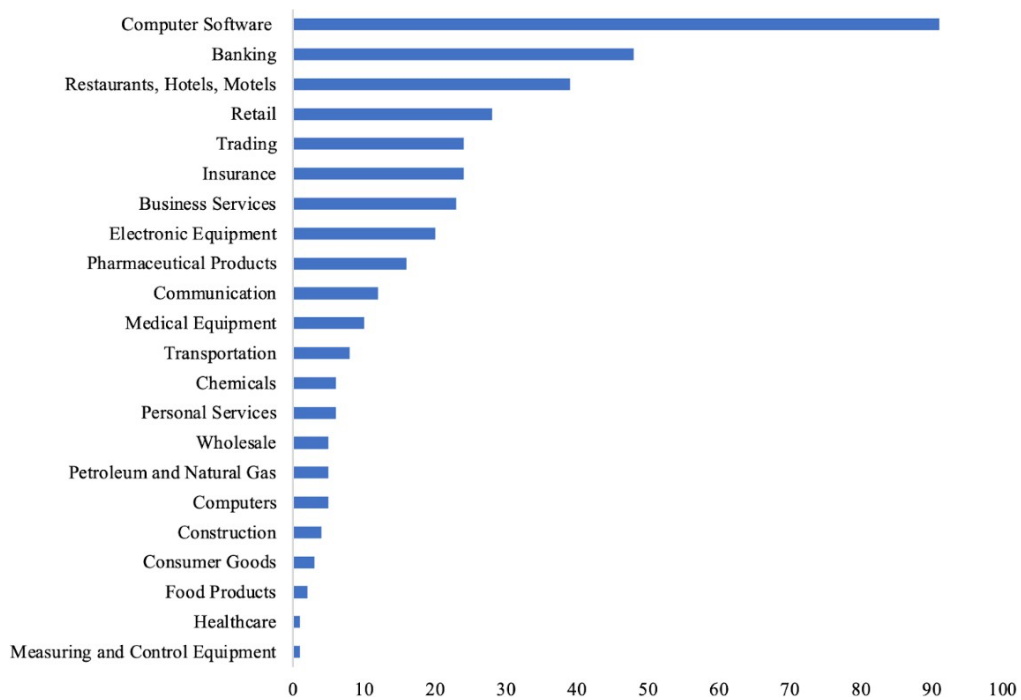


Figure 3 presents the industry composition of the Fortune list, with firms classified according to the 49-industry classification by Fama and French (1997), as described in the Method section. The Fortune list is notably concentrated in the ‘Computer Software’ industry, with significant representation in ‘Banking’ as well as in ‘Restaurants, Hotels, and Motels’. Figure A1 in the Appendix shows the industry composition for the Glassdoor list, which is even more concentrated in the ‘Computer Software’ industry, where 36.81% of firms fall within this category, compared to 23.88% for the Fortune list.

**Figure 4.** Portfolio returns of \$100 invested at the end of April, 2014.

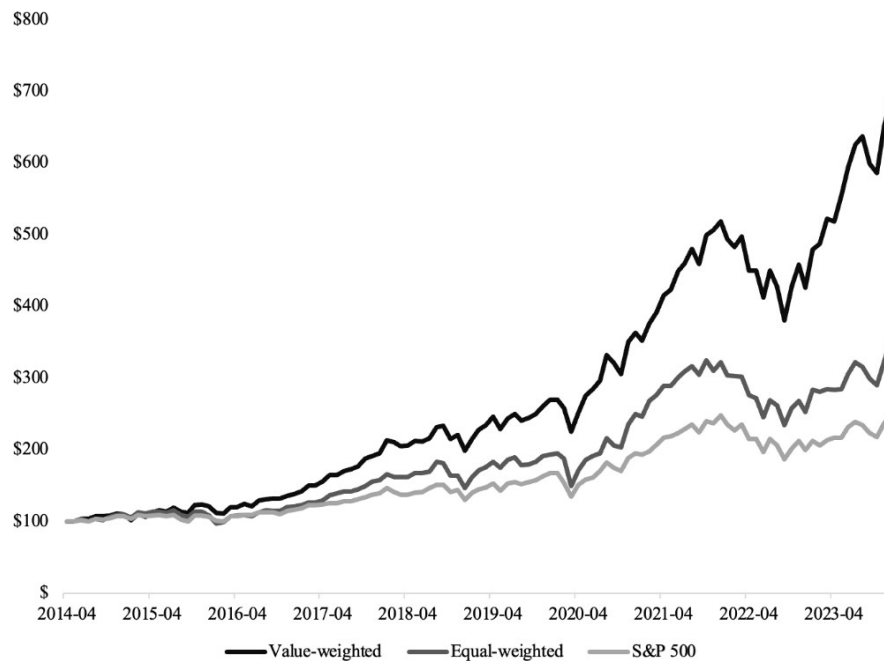


Figure 4 illustrates the returns on a \$100 investment made at the end of April 2014 across three portfolios: the VW Fortune portfolio, the EW Fortune portfolio, and the S&P 500. This figure provides an overview of each portfolio’s performance over the sample period, extending through the end of 2023. Both Fortune portfolios outperform the S&P 500, with the VW portfolio nearly doubling the returns of the EW portfolio. Figure A2 in the Appendix shows the corresponding performance for the Glassdoor list, which exhibits a similar trend but with even more pronounced returns.

## 5.2 Baseline Test Results

This section presents the results of the baseline test, which evaluates the abnormal returns of portfolios formed from the Fortune “100 Best Companies to Work For” list and the Glassdoor list. Using the Fama-French six-factor model, we assess portfolio alpha relative to the risk-free rate, industry-matched, and characteristics-matched benchmarks. The discussion begins with the results for the Fortune list, followed by an analysis of the Glassdoor-based portfolios.

**Table 4A.** Fortune Portfolio, Fama-French Six-Factor Model

	Excess returns over		
	Risk-free	Industry	Characteristics
Equal-weighted			
$\alpha$	0.26 (1.64)	0.10 (0.71)	0.18 (1.23)
<i>Annualized <math>\alpha</math></i>	<i>3.17%</i>	<i>1.21%</i>	<i>2.18%</i>
$\beta_{\text{MKT}}$	1.02 (26.59)***	0.02 (0.58)	- 0.01 (- 0.34)
$\beta_{\text{HML}}$	0.13 (2.23)**	0.04 (0.78)	0.12 (2.08)**
$\beta_{\text{SMB}}$	0.19 (2.80)***	0.23 (3.70)***	0.10 (1.61)
$\beta_{\text{RMW}}$	0.02 (0.21)	0.04 (0.57)	0.01 (0.14)
$\beta_{\text{CMA}}$	- 0.31 (- 3.56)***	- 0.15 (- 1.84)*	- 0.25 (- 3.03)***
$\beta_{\text{MOM}}$	- 0.06 (- 1.40)	- 0.06 (- 1.56)	- 0.01 (- 0.34)
Value-weighted			
$\alpha$	0.73 (4.24)***	0.46 (3.05)***	0.56 (3.84)***
<i>Annualized <math>\alpha</math></i>	<i>9.12%</i>	<i>5.66%</i>	<i>6.93%</i>
$\beta_{\text{MKT}}$	1.08 (25.40)***	0.05 (1.33)	0.03 (0.81)
$\beta_{\text{HML}}$	0.09 (1.36)	0.05 (0.91)	0.09 (1.65)
$\beta_{\text{SMB}}$	- 0.27 (- 3.55)***	- 0.18 (- 2.69)	- 0.16 (- 2.54)**
$\beta_{\text{RMW}}$	- 0.03 (- 0.33)	0.04 (0.51)	- 0.04 (- 0.55)
$\beta_{\text{CMA}}$	- 0.34 (- 3.41)***	- 0.16 (- 1.86)*	- 0.22 (- 2.65)***
$\beta_{\text{MOM}}$	- 0.07 (- 1.45)	- 0.08 (- 1.76)*	- 0.06 (- 1.51)
# obs	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

The results for the Fortune list, presented in Table 4A, highlight a significant contrast in alpha generation between the EW and VW portfolios across the risk-free rate, industry-matched, and characteristics-matched benchmarks. While the EW portfolio shows positive alpha estimates for all three benchmarks, these estimates are not statistically significant. Specifically, the monthly alphas are 0.26% (3.17% annualized) above the risk-free rate, 0.10% (1.21% annualized) relative to the industry benchmark, and 0.18% (2.18% annualized) against the characteristics benchmark. The lack of significance suggests that the EW Fortune portfolio does not consistently outperform these benchmarks, indicating that the returns may not stem from a systematic advantage linked to ES.

In contrast, the VW portfolio demonstrates both economically and statistically significant alphas across all three benchmarks. Monthly alpha for the VW portfolio is 0.73% (9.12% annualized) over the risk-free rate, 0.46% (5.66% annualized) relative to the industry benchmark, and 0.56% (6.93% annualized) against the characteristics benchmark, all significant at the 1% level. With this result, we accept our hypothesis that investing in companies with high ES delivers abnormal returns (contingent upon a VW portfolio construction).

The robust outperformance for the VW portfolio suggests that larger firms on the Fortune list – those receiving more weight in a VW scheme – are driving this positive alpha. This outperformance could reflect the advantages larger companies might gain from high ES, such as enhanced productivity or stronger market reputation, which may be more effectively leveraged by larger firms.

For the Glassdoor robustness test, presented in Table 4B, we observe a marked difference in alpha significance compared to the Fortune-based portfolios. All Glassdoor alphas are significant at the 1% level across both EW and VW portfolios, and they consistently exceed the corresponding alphas for the Fortune list across all benchmarks. Notably, while the EW portfolio alphas were insignificant in the Fortune analysis, they achieve strong significance in the Glassdoor results, indicating more consistent outperformance for companies ranked highly by Glassdoor's employee-driven criteria. These findings suggest that the Glassdoor list may capture elements of ES that correlate more directly with firm outperformance than the Fortune list does.

**Table 4B.** Glassdoor Portfolio, Fama-French Six-Factor Model

	Excess returns over		
	Risk-free	Industry	Characteristics
Equal-weighted			
$\alpha$	0.62 (3.27)***	0.47 (2.70)***	0.46 (2.65)***
<i>Annualized <math>\alpha</math></i>	7.70%	5.79%	5.66%
$\beta_{\text{MKT}}$	0.98 (21.02)***	- 0.04 (- 0.88)	- 0.03 (- 0.66)
$\beta_{\text{HML}}$	- 0.06 (- 0.83)	0.02 (0.29)	0.04 (0.53)
$\beta_{\text{SMB}}$	- 0.01 (- 0.14)	0.09 (1.14)	0.02 (0.20)
$\beta_{\text{RMW}}$	- 0.13 (- 1.28)	- 0.11 (- 1.13)	- 0.18 (- 1.92)*
$\beta_{\text{CMA}}$	- 0.27 (- 2.49)**	- 0.15 (- 1.50)	- 0.17 (- 1.73)*
$\beta_{\text{MOM}}$	- 0.11 (- 2.02)**	- 0.06 (- 1.17)	0.00 (0.07)
Value-weighted			
$\alpha$	0.87 (4.60)***	0.65 (3.94)***	0.55 (3.92)***
<i>Annualized <math>\alpha</math></i>	10.95%	8.08%	6.80%
$\beta_{\text{MKT}}$	1.05 (22.81)***	0.03 (0.73)	0.01 (0.26)
$\beta_{\text{HML}}$	- 0.22 (- 2.98)***	- 0.08 (- 1.22)	- 0.08 (- 1.51)
$\beta_{\text{SMB}}$	- 0.33 (- 3.93)***	- 0.19 (- 2.57)**	- 0.17 (- 2.71)***
$\beta_{\text{RMW}}$	0.13 (1.23)	0.17 (1.95)*	0.07 (0.94)
$\beta_{\text{CMA}}$	- 0.19 (- 1.75)*	- 0.11 (- 1.16)	- 0.09 (- 1.18)
$\beta_{\text{MOM}}$	- 0.00 (- 0.03)	0.08 (1.57)	- 0.04 (- 1.00)
# obs	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

### 5.3 Baseline Test Robustness Checks

The following section addresses the robustness of the baseline test findings through additional analyses. It begins by employing the Carhart four-factor model to determine whether the results are consistent under an alternative asset pricing framework (Section 5.2.1). This is followed by an evaluation of the sensitivity of the baseline test results through winsorization to mitigate the impact of outliers (Section 5.2.2).

#### 5.3.1 Carhart Four-Factor Model

Using the Carhart four-factor model as a robustness check to the results of the Fama-French six-factor model in the baseline test, we find results consistent with the previous analysis. The VW portfolio again shows significant positive alpha across all benchmarks, reinforcing the finding that larger firms in the Fortune portfolio outperform. In contrast, the EW portfolio still shows positive but statistically insignificant alphas, suggesting no consistent outperformance for smaller firms. These findings confirm that the VW portfolio's performance is robust across different factor models, highlighting the influence of larger firms on the portfolio's success.

**Table 5A.** Fortune Portfolio, Carhart Four-Factor Model

	Excess returns over		
	Risk-free	Industry	Characteristics
Equal-weighted			
$\alpha$	0.23 (1.39)	0.09 (0.68)	0.16 (1.05)
<i>Annualized <math>\alpha</math></i>	<i>2.80%</i>	<i>1.09%</i>	<i>1.94%</i>
$\beta_{MKT}$	1.05 (26.87)***	0.04 (1.16)	0.01 (0.30)
$\beta_{HML}$	0.03 (0.68)	0.02 (0.56)	0.02 (0.60)
$\beta_{SMB}$	0.19 (3.07)***	0.22 (4.04)***	0.11 (1.92)*
$\beta_{MOM}$	- 0.10 (- 2.03)**	- 0.08 (- 2.02)**	- 0.04 (- 0.89)
Value-weighted			
$\alpha$	0.70 (3.92)***	0.46 (3.07)***	0.63 (3.57)***
<i>Annualized <math>\alpha</math></i>	<i>8.73%</i>	<i>5.66%</i>	<i>7.83%</i>
$\beta_{MKT}$	1.10 (25.61)***	0.06 (1.65)	0.06 (1.42)
$\beta_{HML}$	- 0.11 (- 2.29)**	- 0.05 (- 1.17)	- 0.12 (- 2.44)**
$\beta_{SMB}$	- 0.23 (- 3.36)***	- 0.17 (- 3.08)***	- 0.31 (- 4.63)***
$\beta_{MOM}$	- 0.10 (- 1.86)*	- 0.09 (- 2.08)**	- 0.04 (- 0.76)
# obs	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

For the Glassdoor robustness test using the Carhart four-factor model, see Table 4B, we observe consistent results with those from the Fama-French six-factor model. The VW portfolio again demonstrates significant positive alphas across all benchmarks, with alphas that exceed those observed in the Fortune-based analysis, reinforcing Glassdoor's stronger capacity for alpha generation. While the EW portfolio alphas are also significant across benchmarks, they show slightly lower levels of significance compared to the Fama-French six-factor model results (where all were significant at the 1% level). Here, the EW portfolio is significant at the 1% level only against the risk-free rate and at the 5% level for the industry and characteristics

benchmarks. Overall, these findings underscore the robustness of the Glassdoor portfolio's performance, especially for larger firms.

**Table 5B.** Glassdoor Portfolio, Carhart Four-Factor Model

	Excess returns over		
	Risk-free	Industry	Characteristics
Equal-weighted			
$\alpha$	0.56 (2.90)***	0.42 (2.46)**	0.39 (2.25)**
<i>Annualized <math>\alpha</math></i>	6.93%	5.16%	4.78%
$\beta_{\text{MKT}}$	0.99 (21.44)***	- 0.03 (- 0.78)	- 0.03 (- 0.65)
$\beta_{\text{HML}}$	- 0.19 (- 3.67)***	- 0.04 (- 0.81)	- 0.05 (- 1.06)
$\beta_{\text{SMB}}$	0.07 (0.98)	0.15 (2.33)**	0.11 (1.71)*
$\beta_{\text{MOM}}$	- 0.13 (- 2.24)**	- 0.06 (- 1.28)	0.00 (0.04)
Value-weighted			
$\alpha$	0.90 (4.69)***	0.70 (4.17)***	0.73 (3.93)***
<i>Annualized <math>\alpha</math></i>	11.35%	8.73%	9.12%
$\beta_{\text{MKT}}$	1.07 (23.25)***	0.04 (1.05)	0.05 (1.08)
$\beta_{\text{HML}}$	- 0.35 (- 6.76)***	- 0.15 (- 3.26)***	- 0.21 (- 4.14)***
$\beta_{\text{SMB}}$	- 0.33 (- 4.60)	- 0.23 (- 3.56)***	- 0.29 (- 4.15)***
$\beta_{\text{MOM}}$	- 0.02 (- 0.31)	0.06 (1.27)	0.11 (2.04)**
# obs	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

### 5.3.2 Winsorizing Baseline Test Results

Using the Fama-French six-factor model with winsorization at the 5% and 10% levels, the robustness test for the Fortune-based portfolio confirms the consistency of the VW portfolio's performance while revealing some changes for the EW portfolio.

**Table 6A.** Fortune Portfolio, Winsorizing

	$x = 5$			$x = 10$		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Equal-weighted						
$\alpha$	0.27	0.12	0.19	0.43	0.27	0.35
	(2.12)**	(0.99)	(1.63)	(3.62)***	(2.41)**	(3.15)***
<i>Annualized <math>\alpha</math></i>	3.29%	1.45%	2.30%	5.28%	3.29%	4.28%
Value-weighted						
$\alpha$	0.63	0.35	0.45	0.68	0.40	0.50
	(4.20)***	(2.75)***	(3.60)***	(4.88)***	(3.35)***	(4.23)***
<i>Annualized <math>\alpha</math></i>	7.83%	4.28%	5.54%	8.47%	4.91%	6.17%
# obs	116	116	116	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

For the EW portfolio, winsorizing at the 10% level yields statistically significant alphas across all benchmarks, contrasting with the previous results from the unwinsorized Fama-French six-factor model and the Carhart four-factor model, where alphas were insignificant. Specifically, the 10% winsorized alphas are 0.43% monthly (5.28% annualized) against the risk-free rate, 0.27% monthly (3.29% annualized) against the industry benchmark, and 0.35% monthly (4.28% annualized) against the characteristics benchmark. This shift suggests that extreme values may have previously obscured some of the performance of the EW portfolio.

The VW portfolio maintains significant alphas across all benchmarks at both winsorization levels, though the alpha estimates are slightly lower than those from the unwinsorized Fama-French six-factor model. For example, with 10% winsorization, the annualized alphas are 8.47% against the risk-free rate, 4.91% against the industry benchmark, and 6.17% against the characteristics benchmark, all statistically significant at the 1% level. By comparison, the annualized alphas for the unwinsorized Fama-French six-factor model were 9.12% for the risk-free rate, 5.66% for the industry benchmark, and 6.93% for the characteristics benchmark.

These results support the robustness of the VW portfolio's outperformance, showing it remains significant even after accounting for extreme returns. Meanwhile, the EW portfolio's newfound significance under 10% winsorization highlights the impact of outliers on its performance.

Using the Fama-French six-factor model with 5% and 10% winsorization, the Glassdoor robustness test shows consistently strong results, with all alphas remaining significant at the 1% level and surpassing those of the Fortune-based portfolios across benchmarks and weighting schemes. These results, see Table 6B, affirm the Glassdoor-based portfolio's resilience in delivering alpha, highlighting its robustness as an alternative proxy for high ES.

**Table 6B.** Glassdoor Portfolio, Winsorizing

	$x = 5$			$x = 10$		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Equal-weighted						
$\alpha$	0.63	0.47	0.47	0.63	0.47	0.47
	(3.96)***	(3.41)***	(3.20)***	(4.32)***	(3.74)***	(3.47)***
<i>Annualized <math>\alpha</math></i>	7.83%	5.79%	5.79%	7.83%	5.79%	5.79%
Value-weighted						
$\alpha$	0.83	0.61	0.51	0.80	0.59	0.48
	(4.64)***	(3.80)***	(3.88)***	(4.72)***	(3.82)***	(3.84)***
<i>Annualized <math>\alpha</math></i>	10.43%	7.57%	6.29%	10.03%	7.31%	5.91%
# obs	116	116	116	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

#### 5.4 Results of the Baseline Test Extensions

This section presents the results of two extensions to the baseline test designed to provide additional insights into the drivers of portfolio performance and the influence of varying market conditions. The analysis begins with the split-portfolio test, which evaluates returns for portfolios constructed by separating firms into top and bottom halves based on their rankings on the Fortune and Glassdoor lists. (Section 5.3.1), followed by an examination of performance differences between pre- and post-COVID periods (Section 5.3.2).

##### 5.4.1 Split Portfolio

The split portfolio test reveals that, for both the EW and VW portfolios, the bottom-half portfolio (representing the 50% lowest-ranked firms on the Fortune list) generally outperforms the top-half portfolio (50% highest-ranked firms). In the EW portfolios, all alphas remain insignificant across benchmarks, consistent with previous results, suggesting no clear outperformance regardless of firm ranking within the list.

**Table 7A. Fortune List, Splitting the Portfolio**

	Fama-French Six-Factor Model			Carhart Four-Factor Model		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Equal-weighted						
Top-half						
$\alpha$	0.19	- 0.02	0.15	0.17	0.00	0.15
	(0.90)	(- 0.09)	(0.76)	(0.78)	(0.02)	(0.72)
<i>Annualized <math>\alpha</math></i>	<i>2.30%</i>	<i>- 0.24%</i>	<i>1.81%</i>	<i>2.06%</i>	<i>0.00%</i>	<i>1.81%</i>
Bottom-half						
$\alpha$	0.33	0.22	0.21	0.29	0.19	0.16
	(1.74)	(1.24)	(1.13)	(1.52)	(1.08)	(0.91)
<i>Annualized <math>\alpha</math></i>	<i>4.03%</i>	<i>2.67%</i>	<i>2.55%</i>	<i>3.54%</i>	<i>2.30%</i>	<i>1.94%</i>
Value-weighted						
Top-half						
$\alpha$	0.73	0.29	0.51	0.70	0.30	0.48
	(2.68)***	(1.29)	(2.22)**	(2.46)**	(1.30)	(2.06)**
<i>Annualized <math>\alpha</math></i>	<i>9.12%</i>	<i>3.54%</i>	<i>6.29%</i>	<i>8.73%</i>	<i>3.66%</i>	<i>5.91%</i>
Bottom-half						
$\alpha$	0.75	0.66	0.63	0.70	0.65	0.57
	(3.29)***	(3.68)***	(3.05)***	(3.12)***	(3.65)***	(2.80)***
<i>Annualized <math>\alpha</math></i>	<i>9.38%</i>	<i>8.21%</i>	<i>7.83%</i>	<i>8.73%</i>	<i>8.08%</i>	<i>7.06%</i>
# obs	116	116	116	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

For the VW portfolios, the bottom-half portfolio exhibits consistently strong performance, with all alphas significant at the 1% level across both models and benchmarks. The annualized alphas for the bottom half are high, ranging from 7.83% to 9.38%, indicating robust returns among the lower-ranked firms. The top-half VW portfolio also shows significant alphas, though only when compared to the risk-free and characteristics benchmarks; it does not show significant outperformance against the industry benchmark. The outperformance of the bottom-half portfolio relative to the top-half portfolio is observed only for the industry and characteristics benchmarks when VW. In contrast, the difference in performance relative to the risk-free rate between the two portfolios is negligible.

These results suggest that the bottom-half firms in the VW portfolio may benefit from mispricing or overlooked positive effects of ES due to lower media visibility, as hypothesized. This outperformance could imply that less attention to these firms allows their stock prices to better capture potential gains associated with ES over time.

The split portfolio test for the Glassdoor-based portfolios (see Table 7B below) reveals a different pattern than observed with the Fortune-based portfolios. For Glassdoor, we do not see the bottom-half portfolio consistently outperforming the top half. This divergence suggests that the outperformance of lower-ranked firms on the Fortune list may not generalize to other ES proxies. Furthermore, in line with previous results for the Glassdoor list, several of the EW portfolios – particularly in the bottom-half – show significant alphas, contrasting with the insignificant results for the EW Fortune portfolios.

**Table 7B.** Glassdoor List, Splitting the Portfolio

	Fama-French Six-Factor Model			Carhart Four-Factor Model		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Equal-weighted						
Top-half						
$\alpha$	0.63	0.42	0.40	0.56	0.37	0.33
	(2.77)***	(2.03)*	(1.98)**	(2.43)**	(1.84)*	(1.59)
<i>Annualized <math>\alpha</math></i>	7.83%	5.16%	4.91%	6.93%	4.53%	4.03%
Bottom-half						
$\alpha$	0.62	0.54	0.51	0.57	0.49	0.45
	(2.62)***	(2.42)**	(2.30)**	(2.41)**	(2.24)**	(2.05)**
<i>Annualized <math>\alpha</math></i>	7.70%	6.68%	6.29%	7.06%	6.04%	5.54%
Value-weighted						
Top-half						
$\alpha$	0.91	0.52	0.64	0.94	0.58	0.66
	(3.71)***	(3.08)***	(3.43)***	(3.79)***	(3.40)***	(3.50)***
<i>Annualized <math>\alpha</math></i>	11.48%	6.42%	7.96%	11.88%	7.19%	8.21%
Bottom-half						
$\alpha$	0.72	0.77	0.48	0.74	0.80	0.47
	(2.90)***	(2.95)***	(2.55)**	(3.05)***	(3.12)***	(2.55)**
<i>Annualized <math>\alpha</math></i>	8.99%	9.64%	5.91%	9.25%	10.03%	5.79%
# obs	116	116	116	116	116	116

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

#### 5.4.2 Pre- vs. Post-COVID

The results in Table 8A for the Fortune-based portfolios, highlight interesting differences in portfolio performance between the pre-COVID (2014-2019) and post-COVID (2020-2023) periods, particularly for the VW portfolio. For the EW portfolio, alphas are generally insignificant across both periods, consistent with previous findings. In the post-COVID period, however, the EW portfolio shows weakly significant alphas at the 10% level across all benchmarks when using the Fama-French six-factor model, with annualized alphas ranging from 5.03% to 5.66%. This slight improvement in performance post-COVID suggests some increased returns, yet the limited significance implies that the effect may not be robust.

**Table 8A. Fortune Portfolio, Pre- vs. Post-COVID**

	Fama-French Six-Factor Model			Carhart Four-Factor Model		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Equal-weighted						
Pre-Covid, 2014-2019						
$\alpha$	0.08 (0.42)	- 0.11 (- 0.64)	- 0.03 (- 0.17)	0.06 (0.29)	- 0.11 (- 0.63)	- 0.05 (- 0.30)
<i>Annualized <math>\alpha</math></i>	<i>0.96%</i>	<i>- 1.31%</i>	<i>- 0.36%</i>	<i>0.72%</i>	<i>- 1.31%</i>	<i>- 0.60%</i>
# obs	68	68	68	68	68	68
Post-Covid, 2020-2023						
$\alpha$	0.46 (1.80)*	0.41 (1.77)*	0.44 (1.78)*	0.37 (1.44)	0.34 (1.54)	0.38 (1.52)
<i>Annualized <math>\alpha</math></i>	<i>5.66%</i>	<i>5.03%</i>	<i>5.41%</i>	<i>4.53%</i>	<i>4.16%</i>	<i>4.66%</i>
# obs	48	48	48	48	48	48
Value-weighted						
Pre-Covid, 2014-2019						
$\alpha$	0.42 (2.34)**	0.08 (0.57)	0.32 (2.18)**	0.36 (1.69)*	0.06 (0.38)	0.25 (1.24)
<i>Annualized <math>\alpha</math></i>	<i>5.16%</i>	<i>0.96%</i>	<i>3.91%</i>	<i>4.41%</i>	<i>0.72%</i>	<i>3.04%</i>
# obs	68	68	68	68	68	68
Post-Covid, 2020-2023						
$\alpha$	1.06 (3.32)***	0.94 (3.20)***	0.79 (2.84)***	1.06 (3.48)***	0.97 (3.44)***	1.08 (3.45)***
<i>Annualized <math>\alpha</math></i>	<i>13.49%</i>	<i>11.88%</i>	<i>9.90%</i>	<i>13.49%</i>	<i>12.28%</i>	<i>13.76%</i>
# obs	48	48	48	48	48	48

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

The VW portfolio displays much stronger results, especially in the post-COVID period. In this later period, the VW portfolio generates highly significant alphas across all benchmarks and models, with all alphas significant at the 1% level. The annualized alphas in the post-COVID period are notably high, ranging from 9.90% to 13.76%, indicating substantial outperformance. This suggests that larger firms in the Fortune portfolio have performed exceptionally well in the post-COVID market environment, driving the strong alpha observed for the VW portfolio.

In contrast, the pre-COVID results for the VW portfolio are mixed. While there is some evidence of positive alpha (e.g., a 5.16% annualized alpha against the risk-free benchmark,

significant at the 5% level in the Fama-French six-factor model), many of the alphas in the pre-COVID period are either insignificant or significant at lower confidence levels. This indicates that the VW portfolio's performance was less consistent in the earlier period, with significant outperformance emerging more strongly only in the post-COVID years.

The Glassdoor-based portfolio results, as shown in Table 8B, exhibit consistently strong performance for the VW portfolios across both pre- and post-COVID periods. Similar to the Fortune list, the post-COVID period displays particularly high VW alphas, ranging from 10.43% to 16.35% annually, all significant at the 1% level, indicating substantial outperformance among larger firms.

In contrast, the EW Glassdoor portfolios diverge from the Fortune results. Pre-COVID, the EW portfolio shows significant alphas across all benchmarks, reflecting strong returns among smaller firms. However, these alphas become insignificant post-COVID, suggesting that recent gains have been concentrated in larger firms. This shift highlights the post-COVID concentration of performance among larger companies with high ES.

**Table 8B.** Glassdoor Portfolio, Pre- vs. Post-COVID

	Fama-French Six-Factor Model			Carhart Four-Factor Model		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Equal-weighted						
Pre-Covid, 2014-2019						
$\alpha$	0.70 (3.50)***	0.60 (3.55)***	0.62 (3.28)***	0.69 (3.38)***	0.60 (3.58)***	0.59 (3.11)***
<i>Annualized <math>\alpha</math></i>	8.73%	7.44%	7.70%	8.60%	7.44%	7.31%
# obs	68	68	68	68	68	68
Post-Covid, 2020-2023						
$\alpha$	0.51 (1.43)	0.30 (0.88)	0.27 (0.81)	0.33 (0.94)	0.16 (0.51)	0.11 (0.34)
<i>Annualized <math>\alpha</math></i>	6.29%	3.66%	3.29%	4.03%	1.94%	1.33%
# obs	48	48	48	48	48	48
Value-weighted						
Pre-Covid, 2014-2019						
$\alpha$	0.63 (2.90)***	0.55 (2.79)***	0.35 (2.14)**	0.63 (2.59)**	0.58 (2.70)***	0.53 (2.37)**
<i>Annualized <math>\alpha</math></i>	7.83%	6.80%	4.28%	7.83%	7.19%	6.55%
# obs	68	68	68	68	68	68
Post-Covid, 2020-2023						
$\alpha$	1.22 (3.71)***	0.84 (2.86)***	0.83 (3.34)***	1.27 (3.98)***	0.91 (3.19)***	1.06 (3.38)***
<i>Annualized <math>\alpha</math></i>	15.66%	10.56%	10.43%	16.35%	11.48%	13.49%
# obs	48	48	48	48	48	48

\*: Significant at the 10% level; \*\*: Significant at the 5% level; \*\*\*: Significant at the 1% level

### 5.5 Longevity: CARs Results

The results presented in this section build on the significant abnormal returns identified in the baseline test, particularly for VW portfolios. Building on the evidence of one-year outperformance post-list inclusion, the CAR test evaluates the persistence of these returns over a five-year horizon, helping to determine whether these abnormal gains are sustained and thus indicative of long-term market inefficiency in pricing the benefits of high ES.

**Table 9A. Fortune CARs**

Month	CAR over		
	Market	Industry	Characteristics
Equal-weighted			
6	2.88%	1.40%	2.13%
12	5.47%	2.63%	3.37%
18	7.60%	3.48%	4.87%
24	9.89%	4.67%	5.65%
30	11.97%	5.72%	7.36%
36	15.39%	6.46%	8.00%
42	17.77%	8.05%	10.39%
48	21.27%	8.18%	10.76%
54	22.80%	8.82%	12.83%
60	27.57%	10.80%	13.87%
Value-weighted			
6	6.23%	3.64%	4.13%
12	9.60%	5.69%	6.30%
18	16.38%	9.51%	10.74%
24	19.40%	10.84%	12.10%
30	26.28%	14.71%	16.78%
36	28.95%	13.26%	16.93%
42	35.80%	17.57%	21.39%
48	40.76%	17.28%	22.60%
54	48.58%	22.07%	28.12%
60	52.70%	21.48%	29.21%

Cumulative abnormal returns (CARs) assess the five-year performance of the cohort of firms included in each year's Fortune and Glassdoor lists. The results for the Fortune portfolio, presented in Table 9A, show consistently positive CARs across all benchmarks. For the EW portfolio, the CAR relative to the market benchmark steadily increases over time, reaching 27.57% at the 60-month horizon. The CARs relative to the industry and characteristics benchmarks also exhibit a positive trajectory, albeit at lower magnitudes, reaching 10.80% and 13.87%, respectively, over the same period. These findings indicate that firms on the Fortune list generate abnormal returns that persist well beyond the one-year horizon post list inclusion observed in our baseline test, with the magnitude of these returns varying across benchmarks. The higher CARs relative to the market benchmark suggest that a meaningful portion of the observed abnormal returns can be attributed to industry and firm-specific characteristics.

The VW portfolio demonstrates even stronger performance, with CARs substantially exceeding those of the EW portfolio across all benchmarks. The 60-month CAR relative to the market benchmark reaches 52.70%, while the industry and characteristics benchmarks yield CARs of 21.48% and 29.21%, respectively. The larger magnitude of VW CARs indicates that firms with greater market capitalization contribute disproportionately to the long-term abnormal returns of the portfolio. This finding underscores the importance of firm size in driving the financial benefits associated with high ES. Considering the results of both the EW and VW CARs, the abnormal returns associated with investing in high-ES companies, as measured by the Fortune list, show no signs of dissipating over the five-year study period. This persistence suggests that the market fails to fully value the financial benefits of high ES, at least over the five-year period studied. It also demonstrates that the cohort of firms from a given year's Fortune list continues to generate abnormal returns well beyond the one-year horizon during which they are recognized as one of the best companies to work for.

**Table 9B.** Glassdoor CARs

Month	CAR over		
	Market	Industry	Characteristics
Equal-weighted			
6	5.75%	4.31%	4.29%
12	7.99%	4.94%	4.57%
18	12.26%	7.76%	7.09%
24	15.22%	8.87%	8.11%
30	19.18%	11.41%	10.53%
36	25.55%	13.99%	13.45%
42	29.65%	16.63%	15.90%
48	30.75%	15.82%	13.87%
54	34.45%	18.51%	16.13%
60	40.49%	21.40%	18.23%
Value-weighted			
6	8.64%	7.05%	4.68%
12	12.90%	9.37%	6.58%
18	21.36%	16.33%	10.88%
24	25.03%	17.41%	12.08%
30	33.71%	25.16%	16.84%
36	38.56%	26.27%	18.82%
42	47.97%	35.38%	24.15%
48	52.28%	36.80%	25.17%
54	63.58%	48.13%	32.37%
60	68.13%	49.37%	33.36%

The results for the Glassdoor list, presented in Table 9B, indicate strong and persistent CARs across all benchmarks. For the EW CARs, the return relative to the market benchmark reaches 40.49% at the 60-month horizon, substantially exceeding the 27.57% observed for the Fortune list. Similarly, the CARs relative to the industry and characteristics benchmarks reach 21.40% and 18.23%, respectively, also surpassing the corresponding CARs for the Fortune list. These findings suggest that firms included in the Glassdoor list deliver stronger long-term abnormal returns, potentially reflecting the employee review-driven nature of Glassdoor's evaluation criteria.

The VW CARs for the Glassdoor list display even greater performance, with the 60-month CAR relative to the market benchmark reaching 68.13%, compared to 52.70% for the Fortune

list. The CARs relative to the industry and characteristics benchmarks are similarly higher at 49.37% and 33.36%, respectively. The significantly larger CARs for the VW results suggest that firms with greater market capitalization play a more prominent role in driving long-term abnormal returns, consistent with the trend observed in the Fortune list. Furthermore, we do not see evidence of these abnormal returns disappearing over the five-year horizon, as firms included in the Glassdoor list continue to exhibit strong and persistent abnormal returns throughout the study period.

Edmans (2011) does not calculate a VW CAR, so the comparison to his study is limited to the EW Fortune and Glassdoor CARs. Edmans reports substantial five-year CARs across the same three benchmarks employed in this study, ranging from 18.66% to 24.21%, with the highest CAR observed relative to the market benchmark. Our findings similarly show significant five-year CARs for the EW Fortune and Glassdoor lists, but with a greater divergence in magnitude across benchmarks. Specifically, our CARs relative to the market benchmark are higher than those reported by Edmans, while the CARs relative to the industry and characteristics benchmarks are lower. This greater spread in CARs across benchmarks suggests that, in our study, market-level factors explain less of the abnormal returns, while industry and firm-specific characteristics account for a larger portion of the returns, resulting in lower abnormal performance relative to these benchmarks.

## **6. Discussion**

This study investigates whether investing in companies with high ES generates abnormal returns. Over a decade ago, Edmans (2011) found a positive and significant excess return using both EW and VW portfolios based on Fortune's list of the "100 Best Companies to Work For". In our study, which replicates Edmans' methodology within a more recent timeframe, we observe a similar positive and significant alpha. However, this finding is confined to the VW portfolio; while the VW portfolios consistently deliver significant alpha, the EW portfolios exhibit weaker performance. The performance difference between the VW and EW portfolios indicates that our results are less robust across different weighting methodologies compared to Edmans. The consistent outperformance of the VW portfolio across multiple benchmarks and asset pricing models underscores the role of firm size in capturing the financial benefits of high ES. Overall, our findings support the hypothesis that investing in companies with high ES can yield alpha, provided a VW approach is employed. This conclusion remains robust after controlling for firm characteristics, industries, and outliers.

Despite Edmans (2011) being over a decade old, our study suggests that ES continues to be undervalued by the stock market. This challenges the efficient market hypothesis, which posits that all publicly available, value-relevant information, including metrics like ES, should already be priced into stocks, leaving no room for consistent abnormal returns. However, the persistence of the abnormal returns associated with the studied investment strategy may stem from inefficiencies in how investors process non-financial information, such as ES. A behavioral finance perspective offers a potential explanation: although the Fortune list is publicly accessible, investors may overlook its significance due to rigid adherence to traditional investment strategies or difficulties in quantifying the value of intangible assets like ES.

The results from the CAR test offer additional support for the behavioral finance perspective over the efficient market hypothesis. The findings indicate that abnormal returns persist over an extended period, with no evidence of dissipation during the five-year post-list inclusion window examined. This suggests that the market mispricing of the benefits of ES endures for at least five years, enabling high-ES firms to consistently generate abnormal returns throughout this period.

Our study also reveals that alpha is stronger during periods of turbulence. When dividing our period of study into a pre- and post-COVID period (2014-2019 vs. 2020-2023), we find that the alpha associated with investing in high ES firms is significantly higher in the latter period. This suggests that high ES firms may exhibit greater resilience and generate superior returns amidst market volatility. These findings align with previous research by Boustanifar and Kang (2022) and Chang and Tang (2023). Boustanifar and Kang observed amplified excess returns for high ES firms during the Great Financial Crisis, while Chang and Tang found similar outperformance in the Chinese market during COVID-19. By confirming these patterns in the U.S. market, our study underscores the importance of ES as a factor contributing to financial performance, especially during periods of crisis.

We also provide potential explanations for the decline in performance of the EW portfolio since Edmans (2011). Firstly, consistent with the efficient market hypothesis and Bebchuk et al. (2013), as investment strategies gain popularity, the alpha associated with them tends to diminish. Secondly, the Fortune list itself has undergone significant changes. Edmans (2011) argued that the Fortune list was an appropriate proxy for high ES because it was predominantly output-oriented, relying heavily on employee surveys to assess satisfaction. To a greater extent than during the period of Edmans' study, the current Fortune list selection process incorporates input-based variables, such as company policies and initiatives aimed at improving ES. This shift may lead to the inclusion of companies that aspire to high ES but have not yet achieved it, thereby introducing noise into the dataset.

From an agency theory perspective, this shift toward greater emphasis on input-based criteria may exacerbate agency costs. Management may prioritize visible, policy-driven initiatives aimed at improving their standing on the Fortune list, potentially diverting resources from projects that directly benefit shareholders. Hemingway and Maclagan (2004) highlight that managers often engage in corporate social responsibility initiatives driven by personal values rather than shareholder interests, increasing costs and reducing profitability. Similarly, investments in high-profile ES programs or policies may serve more to signal a commitment to ES than to achieve tangible improvements in workforce productivity or retention. By focusing on aspirational inputs rather than actual outcomes, the Fortune list's current methodology risks capturing firms where management efforts are less aligned with shareholder value creation. In contrast, the Glassdoor list, being output-driven and solely based on direct employee feedback, is less susceptible to such agency-driven distortions. This distinction underscores why the Glassdoor list may provide a more reliable proxy for identifying firms that have already achieved high ES and are better positioned to deliver superior financial performance.

Replicating all tests conducted with the Fortune-based portfolios using the Glassdoor list, we consistently find that the Glassdoor-based portfolios outperform their Fortune-based counterparts, confirming that the Glassdoor list is a superior proxy for high-ES firms. This outcome suggests that Glassdoor's employee review-driven criteria more effectively capture the elements of ES that drive financial performance, offering a more reliable indicator for investors aiming to capitalize on ES-driven abnormal returns.

## **7. Conclusion**

Our study reaffirms the significant role of ES in driving superior financial performance and challenges traditional notions of market efficiency. We demonstrate that a VW portfolio of the "100 Best Companies to Work For" yields a robust six-factor alpha of 9.12% annually from 2014 to 2023. This outperformance remains consistent even when benchmarked against industry-matched and characteristics-matched portfolios, and is further validated through robustness checks using alternative asset pricing models and adjustments for outliers. Notably, excess returns are particularly pronounced during turbulent periods, such as the post-COVID-19 era (2020-2023), underscoring the resilience of high-ES firms in volatile markets.

Expanding upon Edmans (2011), we introduce the Glassdoor list as an alternative proxy for high-ES firms. Our findings reveal that portfolios constructed using the Glassdoor list consistently outperform those based on the Fortune list. Importantly, the Glassdoor-based portfolios deliver significant alpha under both EW and VW methodologies, highlighting their robustness and broader applicability. This suggests that utilizing direct employee feedback more effectively captures the true value of ES that drives financial performance.

By emphasizing the persistent undervaluation of ES by the stock market, our research offers practical implications for investors seeking to capitalize on ES-driven abnormal returns. Incorporating employee review-driven criteria into investment strategies provides an evidence-based approach to achieving superior returns, while also encouraging companies to prioritize genuine ES as a strategic asset.

### **7.1 Limitations & Suggestions for Future Research**

This study examines whether investment strategies based on high ES generate excess returns, rather than seeking to establish a causal link between ES and financial performance. We focus on whether portfolios constructed using the Fortune and Glassdoor lists deliver abnormal returns. While significant abnormal returns are observed, understanding the mechanisms behind these results lies beyond the scope of this analysis. From an investor's perspective, the key insight lies in the strategy's effectiveness in earning excess returns, regardless of the specific drivers.

Interpreting our results as evidence of a causal relationship between ES and financial performance would be inappropriate due to several reasons. Reverse causality is one consideration, as firms with strong financial performance may allocate more resources to ES initiatives, increasing their likelihood of inclusion on the Fortune and Glassdoor lists. However, if this were the case, we would not expect to observe abnormal returns. Past financial performance would already be reflected in stock prices and unrelated to future outperformance.

Additionally, omitted variables, such as superior management practices, corporate culture, or innovation capabilities, could simultaneously influence both ES and financial performance. These factors make it difficult to isolate the specific impact of ES on financial outcomes.

Furthermore, our findings are based on historical data up to 2023, and there is no guarantee that the investment strategy will remain effective going forward. The diminishing alpha observed in the EW portfolio suggests that the strategy's robustness may have weakened over time. However, the VW portfolio continues to perform well, and the Glassdoor-based portfolio generates relatively stronger alpha and its outperformance is not reliant on a specific weighting methodology for portfolio construction, indicating that ES-focused investment strategies may still be viable.

Future research could explore ways of refining the investment strategy further. For instance, text-based analysis of reviews from Glassdoor or similar platforms could be incorporated, or alternative data sources on high ES, such as ESG reports or Forbes' list of best companies to work for, could be utilized. Such modifications to the investment strategy employed in our study may help investors better capitalize on the relationship between ES and financial performance.

## 8. References

- Akerlof, G. A. (1982). Labor contracts as partial gift exchange. *The Quarterly Journal of Economics*, 97(4), 543-569.
- Allen, D. G., Bryant, P. C., & Vardaman, J. M. (2010). Retaining talent: Replacing misconceptions with evidence-based strategies. *Academy of Management Perspectives*, 24(2), 48-64.
- Arjaliès, D. L., & Bansal, T. (2018). Beyond numbers: How investment managers accommodate intangible and qualitative issues in their decisions. *Organization Studies*, 39(5-6), 691-719.
- Atanassov, J., & Kim, E. H. (2009). Labor and corporate governance: International evidence from restructuring decisions. *The Journal of Finance*, 64(1), 341-374.
- Bansal, R., Wu, S., & Yaron, A. (2022). Socially responsible investing in good and bad times. *The Review of Financial Studies*, 35(5), 2263-2301.
- Bateman, T. S., & Organ, D. W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee "citizenship". *Academy of Management Journal*, 26(4), 587-595.
- Bebchuk, L. A., Cohen, A., & Wang, C. C. (2013). Learning and the disappearing association between governance and returns. *Journal of Financial Economics*, 108(2), 323-348.
- Bertrand, M., & Mullainathan, S. (2003). Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of Political Economy*, 111(5), 1043-1075.
- Boustanifar, H., & Kang, Y. (2022). Employee satisfaction and long-run stock returns, 1984-2020. *Journal of Financial Economics*. Advance online publication.
- Call, A. C., Campbell, J. L., Dhaliwal, D. S., & Moon, J. R. (2016). Employee compensation and financial misreporting. *Journal of Accounting and Economics*, 62(2-3), 214-240.
- Carvalho, A., & Areal, N. (2016). Great places to work: Resilience in times of crisis. *Human Resource Management*, 55(3), 479-493.
- Cascio, W. F. (2006). The high cost of low wages. *Harvard Business Review*, 84(12), 23-33.
- Chen, H., Leung, W. S., & Evans, K. P. (2016). Employee satisfaction and corporate innovation: The effect of employee relations on firm innovation. *Journal of Corporate Finance*, 41, 84-102.
- Chen, H., Chen, J. Z., Hsu, W., & Podolski, E. J. (2016). Employee treatment and firm innovation. *Journal of Financial Economics*, 119(1), 41-59.
- Cronqvist, H., Heyman, F., Nilsson, M., Svaleryd, H., & Vlachos, J. (2009). Do entrenched managers pay their workers more? *The Journal of Finance*, 64(1), 309-339.
- Daniel, K., Grinblatt, M., Titman, S., & Wermers, R. (1997). Measuring mutual fund performance with characteristic-based benchmarks. *Journal of Finance*, 52(3), 1035-1058.

- Ding, W., Levine, R., Lin, C., & Xie, W. (2020). Corporate immunity to the COVID-19 pandemic. *Journal of Financial Economics*, 141(2), 802-830.
- Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, 101(3), 621-640.
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383-417.
- Fama, E. F., & French, K. R. (1997). Industry costs of equity. *Journal of Financial Economics*, 43(2), 153-193.
- Gollie, P., & Pouget, S. (2014). The returns of socially responsible investment: Evidence from France. *Journal of Banking and Finance*, 47, 206-218.
- Hemingway, C. A., & Maclagan, P. W. (2004). Managers' personal values as drivers of corporate social responsibility. *Journal of Business Ethics*, 50(1), 33-44.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635-672.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kahneman, D. (1973). *Attention and effort*. Englewood Cliffs, NJ: Prentice-Hall.
- Konrad, A. M., & Mangel, R. (2000). The impact of work-life programs on firm productivity. *Strategic Management Journal*, 21(12), 1225-1237.
- Koys, D. J. (2001). The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. *Personnel Psychology*, 54(1), 101-114.
- Landier, A., Nair, V. B., & Wulf, J. (2009). Trade-offs in staying close: Corporate decision making and geographic dispersion. *The Review of Financial Studies*, 22(3), 1119-1148.
- Lee, T. W., Mitchell, T. R., Holtom, B. C., McDaniel, L. S., & Hill, J. W. (1999). The unfolding model of voluntary turnover: A replication and extension. *Academy of Management Journal*, 42(4), 450-462.
- Levine, D. I. (1992). Can wage increases pay for themselves? Tests with a production function. *The Economic Journal*, 102(414), 1102-1115.
- Lins, K. V., Servaes, H., & Tamayo, A. (2017). Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis. *The Journal of Finance*, 72(4), 1785-1824.
- Luo, Y., & Balvers, R. J. (2017). Socially responsible investing and market efficiency. *Journal of Financial Economics*, 126(3), 440-462.

- Mao, C. X., & Weathers, J. (2019). The effects of employee satisfaction on firm performance: The role of innovation and core business focus. *Journal of Corporate Finance*, 58, 175-193.
- Organ, D. W. (1977). A reappraisal and reinterpretation of the satisfaction-causes-performance hypothesis. *Academy of Management Review*, 2(1), 46-53.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, 48(4), 775-802.
- Pagano, M., & Volpin, P. F. (2005). Managers, workers, and corporate control. *The Journal of Finance*, 60(2), 841-868.
- Pastor, L., Stambaugh, R. F., & Taylor, L. A. (2021). Sustainable investing in equilibrium. *Journal of Financial Economics*, 142(2), 550-571.
- Podsakoff, P. M., Ahearne, M., & MacKenzie, S. B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology*, 82(2), 262-270.
- Schmitt, W. (2024, September 1). Fund bets happier workers produce healthier returns. *Financial Times*.
- Shan, C., & Tang, D. Y. (2023). The value of employee satisfaction in disastrous times: Evidence from COVID-19. *Review of Finance*, 27(2), 211-246.
- Sheridan, J. E. (1992). Organizational culture and employee retention. *Academy of Management Journal*, 35(5), 1036-1056.
- Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, 40(3), 658-672.
- Wadhvani, S. B., & Wall, M. A. (1991). A direct test of the efficiency wage model using UK micro-data. *Oxford Economic Papers*, 43(4), 529-548.
- Wei, X., Zhang, Y., & Zhao, J. (2020). Employee welfare and firm innovation: Evidence from Chinese manufacturing firms. *China Economic Review*, 61, 101371.

## 9. Appendix

**Table A1.** Sample selection for the Glassdoor list.

Sample Selection	# obs
Total number of firms on Glassdoor's BCs list from 2014-2023	900
Less: Non-public firms	(462)
Less: Firms not listed in the US	(72)
Final sample	<u>366</u>
Number of unique firms	143

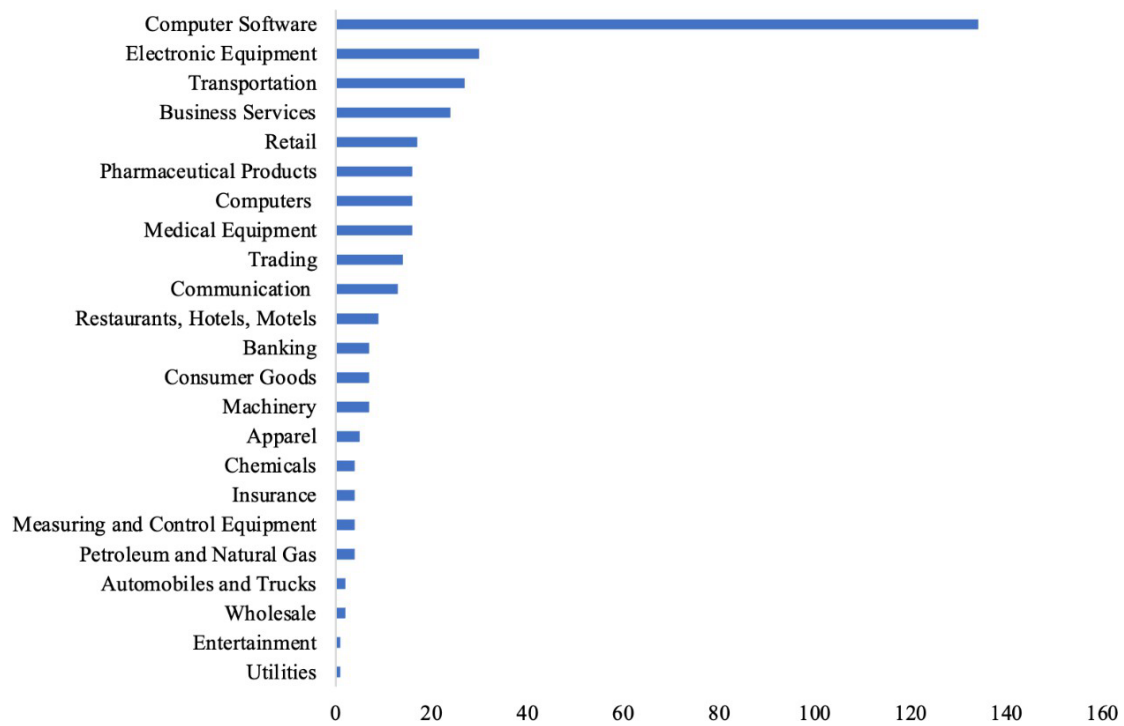
**Table A2.** Summary statistics for the Glassdoor list.

Year of List	List Size	BCs	Retained	Added	Dropped
2014	50	24			
2015	50	19	10	9	14
2016	50	21	12	9	7
2017	50	20	9	11	12
2018	100	40	15	25	5
2019	100	40	23	17	17
2020	100	41	21	20	19
2021	100	53	25	28	16
2022	100	55	29	26	24
2023	100	53	22	31	33

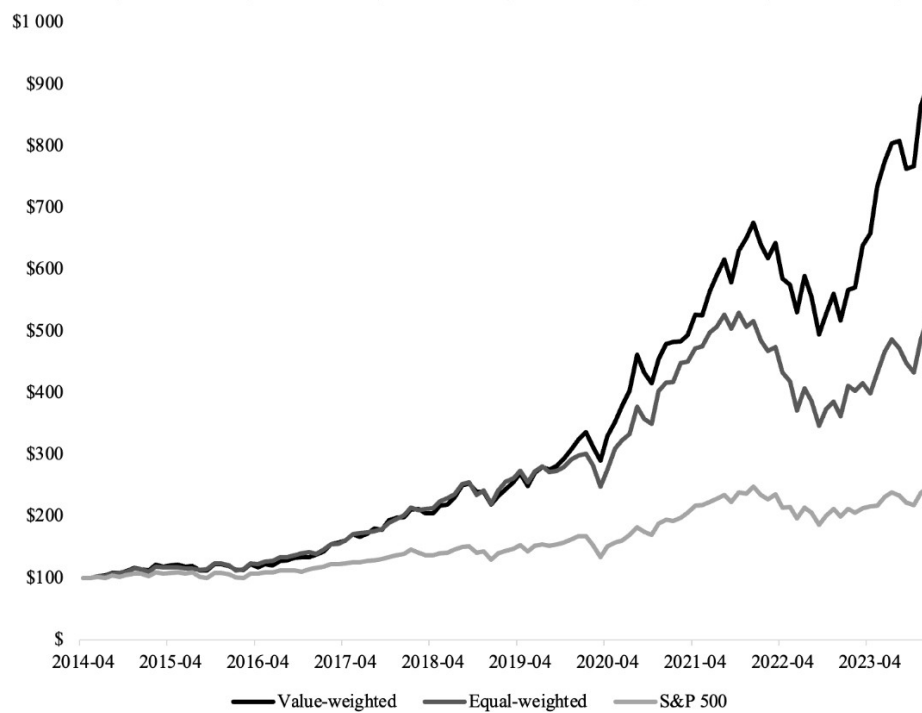
**Table A3.** Summary characteristics for the Glassdoor portfolio.

	# obs	Mean	Median	Std. Dev.	Min	Max
Market Cap (\$ bn)	345	170.22	51.30	341.24	0.26	2,551.59
Forward P/E	323	37.00	23.80	43.94	5.57	290.60
Dividend Yield	388	0.97%	0.16%	1.21%	0.00%	5.40%
Market/Book	345	12.53	6.26	27.72	- 175.61	262.92
Intangibles/Total Assets	329	0.24	0.19	0.20	0.00	0.82

**Figure A1.** Counts of Glassdoor BC's, by industry.



**Figure A2.** Glassdoor portfolio returns of \$100 invested at the end of April, 2014.



## **AI-Appendix/AI-Disclosure Detailing**

*What AI tools have been used and how?*

ChatGPT has been used for three purposes: providing input on the thesis paper structure, assisting with coding, and spell checks on our written material.

Firstly, after completing the literature review, we had a variety of ideas on how to structure our paper. When asking ChatGPT about it, we received input on the pros and cons of structuring it in different ways and help in identifying certain parts that might be redundant and should, therefore, be eliminated to stay within our research scope. Secondly, in terms of coding, ChatGPT served as an assistant in the coding process, complementing the material provided by the Accounting Department by offering more specific insights into how to empirically test the viability of an investment strategy. ChatGPT was helpful in terms of suggesting lines of code, as well as, detecting and understanding errors in the code. Thirdly, after we wrote a section of text, ChatGPT was helpful in highlighting any typos or grammatical mistakes that needed to be corrected to ensure proper English.

*In what ways have these tools contributed to increasing the quality of the thesis?*

The use of spelling and grammar checks has improved the paper's quality in terms of readability and clarity. Additionally, in terms of our methodology and results, we believe that feedback on the code used also helped us minimize the risk of errors in our STATA commands.

*What potential risks were found using AI and what measures were taken to reduce these risks?*

As discussed in the AI workshop hosted by SSE, AI tools can make errors. Hence, in terms of coding, we have been careful by doing everything one step at a time, working iteratively, and critically evaluating both the input and output to check if the code worked as intended. For example, when conducting the CAR test, we initially failed to correctly capture the cumulative effect, reviewed this part, and thereafter improved our code to properly conduct the test we intended to perform. We also made an active choice to limit the number of tests in our thesis (compared to Alex Edmans (2011)). Accordingly, in our paper, we only incorporated statistical methods we felt knowledgeable about, enabling us to execute the tests adequately and evaluate our results, thus ensuring the reliability of our findings. Additionally, by meeting with our supervisor at least biweekly, we had the opportunity to discuss almost every decision made along the way in the creation of our thesis.

*What are the insights gained from using AI tools in the thesis writing process?*

AI can be helpful, but one needs to use it carefully because it can make mistakes. A solid understanding of one's field of study and the statistical methods used is therefore essential.