The Value of Employee Morale in Mergers and Acquisitions: Evidence from Glassdoor*

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Abstract

In this paper, I define employee morale as employees' attitudes toward and perceptions of the tasks they perform and the dynamics within their companies. I explore how employee morale affects merger probability, merger outcomes, and the morale of the merged firm using various proxies. The paper makes several novel findings. Firms with similar employee morale are more likely to merge, achieve greater short-run and long-run post-merger synergies, perform more effective takeover restructurings, and exhibit higher likelihood and speed of merger completion. Firms with aligned morale demonstrate better post-merger integration compared to those with dissimilar morale. I introduce weather as an instrumental variable to proxy for morale, providing an additional test to strengthen the analysis, which confirms the significant impact of morale on these outcomes. Furthermore, the low (high) morale of target employees worsens (enhances) post-merger morale, subsequently worsening (improving) the acquiring company's performance. This finding highlights the transmission of low target employees' morale to acquirer employees as a key channel for worsened performance, and using an event study, I identify two primary mechanisms through which target morale transmits to acquirer morale – the integration of management and the integration of rank-and-file employees. The results also indicate that acquiring companies value the morale profile of target companies, often bidding for those with high morale.

Keywords: corporate takeover success and outcomes, labor markets, emotional (morale) contagion, target management and employee integration, Glassdoor
JEL Codes: G34, G41, M51

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I. Introduction

Greek philosophers have long been pondering on human-beings' desire for a good life. They have argued that humans are complex creatures who are not separate and distinct from other selves or from their social environment. Rather, humans are individual creatures who are constituted by their decisions and social creatures who are constituted by their interpersonal relationships. Since humans spend a large amount of their lives working in organizations, their happiness on the job has become a topic of discussion. Recent discussions on employees' well-being and workers' satisfaction have made us ponder on what makes for good organizations and happy employees in those organizations. A plethora of companies have committed themselves to lifting employees' spirits and allowing them to achieve happiness on the job.[3] Whether employee morale has an impact on a firm's success and failure and the success and failure of its respective activities and transactions is an area in finance research, I believe, with potential in light of the above-mentioned recent societal discussions on the level and importance of employees' well-being and the ways in which companies can boost and promote it. Some companies have even established systems for employees to register their emotions. For instance, Ubiquity Retirement + Savings allows employees to choose from five buttons when punching out of work every day. They can choose from a smiley face if they felt happy at work that day, a frowny face if they felt sad, and so on. In my paper, I use Glassdoor ratings as a proxy for employee happiness and, more specifically, I examine whether companies with similar employee morale and similar levels of employee happiness in mergers and acquisitions achieve merger success, whether high target morale transmits to acquirer employees' morale and, if it does, the impact this has on deal success.

Prior psychology literature has come up with three different definitions of morale based on the classical "needs psychology", on the hierarchy of needs, and on the interactions among members in a working group (Maslow, 1946; Haire and Gottsdanker, 1951; Mayo, 1933; Viteles, 1953). Those varying but connected definitions of morale serve as a starting ground for examining the impact of employees' perspectives (those toward their connection and purpose in the companies they work for) on corporate takeover outcomes. More specifically, I focus on the interactions among members in a working group. The paper's setting allows me to provide evidence on the

[3] The examples have been mentioned in the following article published on the online version of CNBC. The link to the article is the following: https://www.cnbctv18.com/business/heres-how-companies-are-trying-keep-employee-morale-up-amid-covid-pandemic-9772411.htm.

manner in which companies with similar employee morale operate when merging and on the manner in which high (low) target morale can improve (damage) acquiring companies' performance and morale. My research directly relates to emotional contagion, a form of social contagion, in which emotions and related behaviors spread among individuals in a group. The term emotional contagion was first coined in 1993 by Hatfield et al. (1993) as the tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally. Sigal Barsade has developed her research around the topic of emotional contagion, and, in her line of research, she has found that people in groups catch feelings from others through behavioral mimicry and changes in their brain functions. She has documented that positive (negative) feelings can spread firstly from the top and then to bottom levels within an organization, which has an impact on hard measures, such as financial performance and absenteeism. In this paper, I use corporate takeovers as an appropriate setting for providing evidence of emotional (morale) contagion in a finance context and I use various proxies of employee morale to measure the impact of target employees' emotions on acquirer employees' emotions and their consequent impact on the success of mergers and acquisitions.

In my paper, I use the setting of corporate takeovers to develop the manner in which emotional (morale) contagion spreads into the acquiring company and its impact on merger success and outcomes. I show that the positive emotions of target employees transmit to the acquirer employees' emotions leading to better performance for the acquiring company in the long run. More precisely, I use Glassdoor employee morale reviews as a proxy for employees' perceptions of company dynamics, their satisfaction with firms' working conditions, and their interactions with fellow colleagues. I use employee morale as my proxy, as it defines the attitudes of a working group with regards to the tasks the employees have in the companies they work for. Going forward, I use employee morale and satisfaction interchangeably. While prior literature has used the Glassdoor dataset, it has not utilized it in the context of M&A transactions. The purpose of the paper in that sense is to highlight the importance of employees' views of the companies they work for, to provide a novel approach to valuing the success and failure of merger and acquisition deals, and to shine light on the information employees possess prior to those deals.

I test two main hypotheses – whether similar companies in terms of their employee morale achieve greater post-merger synergies and integration and whether high targets' employee morale

is a necessary attribute for successful post-merger performance and integration. More specifically, I test the convergence of employees' emotions in acquiring and target companies as one potential channel, through which greater synergies for the acquiring company are achieved. I follow prior M&A finance literature (Rhodes-Kropf and Robinson, 2008; Lee et al., 2018; Hoberg and Phillips, 2010; Bereskin et al., 2018) to test my two hypotheses. I test the impact of employee morale similarity on merger probability, post-merger short-term and long-term synergies, labor restructurings, duration and likelihood of deal completion, and cross-sectional variation in post-merger integration. I conjecture that similar firms in terms of the morale of their employees will be more likely to announce mergers for the following two reasons. First, differences in the morale of companies' management as well as those of rank-and-file employees might negatively affect the success of merger negotiations. Second, those differences could have an adverse impact on post-merger synergies and integration. I go a step further from these findings and test the second hypothesis whether controlling for dissimilarity, high target morale improves post-merger success and outcomes. I perform tests with the impact of target morale on post-merger value, performance, integration, and morale. I conjecture that although the impact of target morale on the acquiring company is not seen in the short term, it can be observed in the long term. I document that positive target employees' satisfaction transmits to acquirer employees' satisfaction and impacts merger success positively.

The paper documents that firms with similar employee morale are more likely to merge, achieve greater return and operating performance synergies, perform greater takeover restructurings following the merger, and have a higher likelihood and a more rapid rate of deal completion. Thus, mergers between companies with similar employee morale achieve higher post-merger synergies and better post-merger integration than mergers between companies with dissimilar employee morale. I take it a step further and examine whether targets' employee morale is an important component for acquiring companies' post-merger success. Acquirers go after targets with high employee morale as viewed on the aggregate and as viewed by individual rating categories. This signifies that acquiring companies value the employee morale profile of target companies. Additionally, target employees with high morale take less time to be integrated into the acquiring company both in deals in which acquiring companies have high and low employee morale. I also observe one pattern that both target and acquiring employees exhibit as the merger nears. As the merger nears, work-life balance perceptions of both acquirer and target employees

become negatively associated with the merger probability. Both acquirer and target employees might become more stressed out due to longer work hours needed to assist in merger completion and/or divergent opinions on the advantages and disadvantages of the merger.

I make a few other novel findings in this paper. The high morale of target employees enhances the post-merger performance of acquiring companies, while results of low morale are inconclusive. However, I find no effect of target employees' happiness on the acquiring companies' performance in the short term. Still, I find evidence that mixing satisfied employees with unsatisfied employees impacts post-merger acquirer employee morale negatively and leads to greater differences in acquirer employee morale from year of merger announcement to year after merger announcement. Post-merger acquirer morale is impacted in the cases when a high employee morale acquirer acquires a low employee morale target and when a low employee morale acquirer acquires a high employee morale target. A low employee morale target pulls down the high employee morale of the acquiring company, while the high employee morale target pulls up the low employee morale of the acquiring company, though the effect disappears with time. Additionally, post merger-acquirer employee morale changes are more immediate in mergers in which a high employee morale target acquires a low employee morale target than in mergers in which a low employee morale acquirer acquires a high employee morale target. The above-mentioned findings signify the transmission of target employees' satisfaction as a channel for synergy achievement in corporate takeovers. Prior psychology literature has documented that positive (negative) emotions are associated with better (worse) performance, and similarly, I document that positive emotions of target employees positively impact the acquirer's morale and subsequently positively impact merger success and outcomes.

Prior finance literature has not largely examined the role of similarity in employees' attitudes and perceptions. Therefore, the paper documents the role of similarity using a novel setting that focuses on employees' interactions in the companies they work for. Still, some studies have focused on the impact of national culture on cross-border M&A deals (Frijns et al., 2013; Ahern et al., 2015; Guiso et al., 2006), while other studies have focused on the role of company culture in merger outcomes (Guiso et al., 2015; Bereskin et al., 2018; Schrowang, 2018). Human capital

relatedness also has an impact on merger outcomes.[4] Several papers have come up with measures of the pairwise relatedness of firms' human capital, human capital's role in innovation following mergers, the benefits of internal labor markets in acquisitions, and human capital's role in the optimal scope of the firm (Lee et al., 2018; Fulghieri and Sevilir, 2011; Tate and Yang, 2016; Beaumont et al., 2019). Like the above-mentioned papers, this paper defines human capital relatedness through employee morale similarity and examines its impact on M&A outcomes. I use similarity of employees' ratings, level and dispersion of employees' ratings, and similarity between textual portions of employees' reviews in Glassdoor as my proxies for human capital's morale. My paper builds on the above-mentioned papers and tries to fill the gap in our understanding of the role of employee morale in the success of corporate takeover deals.

Research utilizing Glassdoor has been growing due to its coverage of public firms and its presentation of employees' perceptions of various firm dimensions. For instance, papers have studied the association between financial reporting and job satisfaction and have found support for employees' reviews being accurate assessments of and revealing value-relevant information about a firm's performance (Ji et al., 2017; Green et al., 2019). Other more recent papers utilizing the Glassdoor dataset focus on themes, such as employee sentiment, gender diversity, misconduct risk, maternity leave benefits, and the relationship between management's ability and a company's ESG efforts (Marchetti, 2019; Chen at al., 2022; Campbell and Shang, 2021; Liu et al., 2022; Welch and Yoon, 2021). In the spirit of previous Glassdoor research, my paper shines light on the impact of employees' attitudes (looking at mean, dispersion, similarity of ratings, and similarity of textual portions of reviews) on merger probability, post-merger value, performance, integration, and merged firm morale.

Finally, the paper adds life to the importance of the human element in firms and to the importance of employees' happiness for the success of financial transactions. For example, Bach et al. (2021) use employer-employee level data linked to individual health records to document that incidence of various health conditions increases following acquisitions. Additionally, Tookes and Yimfor (2021) use the investment advisory industry as a laboratory to test for evidence of improvements in employee misconduct following M&A events and show that similarities in

[4] For the preparation of this section, I have found the Greene, Kini, Shen, and Shenoy (2021) paper very helpful in summarizing the manner in which labor plays a role in mergers and acquisitions.

misconduct are evidence of complementarities where the merged firm is capable of taking advantage of target and acquirer mechanisms for monitoring and disciplining employees. Gehrke et al. (2021) argue that mergers create internal labor markets where acquirers, whose employees are better educated, better paid, and more qualified, hire new employees who are much younger and less expensive. My paper builds on the above-mentioned papers and examines the impact of a firm's internal labor force on various outcomes in mergers and relates that to employees' overall morale and happiness in the companies they work for.

The remainder of the paper is organized as follows. Section II builds the two hypotheses tested in the paper (whether employee morale similarity impacts merger success and whether controlling for dissimilarity, high target employee morale improves merger success) based on prior literature. Section III describes the datasets used to test the hypotheses, the matching technique of the various datasets, the main employee morale proxy and additional employee morale proxies, and the sample's summary statistics. Section IV documents the various empirical tests and results related to the two hypotheses in Section II. Section V concludes and highlights the implications of the paper's results.

II. Hypotheses Development

Prior psychology literature has come up with three different definitions of morale based on the classical "needs psychology", on the hierarchy of needs, and on the interactions among members in a working group (Maslow, 1946; Haire and Gottsdanker, 1951; Mayo, 1933; Viteles, 1953). More specifically, I focus on the interactions among members in a working group. The paper's setting allows me to provide evidence on the way companies with similar employee morale operate when merging and on the way high target morale can improve acquiring companies' morale and performance. To do so, I use another strand of psychology literature – the one related to emotional contagion. The term emotional contagion was first coined in 1993 by Hatfield et al. (1993) as the tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally. More broadly, emotional contagion is a form of social contagion in which emotions and related behaviors spread among individuals in a group. Psychology researchers have documented that people in a group catch feelings from others through behavioral mimicry and changes in brain functions

(Barsade et al., 2018; Barsade and O'Neill, 2016; Barsade et al., 2019; Barsade and Ozcelik, 2018; Barsade and Knight, 2015). They show that positive (negative) emotions spread among people within organizations and impact even hard measures, such as financial performance and absenteeism. The authors argue that it is up to management to set values to be followed throughout the organization and that their behavior and satisfaction spread to lower ranks within the organization. They also document that if an individual feels they don't fit in the organizational morale, they will be more likely to move to a different department (division) within the same organization or move to a different one if the organization has homogenous morale among all departments (divisions). I relate Hypothesis H1 and Hypothesis H2 to emotional (morale) contagion in a corporate takeover setting and conjecture that target employees' morale spreads to acquirer employees' morale subsequently impacting merger success and outcomes.

Prior management literature has determined the importance of members of a working group sharing cognitive constructs such as values, beliefs, and norms. O'Reilly (1989) highlights the attributes of a group that are needed to achieve effective coordination. This can also be translated in a firm since a firm gathers employees from different walks of lives, education, parental upbringing, cognitive attributes, and so on. Therefore, the paper's setting allows me to provide evidence on the way companies with similar morale attributes operate when merging and their impact on merged companies' performance. Prior finance literature has examined different similarities, in terms of market-to-book ratios, human capital, product descriptions, and ESG practices between acquirers and targets, that could enhance the performance of the merged company (Rhodes-Kropf and Robinson, 2008; Lee et al., 2018; Hoberg and Phillips, 2010; Bereskin et al., 2018). In a similar vein, prior management literature has also explored the different manners in which similarity between two merging companies will lead to a successful merger, whether that is a high degree of overlap in the two companies' technologies, operations, products, customers, or distribution channels (Chatterjee, 1986; Homburg and Bucerius, 2005; Seth, 1990; Singh and Montgomery, 1987). Those types of similarities across two businesses give acquirers the opportunity to improve their profitability and achieve economies of scale through the elimination of redundant activities or transfer of resources. Building on the findings in these papers, I would expect that firms with high similarity of employees' happiness toward the acquirers and targets employees work for would contribute to better post-merger performance and integration. More specifically, I find that acquirers and targets with similar employee morale are

more likely to merge and achieve greater short-term and long-term synergies, carry out greater takeover restructurings, achieve greater speed of deal completion, and have a higher likelihood of deal completion. Therefore, positive (negative) acquirer and target satisfaction positively (negatively) impacts merger success and outcomes. The matching of companies with high (low) morale leads to greater (lower) merger success.

- **H1:** Mergers between acquirers and targets with similar employee morale are more likely to occur and those mergers achieve greater post-merger synergies.

After establishing that similar companies in terms of employee morale achieve greater post-merger integration, I provide various evidence that targets' employee morale is an asset to acquiring companies. Grossman and Hart (1986), Hart and Moore (1990), and Hart (1995) build the property rights theory of the firm and use the main argument in all three papers that complementary assets should be bound together under common ownership. In the spirit of the above three papers, I show that a high target's morale is an asset to the acquiring company and that it improves the acquiring company's performance and morale. Other researchers in the management literature have explored the value of employees' happiness and have argued that having employees who feel compelled to go the extra mile should boost firm efficiency, something that eventually results in superior company performance (Schneider et al., 2003; Gavin and Mason, 2004; Kiewitz, 2004). Management literature on M&A integration has determined that the success of M&A deals depends heavily on achieving the right level of integration in terms of knowledge transfer and operations (Birkinshaw et al., 2010; Ranucci and Souder, 2015). Therefore, there is a benefit in going a step further and determining whether the high morale of the target company can lead to a better level of post-merger integration. I ask the question of what targets' employee morale attributes are important for acquiring companies that allow them to achieve great post-merger integration and how pre-merger morale impacts post-merger morale. After documenting that companies with similar employee morale work well together, I examine whether companies with dissimilar employee morale work well together. I find that acquiring companies go after targets with high employee morale both in terms of aggregated ratings and various rating categories and that the high morale of target employees improves acquiring companies' long-term performance and morale. Therefore, positive target satisfaction positively impacts negative acquirer satisfaction which leads to greater merger success. The findings for this hypothesis point

to positive morale of target employees being contagious for acquiring employees, consequently impacting merger success.

- **H2:** Controlling for dissimilarity, high target morale is an asset to acquirers and improves the success of merger deals.

III. Data and Summary Statistics

A. Data

I utilize four main datasets to form the main sample – Glassdoor, Refinitiv's SDC, Compustat, and CRSP. Glassdoor is a job and recruiting website which helps employees, job seekers, employers, and recruiters in sharing and finding information about the company of their interest and post company reviews, interview questions and reviews, salary details, and any other career-related decision information. In this study, I focus on the information derived from employee satisfaction surveys. The Glassdoor database has been utilized in previous studies due to its coverage of public firms and its presentation of the perception of a firm's morale from employees' standpoint. The use of Glassdoor has some benefits over the use of databases, such as KLD, since it offers a more direct way to examine employees' experience, doesn't suffer from self-reported metrics, and allows for more flexibility and breadth to measure employee morale. It is possible that the Glassdoor database is overrepresented with information from a firm's disgruntled and unhappy employees. Still, the oversampling of dissatisfied employees does not appear to be a problem in the database since it has been reported that the lowest number of submitted ratings represents one-star ratings. In my sample, those ratings are rare. Furthermore, another fact to keep in mind is that only employees, who post reviews for their own companies, view the reviews of other firms' employees which adds incentives for employees to post their reviews and eliminates the concern of the oversampling of dissatisfied employees.

Additionally, there has been a growing literature on the wisdom of the crowd in financial research and, in that case, I consider employees as a crowd whose wisdom is a signal about companies' performance and is a signal to financial markets. Even though I don't consider a typical channel of crowd wisdom, since employees review their own satisfaction with the companies they work for in Glassdoor, I believe that averaging across many employees will mitigate the effect of any idiosyncrasies in the dataset. I also believe that employee morale causes and impacts a

company's financial performance. I also believe that in an efficient market, employees' views of the companies they work for will be incorporated into stock prices. The Glassdoor dataset allows me to also account for when that information is incorporated into a company's performance.

I utilize the SDC M&A data to download all deals from 2008 to 2020. Following prior finance literature, I include the following types of deals in my sample – completed mergers involving both U.S. acquirers and targets in which the acquirer owns less than 50% of the target firm prior to the bid, owns more than 90% after the acquisition, and mergers whose deal value exceeds $1 million. I use the following approach to come up with the final sample. First, I merge the Glassdoor database with SDC M&A data based on the acquirer's and target's Internet addresses and do a fuzzy match on the acquirer's and target's names. The initial SDC sample of M&A deals spanning from 2008 to 2020 consists of 3,578 deals, while the merged sample includes 616 deals. The M&A-Glassdoor sample is merged with Compustat based on website address and name and then the resulting dataset is merged with CRSP using the Compustat-CRSP link table based on lpermno and permno.[5] When merging with Compustat and CRSP to acquire financial and return information, the M&A sample drops to 255 deals in the period between 2008 and 2020. The final sample consists of 255 deals and 15,223 acquirer reviews and 7,273 target reviews for all deals in the year prior to the actual merger as some deals drop due to missing Glassdoor data.

For the pseudo sample, which I use to calculate the probability of a merger in Table 2, I match the main deal sample with other firms present in Compustat and CRSP based on the SIC-industry code and find one pseudo target to match with the actual acquirer based on the actual target's characteristics and one pseudo acquirer to match with the actual target based on the actual acquirer's characteristics. That results in 510 pseudo deals and 255 actual deals. Following Bena and Li (2014), for each actual deal-pair in every year, I form pseudo pairs by matching the actual acquirer with one matched pseudo target based on the above-mentioned actual target's firm characteristics and by matching the actual target firm with one matched pseudo acquirer based on the above-mentioned actual acquirer's characteristics. Unlike Bena and Li (2014), who find up to

[5] The approach mentioned to merge Glassdoor and Compustat has also been used by Green et al. (2019) where they also match on Internet address and do a fuzzy match. I am using a similar approach to match the companies on their website address and on their name both provided in Glassdoor. In merging Glassdoor with only Compustat I get 1,491,582 reviews for 3,546 firms for firms present in Compustat in 2020 (Note: those numbers are out of a total of 7,672,711 reviews for 484,374 companies from 2008 to 2020 based on the sample I have). The authors in this paper get 3,906 firms with over one million reviews when merging.

five pseudo companies for every acquirer and target, I find only one pseudo company to match on industry, size, and book-to-market.

B. Employee Morale Similarity Measure

Consistent with prior research, I use the cosine similarity measure as introduced in Jaffe (1986) to determine the employee morale similarity between the target and the acquiring firm.

$$\textbf{(1)}\ EmployeeMoraleSimilarity_{ijt} = \frac{X_{it}X'_{jt}}{(X_{it}X'_{it})^{0.5}(X_{jt}X'_{jt})^{0.5'}}$$

To do so, I create vectors corresponding to firm i's and j's scores in each category and aggregate them to create the cosine similarity measure between acquirer and target for every pair in every year in the sample. The respective categories in Glassdoor are *Overall Rating*, *Career Opportunities*, *Compensation Benefits*, *Senior Leadership*, *Work-Life Balance*, and *Culture Values* in the range between 1 and 5 with 1 being the lowest rating and 5 being the highest rating an employee can give to their employer. The cosine similarity measure ranges between 0 and 1 where it equals one for two firms (i, j) whose employee morale is identical, and zero for two firms whose employee morale profiles are orthogonal. To calculate the cosine similarity measure, I take a vector of the rating categories for both the acquirer and the target and measure the similarity between the two for every year. Since the vectors should include non-zero values, I drop any reviews where all ratings are zeros (missing) for either the acquirer or the target. Thus, the reviews in the sample drop because of the way the cosine similarity measure is calculated. In addition, I calculate the mean and dispersion of employee morale ratings using the standard deviation of acquirer, target, and merged firm ratings. I aggregate the individual ratings for each firm every year and calculate the mean and standard deviation of the resultant values. I also use mean and standard deviation one month before merger announcement date and textual similarity between acquirer and target pros, cons, and feedback.

C. Summary Statistics

[Insert Table 1 here]

[Insert Figure 1 and Figure 2 here]

Table 1 presents the summary statistics for the actual sample. Panel A of Table 1 presents acquirer and target firm characteristics which are consistent with M&A literature. As one can see,

acquirers are larger than targets, have higher profitability, and exhibit lower R&D intensity than target firms. Panel B provides characteristics about sample deals (81% of the firms are in the same industry and 21% are high-tech firms) and offer structure (54% of the deals are all-cash offers and 23% of the deals are tender offers). Panel C provides summary statistics on the mean and dispersion of employee morale ratings and the cosine similarity between acquirer and target ratings. Both mean and dispersion of target and acquirer ratings increase from the year before to the actual deal year. Consistent with the definition of cosine similarity, the measure ranges between 0 and 1 with the mean value being 0.61. The mean of both acquirer and target ratings is similar but the standard deviation appears to be slightly higher for acquirers' ratings as the variability of acquirers' employee opinions seems to be greater one month before the merger announcement date. Table A1 (in the Appendix) presents the correlations between my main proxy for employee morale in the paper – the similarity between acquirer and target ratings – and ESG ratings for the acquirer and target companies, respectively, in my deal sample. All ESG ratings included are related to the company's expressed responsibility toward various company stakeholders – overall ESG score, controversies score, employee satisfaction score, social pillar score, governance pillar score, human rights score, community score, product responsibility score, management score, and workforce score.

As one can observe in this table, even though the correlations between all of those measures and the employee morale similarity measure are positive, the correlations are very small. The smallest correlations are between employee morale similarity and the employee satisfaction score for both acquirer and target (0.0624 and 0.1223, respectively). It is logical that the correlations between the ESG scores and employee morale would be positive, but as explained below, there is a benefit to exploring the manner in which the similarity between employees' perceptions a year before the merger announcement impacts the success of merger deals, the manner in which employees' perceptions change in light of the deal, and the manner in which similar and dissimilar companies collaborate together. Table A1 also presents the distribution of the deal sample by deal announcement year. The frequency of deals increases over time but decreases in more recent years. Figure 1 plots the number of deals against deal value by deal announcement years. According to the sample, M&A deal value increases over time after The Great Recession, during which it has its through, and has its peak in 2019 during which some mega deals have taken place.

IV. Empirical Tests and Results

In this section, I test the hypotheses developed in Section II. To test the first hypothesis, I follow prior M&A literature (Rhodes-Kropf and Robinson, 2008; Lee et al., 2018; Hoberg and Phillips, 2010; Bereskin et al., 2018). I test the impact of employee morale similarity on merger probability, short-term and long-term synergies, labor restructurings, duration and likelihood of deal completion, and cross-sectional variation in post-merger integration. I conjecture that similar firms in terms of the morale of their employees will be more likely to announce mergers for the following two reasons. First, differences in the morale of companies' management as well as those of rank-and-file employees might negatively affect the success of merger negotiations. Second, those differences could have an adverse impact on post-merger synergies and integration. I go a step further from these findings and test the second hypothesis whether controlling for dissimilarity, high target morale improves post-merger success and outcomes. I perform tests with the impact of target morale on post-merger performance, integration, and morale. I conjecture that although the impact of high target morale on the acquiring company is not seen in the short term, it can be observed in the long term. I follow prior psychology literature to connect my findings to the satisfaction of one working group impacting the satisfaction of another working group. I argue that positive (negative) acquirer and target satisfaction positively (negatively) impacts merger success and outcomes. I also argue that positive emotions of target employees toward the employers they work for spread to the acquiring company and lead to high morale and subsequently to high merged company performance.

The findings in this section are consistent not only with finance and management literature, but also with psychology literature. Various psychology papers have shown that group identity is an important type of an individual's identity. Those papers have stressed the importance of interactions among members in a working group. For instance, Mayo (1933) highlights a technique that would allow people to work together in an industrial organization. He has also documented each individual's need and right to feel he is of economic value to the organization.[6] Viteles (1953) has emphasized that levels of motivation and morale are a result of the total work situation and its

[6] 'The Human Problems of Industrial Civilization', as documented by Elton Mayo (1933), also outlines that people's feeling of belonging to the whole and of contributing to communities' economic value is the most important aspect of human nature we have recklessly disregarded in our "triumphant industrial progress." The Human Problems of an Industrial Civilization | Nature

many dynamic interrelations which involve both the individual and the smaller groups in a larger social field. Sigal Barsade has developed her research around the topic of emotional contagion, and, in her line of research, she has found that people in groups catch feelings from others through behavioral mimicry and changes in their brain functions. She has documented that positive (negative) feelings can spread firstly from the top and then to bottom levels within an organization, which has an impact on hard measures, such as financial performance and abseentism. The paper's setting allows me to provide evidence on the way companies with similar employee morale operate when merging and on the way high target morale can improve acquiring companies' performance and morale. The findings have implications for whether employees who feel like they belong to the whole are more productive and perform better.

A. Employee Morale Similarity and Merger Pair Likelihood

[Insert Table 2 here]

In this sub-section, I investigate the relation between companies' employee morale similarity and the likelihood of merger announcements. I conjecture that similar firms in terms of their morale are more likely to announce mergers. To test this, I document the logit regression estimates of the following model:

$$\textbf{(2)}\ Deal_{ijt} = \alpha + \beta_1 Morale\_Sim_{ijt-1} + \beta_2 Mean_{it-1} + \beta_3 Mean_{jt-1} + \beta_4 SD_{it-1} + \\ + \beta_5 SD_{jt-1} + X_{ijt-1}\gamma + \varepsilon_{ijt}$$

The dependent variable is equal to 1 if the pair of the acquirer and target is an actual deal, and 0 otherwise (that means that the observation is a pseudo one). The main independent variables of interest are employee morale similarity and acquirer and target mean and dispersion of ratings. In addition, I add acquirer and target controls which include acquirer's and target's book-to-market, ROA (following prior literature, I use the EBITDA divided by the book value of assets), leverage (the book value of leverage divided by the book value of assets), sales growth (this current year's sales divided by prior year's sales), cash (cash and short-term investments) and R&D intensity (R&D divided by the book value of assets). The table reports results of logit regressions with employee morale proxies and control variables. All models report the results relative to a control sample of pseudo deals matched based on year, industry, size, and book-to-market. Following Bena and Li (2014), each actual acquirer is matched with a pseudo target based on actual target's above-mentioned characteristics (industry, size, and book-to-market), while each actual target is

matched with a pseudo acquirer based on actual acquirer's above-mentioned characteristics (industry, size, and book-to-market).

Model (1) in Panel A focuses on employee morale similarity as the main variable of interest. I find a positive and statistically significant coefficient (at the 1% level) on the Morale_Sim variable. This provides evidence that the greater the similarity between acquirer and target employee morale ratings, the greater the probability that those two firms will engage in an actual merger relative to an industry-size-BTM matched pseudo sample (which is consistent with Hypothesis H1). To provide economic significance of the coefficient in Model (1), a one standard deviation increase in employee morale similarity (Morale_Sim) leads to a 16.71% increase in the probability of a merger which demonstrates a strong and significant relationship between employee morale and merger probability. Models (2) and (3) focus on the mean and standard deviation of acquirer and target ratings (ratings one year before the merger announcement date), respectively, as the main independent variables of interest. The coefficients on mean for both acquirer and target are positive and statistically significant at the 1% level, while the coefficients on standard deviation for both acquirer and target are negative and statistically significant at the 1% level for the acquirer and at the 5% level for the target. Taken together, the results suggest that mean of acquirer and target ratings is positively associated with the likelihood of that pair merging relative to an industry-size-BTM matched control sample of hypothetical deals, while dispersion of acquirer and target ratings is negatively associated with the likelihood of that pair merging relative to an industry-size-BTM matched control sample of hypothetical deals. In Model 4, I combine mean and standard deviation of acquirer and mean and standard deviation of target in one model and find a positive and statistically significant coefficient on both mean of acquirer and target. In Model (5), I combine all employee morale proxies and find a positive and statistically significant coefficient on the employee morale proxy (Morale_Sim) at the 1% level (2.480). However, the effect on Mean_Acq disappears in the full-variable model. The results in the full-variable model point to acquirers seeking to merge with target companies with high morale.

B. Employee Morale Similarity and Short-Term Synergies

[Insert Table 3 here]

In sub-section B, I investigate the relation between companies' employee morale similarity and short-term synergies (announcement cumulative abnormal returns). I conjecture that similar firms

would experience higher short-term merger synergies. To test this, I present the association between employee morale similarity and combined announcement returns using a value-weighted portfolio of acquirer and target returns. I also compute cumulative abnormal returns with an alternative portfolio of equal-weighted acquirer and target returns (results are presented in the Appendix), though the main results are presented in Table 3 with CARs in the [-3, +3] event window. To calculate abnormal returns, I use a market model with the CRSP value-weighted return as the benchmark return, using days -219 through -20 relative to the merger announcement date (t=0) as the estimation period. Cumulative abnormal returns are calculated over the -3 to +3 trading-day period centered on t=0. In addition, I create deciles for the employee morale similarity measure and take the top and bottom deciles to create high similarity and low similarity variables. Table 3 reports the results of OLS regressions for the 7-day abnormal returns centered at the deal announcement date for a value-weighted portfolio using acquirer and target returns. The deal characteristics used in the three models include indicator variables for firms incorporated in the same state, for firms in the same SIC-industry code, for firms belonging to high technology industries, for the deal being an all-cash deal or a tender offer, and for the relative size of the deal. The controls included in the models, such as combined book-to-market, book leverage, cash, and size, and cultural similarity and product similarity between the acquirer and target, have been shown in prior research to drive merger and acquisition deals.

In Table 3, the CAR analysis is presented in a multivariate setting with the CAR for a value-weighted portfolio, which is an appropriate proxy for a merger's short-term gains, as the dependent variable, the employee morale similarity measure as the main independent variable of interest, and the combined acquirer and target firm characteristics and deal variables as the control variables. All models include year and industry fixed effects. In Panel A, High_Morale_Sim and Low_Morale_Sim take the value of 1 if the deal pair is in the top 10% or in the bottom 10% of the employee morale similarity measure, respectively. The employee morale similarity coefficient is positive for the value-weighted portfolio in the [-3, +3] event window and is statistically significant at the 5% level. A one-standard-deviation increase in employee morale similarity is associated with an additional 0.48 percentage point increase in the dependent variable CARs. The results in the [-3, +3] event window in Panel A also hold for alternative event windows, such as [-1, +1] and [-5, +5], in Panel B. Low employee morale similarity mergers, as shown in Panel A, are associated with 1.10% lower combined announcement returns. This suggests that when morale similarity is

low between the merging firms, the market reacts negatively, resulting in a 0.428% decline in CARs around the merger announcement date. This negative reaction reflects the market's concern about the potential challenges in integrating firms with dissimilar employee morale (which is consistent with Hypothesis H1).

C. Employee Morale Similarity and Long-Term Synergies

[Insert Table 4 here]

In sub-section C, I investigate the relation between employee morale similarity and long-term synergies (abnormal return on assets). I expect that similar firms experience higher expected long-term synergies. To test this, I use the following model.

$$\textbf{(3)}\ ROA_{ijt+T} = \alpha + \beta_1 Morale\_Sim_{ijt-1} + \beta_2 High\_Morale\_Sim_{ijt-1} + \beta_3 Low\_Morale\_Sim_{ijt-1} + X_{ijt-1}\gamma + \varepsilon_{ijt}$$

Abnormal operating performance is calculated as the return on assets, which is EBITDA scaled by assets in the beginning of the year, two and three years following the deal announcement minus the median ROA in the firm's SIC-industry code in the corresponding year. Panel A reports results of regressions with morale similarity proxies. The main independent variables of interest remain Morale_Sim, High_Morale_Sim, and Low_Morale_Sim. Equation (3) also includes the same pair controls and year and industry fixed effects as in the previous regressions. Models (1) and (2) present results for regressions with abnormal ROA of the merged firm for the first two years after the merger announcement date as the dependent variable (average of abnormal ROA for Years 1 and 2), while Models (3) and (4) present results for regressions with abnormal ROA of the merged firm two and three years after the merger announcement date as the dependent variable (average of abnormal ROA for Years 2 and 3). The controls included in the models, such as combined book-to-market, book leverage, cash, and size, and cultural similarity and product similarity between the acquirer and target, have been shown in prior research to drive merger and acquisition deals. I find no effect of employee morale similarity on abnormal ROA. The results are inconsistent with the hypothesis that mergers with similar employee morale result in higher long-term synergies for the merged firm (Hypothesis H1).

D. Employee Morale Similarity and Labor Restructurings

[Insert Table 5 here]

In sub-section D, I investigate the relation between employee morale similarity and labor restructurings in the years following the merger announcement. I expect those companies with higher similarity to let go of their employees, likely due to an overlap of their employees' qualifications. To test this, I use the following model.

$$\textbf{(4)}\ Labor\ Restructurings_{ijt+T} = \alpha + \beta_1 Morale\_Sim_{ijt-1} + \beta_2 High\_Morale\_Sim_{ijt-1} + \beta_3 Low\_Morale\_Sim_{ijt-1} + X_{ijt-1}\gamma + \varepsilon_{ijt}$$

Equation (4) is set up similarly to equations (2) and (3) but with a different dependent variable. I define labor restructurings as the percentage change between post-merger employment (combined companies' employment in the years following the merger) and pre-merger employment (separate companies' employment in the year before the merger announcement). After computing labor restructurings for Years 1 through 3 and for Years 4 through 6, I take the natural logarithm of these two variables. Table 5 explores the way employees' attitudes are associated with labor restructurings. The main independent variables of interest remain Morale_Sim, High_Morale_Sim, and Low_Morale_Sim. Morale_Sim is the main independent variable of interest as in the previous tables. The same pair controls and year and industry fixed effects are included in the equation as in previous regressions. Models (1) and (2) show results of regressions with combined labor restructurings from year one through year three after the merger (percentage change between acquiring companies' employment one, two, and three years after the merger and one year before the merger), while Models (3) and (4) show results of regressions with combined labor restructurings from year four to year six (percentage change between acquiring companies' employment four, five, and six years after merger and three years after the merger). The controls included in the models, such as combined book-to-market, book leverage, cash, and size, and cultural similarity and product similarity between the acquirer and target, have been shown in prior research to drive merger and acquisition deals.

The results suggest that the higher the similarity in acquirer-target pairs, the higher the labor restructurings in those firms. For example, in the first 1-3 years, a one standard deviation increase in morale similarity leads to a 20.77% increase in labor restructurings, while in the 4-6 years after the merger, a one standard deviation increase in morale similarity leads to a 35.54% increase in

labor restructurings. Similar firms are more likely to let go of their employees to cut costs and reduce redundant roles and participate in labor restructurings. It is likely that in deals with similar employee morale, employees have more similar qualifications and work experiences, or employees hold redundant job functions that get eliminated following the merger (which is consistent with Hypothesis H1). It could also be that there are greater new hires and role shifts, and even changes in management and leadership.

E. Employee Morale Similarity, Duration and Likelihood of Deal Completion

[Insert Table 6 here]

In this sub-section, I investigate the relation between employee morale similarity and duration and likelihood of deal completion. I conjecture that employee morale similarity leads to a more rapid rate of deal completion (days from deal announcement to deal completion) and a higher likelihood of deal completion (in comparison to deals that have been announced but fall through after the announcement). I report the results of those tests in Table 6. In Panel A, I examine whether employee morale similarity between acquirers and targets affects deal completion time (using the main sample of 255 deals). I report results of deal completion duration with morale similarity, mean, and variability in employee morale. The results in Panel A of Table 6 suggest that mergers between acquirers and targets with similar employee morale are associated with a more rapid rate of deal completion. Additionally, deals in which acquirers and targets have high mean and low dispersion of employee morale are associated with a more rapid rate of deal completion. The results in Panel A suggest that in deals with similar employee morale, companies can spend more time on integration rather than on pondering the completion of the deal.

Panel B presents results of likelihood regressions with completed and uncompleted deals. The final sample spanning from 2008 to 2020 comes up to 318 deals with 63 uncompleted deals being added to the 255 completed deals. The results show that the higher the similarity between acquirer and target employee morale, the higher the likelihood of deal completion, while the lower the mean of acquirer and target employee morale, the higher the likelihood of deal completion (all results are statistically significant at the 1% level). When mean and standard deviation are split into categories (results are presented in the Appendix), one can see that the higher the culture values and senior leadership, as perceived by both acquirer and target employees, the higher the likelihood of deal completion. In addition, the lower the work-life balance and overall rating mean and the

higher the dispersion of those two categories, as perceived by acquirer employees, the higher the likelihood of deal completion. The results suggest that senior leadership (as perceived by both acquirer and target employees) is important for deal completion and that the success of mergers depends on managers' abilities and skills and on employees' attitudes toward senior management.

F. Textual Similarity of Acquirer and Target Pros, Cons, and Feedback Sections and Short-Term and Long-Term Synergies

[Insert Table 7 here]

[Insert Figure 3 here]

In sub-section F, I test the relation between textual similarity of acquirer and target pros, cons, and feedback sections in Glassdoor and short-term and long-term synergies. I expect that similarity between textual portions of acquirer and target morale leads to higher expected short-term and long-term post-merger value. To test this, I use equations (2) and (3) with textual similarity of acquirer and target pros, cons, and feedback sections (Sim_Pros, Sim_Cons, and Sim_Feedback, respectively) as the independent variables and announcement cumulative abnormal returns and abnormal operating performance as my main dependent variables of interest. The cosine similarity between the various textual review sections is calculated based upon 24,132 pros reviews for acquirer and 6,032 pros reviews for target, based upon 24,127 cons reviews for acquirer and 6,027 cons reviews for target, and based upon 13,250 feedback reviews for acquirer and 3.490 feedback reviews for target. Table 7 reports Cumulative Abnormal Returns (CARs) around merger announcement and abnormal ROA one and two years and two and three years after merger announcement for the 255 actual deals in the sample using the cosine similarity between the pros, cons, and feedback sections of acquirer and target companies. To compute the cosine similarity for textual portions between the acquirer and the target, I first pre-process the text. I break down the textual sections into individual words or tokes, convert all text to lowercases, remove common stop words, reduce words to their root forms, and remove any punctuation. Then, I convert the preprocessed text into numerical vectors. For this purpose, I use the bag of words approach in which each word in the corpus becomes a feature in the vector and the TF-IDF approach in which I assign a weight to each word based on their frequency within each review relative to their frequency in each section. This vectorization would provide two vectors – one for the acquirer and one for the target. I then apply the cosine similarity which is shown in equation (1) above.

The dependent variable in Panel A is CARs in the [-3, +3] event window for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The dependent variable in Panel B is abnormal operating performance in years one and two and in years two and three after the merger announcement date. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs and abnormal ROA as the dependent variables with Sim_Pros, Sim_Cons, and Sim_Feedback as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values and are included in the models but are not reported in the tables. I find no effect of textual similarity between acquirer and target (pros, cons, or feedback similarity) on short-term synergies, while I find a positive and statistically significant effect of feedback similarity on abnormal ROA one and two years after and two and three years after the merger announcement date. The results show that companies with more similar opinions of employees around the feedback of working for their companies achieve higher long-term synergies. The table adds support to morale similarity (feedback similarity) having a positive impact on long-term synergies which is consistent with Hypothesis H1. Figure 3 plots present bubble clouds of the most frequent words in the pros, cons, and feedback sections from acquirer and target written reviews in Glassdoor (24,132 pros reviews, 24,127 cons reviews, and 13,250 feedback reviews for the acquiring company sample and 6,032 pros reviews, 6,027 cons reviews, and 3,490 feedback reviews for the target company sample). As one can observe, the frequency of words of both acquirer and target are highly similar pointing to acquirer and target employees' reviews possessing common patterns and to acquirer and target employees placing value to similar attributes of workplace dynamics.

G. Cross-Sectional Variation in Post-Merger Integration Needs

[Insert Table 8 here]

[Insert Figure 4 here]

In this sub-section, I implement cross-sectional analyses to provide further evidence on the post-merger integration channel. Specifically, I examine whether the impact of employee morale similarity on short-term and long-term synergies (cumulative abnormal returns and abnormal operating performance, respectively) is significantly stronger in situations in which post-merger integration would be of greater importance to the acquiring firm. In Panels A and B of Table 8, I examine whether certain industries in the sample exhibit greater sensitivity of expected merger

synergies to my measure of employee morale. I perform cross-sectional regressions with cumulative abnormal returns as the dependent variable in Panel A and cross-sectional regressions with abnormal ROA as the dependent variable in Panel B.

First, I compare the effects of employee morale similarity for firms in capital-intensive industries and those in labor-intensive industries. To classify capital- or labor-intensive industries, I follow prior literature and define capital-intensive industries as those with SIC codes smaller than 5000 and define labor-intensive industries as those with SIC codes higher than or equal to 5000. I define a deal as capital- (labor-) intensive if the acquirer is from capital- (labor-) intensive industries. I run my analyses of short- and long-term merger synergies (as in Tables 3 and 4) for these subsamples. I report the results in Model (1) for capital-intensive industries and in Model (2) for labor-intensive industries in Panel A. In the main specification in Model (1) with CARs in the [-3, +3] event window, the coefficient on Morale_Sim is positive and statistically significant at the 1% level. Therefore, I find evidence that the effect of employee morale similarity will be greater in mergers with acquirers from capital-intensive industries. I find no evidence that abnormal ROA will be greater in mergers with acquirers either from capital-intensive or labor-intensive industries.

I also examine whether the effects of employee morale similarity are greater for deals in which acquirers and targets have greater operational overlap. I find evidence that mergers in which acquirers and targets are in the same industry require stronger employee morale fit. Within-industry mergers achieve greater short-term synergies. However, I don't find any evidence that cross-industry mergers achieve greater/lower short-term synergies or that within-industry and cross-industry mergers achieve greater/lower long-term synergies. Figure 3 shows the coefficients from cross-sectional regressions using the [-3, +3] event window for cumulative abnormal returns for capital- and labor-intensive industries and the abnormal ROA two years after the merger announcement date for acquirers in capital-intensive and labor-intensive industries and for within-industry and cross-industry mergers and abnormal ROA one and two years after and two and three years after for acquirers in capital-intensive and labor-intensive industries and for within-industry and cross-industry mergers.

Figure 4 highlights the results of the cross-sectional regressions from various merger outcome scenarios, and it presents insights into how employee morale similarity affects different aspects of merger performance. The plots highlight capital-intensive versus labor-intensive industries and

within-industry versus cross-industry mergers in CARs (top row) and abnormal ROA one and two years after (middle row) and abnormal ROA two and three years after (bottom row). The trends indicate how sustained the impacts of morale similarity are on CARs and abnormal ROA for capital- versus labor-intensive firms and for within- versus cross-industry mergers. The plots suggest that morale similarity may have varying impacts across different industry types (capital-intensive vs. labor-intensive industries). Morale similarity significantly affects CARs in capital-intensive industries, likely due to those industries' reliance on team coordination and efficiency. The plots also suggest that mergers within the same industry are more sensitive to morale similarity in a CAR setting, as the potential for synergies is typically higher because the two companies are likely to have overlapping business operations, similar processes, and aligned strategic goals. The market responds to this (both in capital-intensive and within-industry mergers) by reflecting these expectations in the CARs.

Overall, the results for Hypothesis H1 show that positive (negative) acquirer and target satisfaction positively (negatively) impacts merger success and outcomes. The matching of companies with high (low) morale leads to greater (lower) merger success.

H. Probability, Long-Term Synergies, and Duration of Deal Completion in Merger Groups

[Insert Table 9 here]

In this sub-section, I test the impact of high and low target morale on merger probability, long-term synergies, and duration of deal completion. I conjecture that high target morale leads to higher probability of merger announcement, long-term synergies, and duration of deal completion. To test this, I use the setup of Table 2 (probability of merger announcement), Table 4 (abnormal operating performance), Table 5 (labor restructurings), and Table 6 (duration of deal completion). Table 9 reports results of regressions with four groups of employee morale based on acquirer and target mean. Four groups based on acquirer and target mean of employee morale (more specifically, High_High_Mean signifies an indicator variable equal to one if the deal falls in the highest quartile of acquirer morale mean and in the highest quartile of target morale mean; High_Low_Mean signifies an indicator variable equal to one if the deal falls in the highest quartile of acquirer morale mean and in the lowest quartile of target morale mean; Low_High_Mean signifies an indicator variable equal to one if the deal falls in the lowest quartile of acquirer morale

mean and in the highest quartile of target morale mean; Low_Low_Mean signifies an indicator variable equal to one if the deal falls in the lowest quartile of acquirer morale mean and in the lowest quartile of target morale mean).

In Panel A, I document that companies in the highest quartiles of acquirer and target mean are likely to merge (the coefficient on High_High_Mean is positive and statistically significant at the 1% level), while acquirers in the highest quartile of acquirer mean and lowest quartile of target mean are not likely to merge (the coefficient on High_Low_Mean is negative and statistically signifcant at the 1% level). The coefficients on Low_High_Mean and Low_Low_Mean are both positive but not statistically significant. The results suggest that acquirers with high morale seek out targets with high morale, while also that acquirers with low morale seek out targets with high morale. It is unlikely that acquirers with high morale will seek out and merge with targets with low morale. I further explore the synergies that those groups achieve following the merger.

The main independent variables of interest in Panel B of the table remain High_High_Mean, High_Low_Mean, Low_High_Mean, and Low_Low_Mean and the main dependent variable is abnormal ROA one and two years after the merger announcement. I provide evidence that in cases in which a high morale acquirer merges with a low morale target, the coefficient on abnormal ROA one and two years after the merger announcement date is negative. The results hold with abnormal ROA two and three years after the merger announcement date. This could point to target employees' low morale having a negative impact on acquirer employees' high morale. Panel B suggests that as High_Low_Mean increases by one standard deviation, there is a negative effect on abnormal ROA in the years following the merger, resulting in a decrease of approximately 1.22%. I examine two channels through which target morale could transmit to acquirer morale – either through the target's management or through target employees and acquiring employees with similar employment history. The impact of the three other groupings on abnormal ROA two and three years after the merger is not statistically significant, and, therefore, there is no statistical effect evident in the results.

In Panel C, the main independent variables of interest in Panel B of the table remain High_High_Mean, High_Low_Mean, Low_High_Mean, and Low_Low_Mean and the main dependent variable is labor restructurings one through three years after the merger announcement date. I document that in cases in which a high morale acquirer merges with a high morale target,

the coefficient on labor restructurings one through three years after the merger is negative and statistically significant at the 5% level. As High_High_Mean increases by one standard deviation, there is a significant negative impact on labor restructurings post-merger, with a decrease of approximately 21.75%. This indicates a substantial reduction in employment adjustments after the merger when High_High_Mean increases. This suggests that mergers with acquirers and targets with high morale are associated with negative changes in employment. The impact of the three other groupings on labor restructurings after the merger is not statistically significant, and, therefore, there is no statistical effect evident in the results.

When examining the results in Panel D of the table, I conclude that deals, in which both the acquirer and the target have a high mean of employee morale, are positively associated with a more rapid rate of deal completion. The result also holds when controlling for dissimilarity in Table A3, Panel C in the Appendix. The results in Panel C suggest that deals with high acquirer and target morale have the most successful integration after the merger announcement. The results in all panels of the table hold when controlling for employee morale similarity (results are presented in the Appendix). Overall, the results in Table 9 suggest that high morale target companies are an asset for the acquiring company (which is consistent with Hypothesis H2). Target companies with high morale enhance the operating performance of low morale acquiring companies. In further tests, I explore the channel through which high (low) target morale impacts merger success and outcomes. I show the impact of emotional (morale) contagion on merger outcomes to reinforce that high (low) morale of target companies enhances (damages) morale and performance of acquiring companies.

I. Mean and Dispersion of Rating Categories and Probability of Merger

[Insert Table 10 here]

After documenting that high target morale leads to higher post-merger performance and integration, I test what target morale's attributes acquiring companies value. I conjecture that acquiring companies value the morale of target employees and that they bid for companies with high morale on the aggregate and as observed by various morale attributes. To test this, I use equation (2) for probability of merger announcement relative to a pseudo-matched sample with the following main independent variables of interest – target's mean and standard deviation of career opportunities, compensation benefits, culture values, senior leadership, work-life balance, and

overall rating (CO_Mean_T, CB_Mean_T, CV_Mean_T, SL_Mean_T, WL_Mean_T, and OR_Mean_T for mean values, respectively, and CO_SD_T, CB_SD_T, CV_SD_T, SL_SD_T, WL_SD_T, and OR_SD_T for standard deviation values, respectively). Table 10 provides additional insight on the employee morale characteristics of the target companies acquirers go after. Panel A presents results of logit regressions with target ratings one year before merger announcement, while Panel B presents results of logit regressions with target ratings one month before merger announcement. I also provide additional insight on the employee morale dimensions of acquiring companies (in Table A2 in the Appendix).

The results in Panel A of Table A2 suggest that mean of acquirer career opportunities (CO_Mean_Acq) and work-life balance (WL_Mean_Acq) one year before merger announcement are positively associated with merger probability, while mean of acquirer compensation benefits, culture values, senior leadership, and overall rating are negatively associated with merger probability. The results in Panel A of Table 10 suggest that mean of target career opportunities, compensation benefits, culture values, senior leadership, work-life balance, and overall rating one year before merger announcement are positively associated with merger probability (the coefficients for all different means are positive and statistically significant at the 5% and 10% levels), while dispersion of career opportunities, compensation benefits, culture values, senior leadership, work-life balance, and overall rating are negatively associated with merger probability (the coefficients for all standard deviations are negative but not statistically significant). The results give implications about the different dimensions of morale acquiring and target companies possess. More specifically, acquiring companies with high variability in individual dimensions of employee morale and high mean of career opportunities and work-life balance but low mean of compensation benefits, culture values, senior leadership, and overall rating are most likely to participate in M&A deals, while acquiring companies go after targets with high mean of all dimensions of employee morale and low variability of all dimensions of employee morale. This points to acquiring companies valuing the employee morale profile of the target companies they acquire and that they go after target companies with high mean of individual employee morale dimensions and low variability of individual employee morale dimensions.

Panel B of Table A2 and Panel B of Table 10 give some insight into how different acquirer and target employee morale dimensions one month before merger announcement are associated with the probability of merger. The results in Panel B of Table A2 suggest that mean of acquirer

career opportunities and work-life balance one year before merger announcement are positively associated with merger probability, while mean of acquirer career opportunities and work-life balance one month before merger announcement are negatively associated with merger probability. The most notable results are for acquirer employees' perceptions of career opportunities and work-life balance (the coefficient on work-life balance mean is negative and statistically significant at the 1% level, while the coefficient on work-life balance standard deviation is positive and statistically significant at the 1% level, and the coefficient on career opportunities standard deviation is positive and statistically significant at the 1% level). Relative to a pseudo-matched sample, employees working in companies, participating in M&A deals, experience lower averages of perceptions of work-life balance and career opportunities as the merger nears. The results in Panel B of Table 10 suggest that mean of target career opportunities, compensation benefits, culture values, senior leadership, and overall rating one month before merger announcement are positively associated with merger probability. Volatility in dimensions, such as career opportunities and work-life balance, becomes positively associated with merger probability as the merger nears (coefficients on CO_SD_T and WL_SD_T are negative and statistically significant at the 5% and 1% levels, respectively), which is consistent with the findings for acquiring companies. Results for acquiring companies are presented in Table A2 in the Appendix. The findings in this sub-section are related to the argument that acquirer and target employees possibly have busier schedules right before a merger takes place which is translated into acquirer employees' negative work-life balance and career opportunities perceptions and into target employees' negative work-life balance perceptions.

Considering the results in these two tables, employee morale in terms of all those different dimensions is an important aspect for the smooth integration between acquirer and target employees post the M&A deal and merging companies' acquirer and target employees show more negative perceptions of morale dimensions, such as work-life balance and career opportunities, as the merger nears. The results in the table are consistent with Hypothesis H2.

J. Post-Merger Morale

[Insert Table 11 here]

[Insert Figure 5 here]

In this sub-section, I establish the relation between pre-merger morale and post-merger morale. I conjecture that the high morale of target employees improves the morale of acquiring companies. To test this, I perform various tests. Table 11 presents the results of a fixed effects panel regression estimating the relationship between target firm morale and acquirer firm morale. The dependent variable is the average Glassdoor rating of acquiring firms, while the key independent variables include target firm morale (Mean_T), its squared term (Mean_T_Squared), and event-time dummies capturing the years before and after the merger. The analysis is based on 4,072 acquirer company reviews and 2,087 target company reviews for the full sample, 1,736 acquirer company reviews and 854 target company reviews for the management sample, and 2,559 acquirer company reviews and 1,985 target company reviews for the rank-and-file employee sample. The results indicate that target morale has a weak and nonlinear effect on acquirer morale. The squared term is negative and marginally significant in the full sample and rank-and-file sample, suggesting that the impact of target morale diminishes at higher levels. Pre-merger coefficients for years t-2 and t-1 are not statistically significant, reinforcing the parallel trends assumption. Post-merger, morale remains unchanged in the first two years, with statistically significant increases emerging in years t+3 and t+4, particularly in the full sample with the result coming among from rank-and-file employees. These findings suggest that the morale effects of mergers materialize gradually rather than immediately, and that lower-level employees may benefit more than management from the integration process.

The event study plot in Figure 5 illustrates the effect of target firm morale on acquirer morale over time, relative to the merger event (year t=0). The x-axis represents the years surrounding the merger, while the y-axis shows the estimated impact on acquirer morale. The figure suggests that acquirer morale does not experience an immediate post-merger shift, as coefficients for years t+1 and t+2 are statistically insignificant. However, a positive and significant effect emerges in year t+3, with an even stronger increase in year t+4. This delayed impact is particularly evident among rank-and-file employees, whereas management morale does not show a significant post-merger change. The figure also provides evidence supporting the parallel trends assumption, as pre-merger coefficients for years t-2 and t-1 are insignificant, indicating that acquirer morale was not trending significantly before the event. Overall, the event study reveals that while the immediate effects of target morale on acquirer morale are insignificant, the positive impact becomes more pronounced over time.

[Insert Table 12 here]

In Table 12, I determine whether the market reaction around the merger, which signifies merger success, has an impact on the post-merger acquirer morale. In prior tables, I have already shown that the market reacts more negatively to deals in which acquirer and target employees exhibit greater differences in perceptions of companies' dynamics. Now, I ask an additional question about if the success of the merger plays a role in the acquirer employee morale one year after the merger. I find that the market reaction in the seven days around the merger announcement has no effect on the merged company acquirer morale one year after the merger transaction. Figure 6 plots a histogram of predicted values from regressions in Models (1), (2), and (3) in Table 12.

[Insert Figure 7 here]

Figure 7 presents a test for discontinuity in the distribution of the difference in employee morale from the year of the merger announcement to the year after, based on the difference between the acquirer's and target's employee morale in the year before the merger. The plot suggests a nonlinear, but continuous relationship rather than a sharp discontinuity at zero. Contrary to the expectation of a clear jump at the cutoff ($x = 0$), the figure instead shows a gradual decline in post-merger acquirer morale changes as the pre-merger morale difference approaches zero. This suggests that when the acquirer and target morale are closely aligned before the merger, the post-merger change in acquirer morale is minimal. However, when the target's morale is substantially higher than the acquirer's (negative X values), there is a notable increase in post-merger acquirer morale, consistent with the idea that higher target morale contributes to improving acquirer morale.

The figure also highlights an asymmetry – larger positive changes in acquirer morale occur when target morale is initially higher than acquirer morale (when $x < 0$). This finding aligns with the hypothesis that high target morale is contagious and can uplift acquirer morale. However, there is no strong evidence that negative morale from the target is transmitted to the acquirer in cases where the acquirer has initially higher morale. Overall, the results for Hypothesis H2 suggest that positive target morale positively influences acquirer morale, particularly when the target's morale is higher before the merger. This supports the idea that target employees' morale plays a significant role in shaping post-merger acquirer morale, but the relationship appears gradual rather than a sharp discontinuity at $x = 0$.

K. Endogeneity

To address omitted variable bias, I verify the results with the inclusion of industry and year fixed effects and the inclusion of acquirer and target firm characteristics as control variables and merged firm characteristics as control variables. I will also add as controls geographical distance, cultural similarity, and product market similarity. To address selection bias, or selection to participate in M&A deals due to employee morale similarity, mean, or dispersion, I use a matching approach to identify counterfactual pseudo deals and estimate logistic regressions on a matched sample to estimate the probability of participation in M&A activity and acknowledge that the results in those regressions are consistent with regressions examining the impact of employee morale similarity on merger outcomes. The results also hold and are robust to and when including the Inverse Mills ratio (generated from a Heckman two-stage model with the matched sample and uncompleted deal sample from probability regressions) in regressions with CARs. The results in Table 3 are robust to the inclusion of the Inverse Mills ratio, though its coefficient in all specifications, is not statistically significant (Table A8 in the Appendix). Therefore, selection bias is not an issue in this case. To address reverse causality, I also test the impact of short-term market reaction on post-merged acquiring company morale and find no effect. This suggests that short-term merger success doesn't affect post-merger acquiring company morale.

[Insert Table 13 here]

Table 13 presents the results of a 2SLS regression using weather (difference between the average temperatures at the acquirer's and target's headquarters over the ten days prior to the deal announcement date) as an instrumental variable (IV) for employee morale similarity, with subsequent regressions on merger outcomes. The first stage, represented by the first column, focuses on whether the instrument, the difference between the average temperatures at the acquirer's and target's headquarters over the ten days prior to the deal announcement date, significantly predicts the endogenous variable – employee morale similarity. The findings suggest that the weather instrument does not strongly predict employee morale similarity in this setting. Labor restructurings show the strongest and most significant relationship with employee morale similarity. This implies that when the acquirer and target have similar employee morale profiles, there are substantial changes in employment post-merger, possibly reflecting adjustments in workforce alignment or restructuring to enhance post-merger integration. The instrumental

variable (weather) used in the first stage regression did not strongly predict morale similarity, which could affect the reliability of the 2SLS estimates. I could further explore more sophisticated techniques to measure weather, such as machine learning models to measure morale as a function of weather metrics or a temporal discontinuity design utilizing extreme weather events.

V. Conclusion

The paper provides insight into the impact employee morale similarity has on post-merger value, performance, integration, and morale, and on the way target employees' morale is contagious for acquirer employees' morale and its impact on merger success. The paper documents that firms with similar employee morale are more likely to merge, achieve greater return and greater operating performance synergies, including higher announcement returns and higher abnormal profitability, perform greater labor restructurings following the merger, and achieve greater speed of completion and have higher likelihood of completion. Deals in which firms possess similar employee morale work best with each other, while deals in which firms possess dissimilar employee morale don't work together as well.

The paper also sheds light on the question whether target employees with high morale are an asset to the acquiring company. I first examine the employee morale characteristics of target employees that acquirers go after. I document that acquirers go after target companies with high morale. Target employees with high morale take less time to be integrated into the acquiring company in deals in which acquiring companies have high employee morale. These two latter findings point to acquiring companies valuing the employee morale of the target companies they seek out and merge with, as similar and high morale would lead to better and easier post-merger integration. Additionally, I document a similar pattern in acquiring and target employees' perceptions as the merger deal announcement nears. The employees' work-life balance and career opportunities perceptions become negative in anticipation of the merger. An upcoming merger can be stressful for both acquirer and target employees, which is reflected in their perceptions of work-life balance and career opportunities.

I provide evidence that post-merger acquirer morale is impacted in the cases when a high employee morale acquirer acquires a low employee morale target and, in the cases, when a low employee morale acquirer acquires a high employee morale target. A low employee morale target

pulls down the high employee morale of the acquiring company, while the high employee morale target pulls up the low employee morale of the acquiring company, though the effect disappears with time. This impact of high targets' employee morale is significant for acquiring companies' performance in the long term, but not in the short term. The high morale of target employees enhances the low morale of acquiring companies.

Overall, I document that positive (negative) acquirer and target satisfaction positively (negatively) impacts merger success and outcomes. The matching of companies with high (low) morale leads to greater (lower) merger success. I also conjecture that positive target employees' morale spreads to negative acquirer employees' morale. I document that positive target satisfaction positively impacts negative acquirer satisfaction which leads to greater merger success. The findings point to target employees' morale being contagious for acquiring employees, consequently impacting merger success. The paper adds onto the corporate takeover literature by providing a direct way to measure the attitudes and opinions of employees, their impact on merger outcomes, the informational value of those attitudes and opinions, and the impact of pre-merger employee morale on post-merger morale and performance.

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Table 1: Summary Statistics

Table 1 reports summary statistics for the sample. Panel A provides summary statistics of acquirers and targets in the actual deal sample; Panel B provides additional statistics of the merged sample; Panel C provides statistics on acquirer and target mean and dispersion of ratings in the Glassdoor data. All definitions of the respective variables and their calculations are provided in the Online Appendix.

Panel A. Acquirer and Target Characteristics

Stats	N	Mean	SD	p25	p50	p75
Assets_Acq	255	30105.34	71832.64	890.9945	5548.913	29516.54
BTM_Acq	255	0.527735	0.292731	0.326180	0.533027	0.735964
ROA_Acq	255	0.108510	0.113101	0.065521	0.120768	0.161153
Sale_Growth_Acq	255	1.444045	7.199928	0.954540	1.053679	1.156878
Cash_Acq	255	0.158727	0.179145	0.023459	0.101478	0.214843
Book_Leverage_Acq	255	0.249798	0.204771	0.075102	0.235979	0.366827
RDA_Acq	255	0.045901	0.084173	0	0.004359	0.060342
Assets_T	255	7327.572	70300.59	58.55150	425.6360	1936.297
BTM_T	255	0.539465	0.408771	0.213764	0.545964	0.798141
ROA_T	255	-0.00860	0.280772	0	0.038332	0.111348
Sale_Growth_T	255	0.904435	0.698784	0.643302	1.007868	1.196888
Cash_T	255	0.232941	0.265528	0.016278	0.117781	0.386673
Book_Leverage_T	255	0.201205	0.239273	0	0.127503	0.347571
RDA_T	255	0.091345	0.202148	0	0	0.123172

Panel B. Deal Characteristics

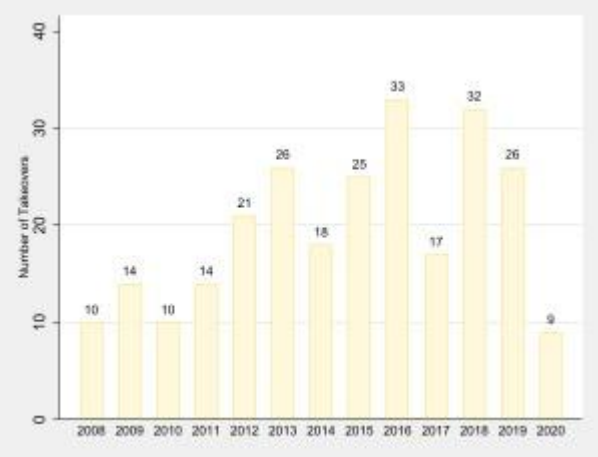
Stats	N	Mean	SD	p25	p50	p75
BTM	255	0.581068	0.253089	0.394119	0.569988	0.758039
Book_Leverage	255	0.268463	0.190223	0.143990	0.245417	0.382942
Cash	255	0.187411	0.187576	0.045420	0.121949	0.253750
Relative_Size	255	2.456898	34.19204	0.024150	0.126045	0.403030
Size	255	8.658108	2.346823	7.141077	8.838848	10.37263
Same_Industry	255	0.808594	0.394179	1	1	1
High_Tech	255	0.214844	0.411518	0	0	0
All_Cash	255	0.542969	0.499126	0	1	1
Tender_Offer	255	0.230469	0.421958	0	0	0
Morale_Sim	255	0.693915	0.290573	0.479823	0.788046	0.964836
Sim_Pros	255	0.592060	1.055378	0	0.457606	0.889264
Sim_Cons	255	0.567840	1.016329	0	0.361684	0.878616
Sim_Feedback	255	0.322559	0.891123	0	0	0.408661

Panel C. Acquirer and Target Mean and Variability Statistics

Stats	N	Mean	SD	p25	p50	p75
Mean_Acq	255	13.89851	7.751996	4.000000	16.33631	19.49591
SD_Acq	255	0.771494	0.548705	0.274408	0.528230	1.267195
Mean_T	227	11.36248	7.420108	4.000000	12.44444	17.49593
SD_T	227	1.116372	0.577316	0.535935	1.224745	1.591736
CO_Mean_Acq	223	3.034605	0.611149	2.647059	3.072549	3.351852
CB_Mean_Acq	223	3.413339	0.627450	3.000000	3.440476	3.856061
CV_Mean_Acq	173	3.225509	0.683361	2.790323	3.200000	3.640600
WL_Mean_Acq	223	3.308291	0.589609	2.931818	3.365854	3.698113
SL_Mean_Acq	223	2.879444	0.685902	2.452381	2.850000	3.180698
OR_Mean_Acq	224	3.241881	0.630765	2.904762	3.260052	3.620105
CO_Mean_T	189	2.921273	0.807868	2.441860	3.000000	3.375000
CB_Mean_T	189	3.370968	0.775876	3.000000	3.421191	3.818182
CV_Mean_T	149	3.122556	0.917414	2.571429	3.055556	3.750000
WL_Mean_T	189	3.316861	0.816523	2.764706	3.333333	4.000000
SL_Mean_T	189	2.743138	0.890625	2.187500	2.800000	3.333333
OR_Mean_T	190	3.098795	0.890667	2.537037	3.077677	3.666667
Mean_Acq_Individual	47,616	3.364780	1.076504	2.666667	3.500000	4.166667
Mean_T_Individual	7,523	3.298538	1.144266	2.500000	3.333333	4.166667
Pros_Acq_Individual	24,132	NA	NA	NA	NA	NA
Cons_Acq_Individual	24,127	NA	NA	NA	NA	NA
Feedback_Acq_Individual	13,250	NA	NA	NA	NA	NA
Pros_T_Individual	6,032	NA	NA	NA	NA	NA
Cons_T_Individual	6,027	NA	NA	NA	NA	NA
Feedback_T_Individual	3,490	NA	NA	NA	NA	NA
Mean_Acq_FullSample	4,072	3.194906	.5829823	2.848086	3.200000	3.553274
Mean_T_FullSample	2,087	3.206788	1.145987	2.333333	3.300000	4.000000
Mean_T_Sq_FullSample	2,087	11.59615	7.244631	5.444444	10.89000	16.00000
Mean_Acq_Management	1,736	3.225429	.7412943	2.811681	3.229312	3.686887
Mean_T_Management	854	3.249127	.9457220	2.666667	3.250000	3.937500
Mean_T_Sq_Management	854	11.45017	6.088382	7.111112	10.56250	15.50391
Mean_Acq_RankFile	2,559	3.193792	.5908688	2.845081	3.200000	3.555556
Mean_T_RankFile	1,985	3.200973	.8100183	2.688095	3.193182	3.766667
Mean_T_Sq_RankFile	1,985	10.90202	5.218089	7.225856	10.19641	14.18778

Figure 1: Number of Deals and Deal Value per Year

Figure 1 presents the distribution of number of deals per year (left) and the average deal value per year in millions as presented in SDC (right) over the paper sample for corporate takeover deals from 2008 through 2020.



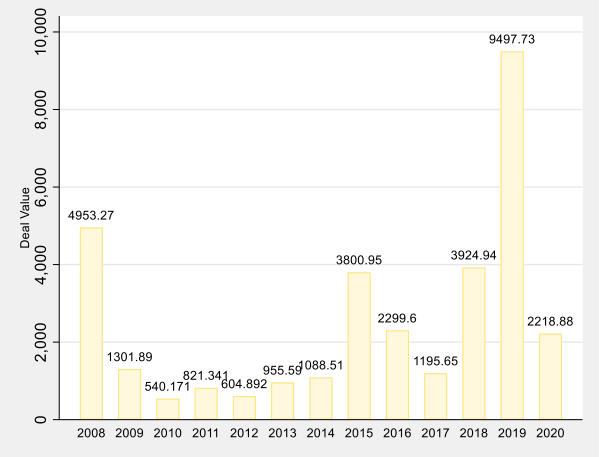


Figure 2: Employee Morale Similarity Distribution

Figure 2 presents a histogram that displays the distribution of employee morale similarity cosine similarity (cosine similarity values). The height of each bar corresponds to the number of occurrences of cosine similarity values within the range that bar represents.

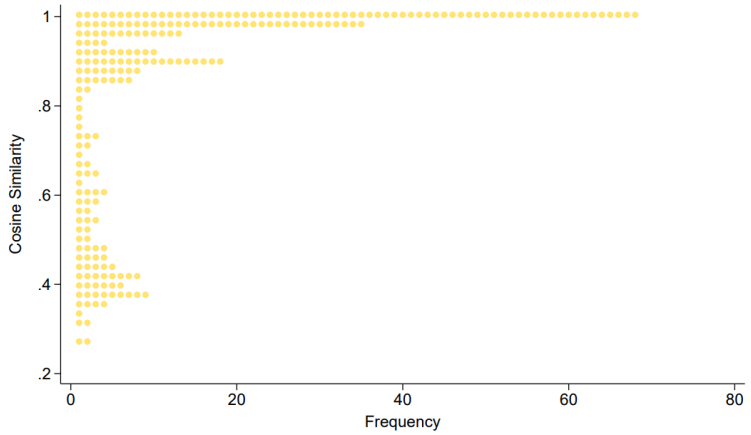


Table 2: Probability of a Merger One Year Before

Table 2 reports the results from conditional logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the employee morale similarity of the acquirer-target pair and other control variables. The dependent variable is a binary variable that takes the value of one if the observation is an actual merger deal. This variable takes the value of zero if the observation is a pseudo firm-pair in the control group. I follow Bena and Li (2014) to pair each actual acquirer with a pseudo target based on the actual target's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual target firm) and to pair each actual target with a pseudo acquirer based on the actual acquirer's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual acquirer firm). The sample period is from 2008 to 2020. The acquirer and target controls are BTM, ROA, Book_Leverage, Sale_Growth, Cash, and RDA. Constant terms are reported. *T*-statistics are reported in parentheses. All results hold with and without deal fixed effects (the tables report results without deal fixed effects). In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Industry-Size-BTM Match				
	(1)	(2)	(3)	(4)	(5)
Morale_Sim	**2.593*** **				**2.480*** **
	(0.388)				**(0.528)**
Mean_Acq		**0.0809*** **		**0.0414***	-0.0123
		(0.0199)		**(0.0231)**	(0.0271)
SD_Acq		**-0.0888*** **		0.0114	**-0.0774** **
		(0.0203)		(0.0359)	**(0.0391)**
Mean_T			**0.149*** **	**0.139*** **	**0.0921*** **
			(0.0238)	**(0.0321)**	**(0.0324)**
SD_T			**0.164** **	**0.171** **	0.127
			(0.0768)	**(0.0821)**	(0.0846)
Acquirer Controls					
ROA_Acq	-1.477	-1.059	0.560	0.476	-0.312
	(2.502)	(2.169)	(2.091)	(2.168)	(2.299)
Sale_Growth_Acq	0.726**	0.606*	0.825**	0.903**	0.865**
	(0.350)	(0.359)	(0.349)	(0.369)	(0.360)
Cash_Acq	3.096*	3.122*	3.212**	3.501**	3.601**
	(1.719)	(1.619)	(1.625)	(1.670)	(1.687)
Book_Leverage_Acq	2.072**	2.151**	2.136**	2.329**	1.972**
	(0.932)	(0.907)	(0.888)	(0.920)	(0.923)
RDA_Acq	-8.399	-8.442	-4.030	-5.659	-6.641
	(7.636)	(6.638)	(6.657)	(7.018)	(7.236)
BTM_Acq	-0.0679	0.0631	-0.346	-0.417	-0.231
	(1.372)	(1.305)	(1.307)	(1.329)	(1.332)
Target Controls					
ROA_T	-1.003	-1.720	-1.869	-1.979	-1.287
	(1.361)	(1.406)	(1.489)	(1.502)	(1.536)
Sale_Growth_T	0.438	0.103	0.353	0.329	0.317
	(0.301)	(0.294)	(0.358)	(0.351)	(0.405)
Cash_T	0.589	0.400	0.480	0.467	0.865
	(1.045)	(1.062)	(1.148)	(1.152)	(1.213)
Book_Leverage_T	1.096	0.534	0.758	0.776	1.292
	(0.670)	(0.685)	(0.767)	(0.782)	(0.826)
RDA_T	-0.516	-1.851	-2.116	-2.283	-1.362
	(2.022)	(1.996)	(2.124)	(2.130)	(2.200)
BTM_T	-1.311	-6.569	-9.840	-10.32	-10.83
	(6.145)	(6.512)	(6.468)	(6.726)	(7.018)
Observations	765	765	765	765	765

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Value-Weighted CARs in [-3, +3] Event Window

Table 3 reports Cumulative Abnormal Returns (CARs) around merger announcement for the 255 actual deals in the sample. The dependent variable is CAR, the 7-day cumulative abnormal announcement return for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The sample period is from 2008 to 2020. The table estimates OLS regressions with CARs as the dependent variable and Morale_Sim, High_Morale_Sim, and Low_Morale_Sim as the main independent variables. BTM, Book_Leverage, Cash, and Size are calculated as the (market) value-weighted average of acquirer's and target's values. Other control variables include product similarity and cultural similarity between the acquirer and the target. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. CARs in [-3, +3] Event Window

	CARs of Combined Acquirer and Target Portfolio in the [-3, +3] Event Window			
	(1)	(2)	(3)	(4)
Morale_Sim	**0.0166****			
	(0.00805)			
High_Morale_Sim		0.00499		0.00712
		(0.00589)		(0.00597)
Low_Morale_Sim			**-0.0130***	**-0.0147***
			(0.00771)	**(0.00784)**
Same_Industry	0.0145**	0.0139**	0.0147**	0.0149**
	(0.00598)	(0.00602)	(0.00602)	(0.00601)
Same_State	0.00213	0.00270	0.00286	0.00382
	(0.00475)	(0.00483)	(0.00478)	(0.00484)
High_Tech	0.000845	0.000929	0.000635	0.000530
	(0.00631)	(0.00635)	(0.00633)	(0.00632)
Relative_Size	-1.59e-05	-1.47e-05	-1.51e-05	-1.65e-05
	(6.78e-05)	(6.83e-05)	(6.80e-05)	(6.80e-05)
All_Cash	0.0113**	0.0111**	0.0110**	0.0110**
	(0.00509)	(0.00512)	(0.00510)	(0.00510)
Tender_Offer	-0.00641	-0.00498	-0.00627	-0.00582
	(0.00624)	(0.00628)	(0.00626)	(0.00626)
BTM	0.00182	-0.00144	-0.000635	-0.00167
	(0.0102)	(0.0102)	(0.0101)	(0.0102)
Book_Leverage	0.00797	0.00919	0.00856	0.00873
	(0.0139)	(0.0139)	(0.0139)	(0.0139)
Cash	-0.00874	-0.00764	-0.00775	-0.0101
	(0.0153)	(0.0155)	(0.0153)	(0.0155)
Size	-0.000121	0.000243	9.10e-05	5.10e-05
	(0.00111)	(0.00110)	(0.00110)	(0.00110)
Cultural_Sim	-0.0145	-0.00988	-0.0126	-0.0129
	(0.0208)	(0.0209)	(0.0208)	(0.0208)
Product_Sim	-0.000545	-0.000746	-0.000636	-0.000347
	(0.000331)	(0.000333)	(0.000332)	(0.000332)
Constant	-0.0313**	-0.0194	-0.0183	-0.0162
	(0.0136)	(0.0128)	(0.0127)	(0.0128)
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.055	0.044	0.052	0.058

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. CARs in Alternative Event Windows

	CARs		
	[-1, +1] Event Window	**[-3, +3] Event Window**	**[-5, +5] Event Window**
Morale_Sim	**0.0121***	**0.0166****	**0.0210****
	(0.00689)	**(0.00805)**	**(0.00872)**
Constant	-0.0241**	-0.0313**	-0.0343**
	(0.0116)	(0.0136)	(0.0147)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.055	0.058	0.076

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Abnormal Operating Performance

Table 4 reports the results of OLS regressions explaining industry-adjusted (abnormal) post-merger operating performance. Operating performance is defined as EBITDA scaled by the market value of assets at the beginning of the year, and abnormal operating performance is calculated as the operating performance (defined above) minus the median operating performance of the companies in the corresponding acquirer's SIC industry. The sample period is from 2008 to 2020. In Table 4, I estimate OLS regressions with abnormal ROA for Years 1 and 2 combined and for Years 2 and 3 combined as the dependent variable with employee morale similarity and groups and other control variables as independent variables. BTM, Book_Leverage, Cash, and Size are calculated as the market value-weighted average of acquirer's and target's values. Other control variables include product similarity and cultural similarity between the acquirer and the target. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Abnormal ROA Years 1-2 ((1) & (2)) After and Years 2-3 ((3) & (4)) After			
	(1)	(2)	(3)	(4)
Morale_Sim	0.0170		0.00550	
	(0.0225)		(0.0226)	
High_Morale_Sim		0.000152		0.00228
		(0.0167)		(0.0167)
Low_Morale_Sim		-0.0118		-0.00470
		(0.0219)		(0.0220)
Same_Industry	-0.0185	-0.0184	-0.0111	-0.0110
	(0.0167)	(0.0168)	(0.0168)	(0.0169)
Same_State	-0.00512	-0.00443	-0.0107	-0.0101
	(0.0132)	(0.0135)	(0.0133)	(0.0136)
High_Tech	0.0311*	0.0309*	0.0312*	0.0311*
	(0.0176)	(0.0177)	(0.0177)	(0.0177)
Relative_Size	4.35e-05	4.45e-05	-5.14e-05	-5.16e-05
	(0.000189)	(0.000190)	(0.000190)	(0.000191)
All_Cash	0.00176	0.00147	0.00369	0.00359
	(0.0142)	(0.0142)	(0.0143)	(0.0143)
Tender_Offer	-0.0363**	-0.0360**	-0.0396**	-0.0394**
	(0.0174)	(0.0175)	(0.0175)	(0.0176)
BTM	0.0423	0.00228	0.0343	0.00162
	(0.0284)	(0.00307)	(0.0286)	(0.00308)
Book_Leverage	0.0328	0.0397	0.0308	0.0332
	(0.0386)	(0.0284)	(0.0389)	(0.0285)
Cash	-0.139***	0.0335	-0.123***	0.0310
	(0.0428)	(0.0387)	(0.0430)	(0.0389)
Size	0.00204	-0.137***	0.00156	-0.123***
	(0.00309)	(0.0432)	(0.00311)	(0.0434)
Cultural_Sim	0.0585	0.0608	0.0461	0.0466
	(0.0581)	(0.0581)	(0.0585)	(0.0584)
Product_Sim	-0.00323***	-0.00324***	-0.00227**	-0.00226**
	(0.000923)	(0.000927)	(0.000928)	(0.000932)
Constant	0.0196	0.0326	0.0253	0.0302
	(0.0379)	(0.0358)	(0.0382)	(0.0359)
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.238	0.237	0.183	0.616

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Labor Restructurings Following Merger

Table 5 reports the results of OLS regressions explaining labor restructurings. Specifically, labor restructuring is calculated as the percentage change of employment one and six years after the deal announcement relative to the average employment of acquirer and target at the year of the merger announcement. After that, I take the natural logarithm of labor restructurings for Years 1 through 3 and for Years 4 through 6. The sample period is from 2008 to 2020. In Table 5, I estimate OLS regressions with labor restructurings for the above-mentioned years after merger announcement as the dependent variable with employee morale similarity and high and low morale similarity and other control variables as independent variables. BTM, Book_Leverage, Cash, and Size are calculated as the market value-weighted average of acquirer's and target's values. Other control variables include product similarity and cultural similarity between the acquirer and the target. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Labor Restructurings Years 1-3 ((1) & (2)) After and Years 4-6 ((3) & (4)) After			
	(1)	(2)	(3)	(4)
Morale_Sim	**0.715****		**1.223*****	
	(0.335)		**(0.397)**	
High_Morale_Sim		0.347		0.131
		(0.241)		(0.336)
Low_Morale_Sim		**-0.866*****		**-1.212*****
		(0.313)		**(0.383)**
Same_Industry	-0.296	-0.296	-0.207	-0.191
	(0.243)	(0.242)	(0.282)	(0.284)
Same_State	-0.240	-0.170	-0.0154	0.0251
	(0.192)	(0.193)	(0.233)	(0.234)
High_Tech	-0.389	-0.409	-0.414	-0.443
	(0.250)	(0.249)	(0.314)	(0.315)
Relative_Size	-0.544***	-0.558***	0.107	0.204
	(0.151)	(0.150)	(0.329)	(0.331)
All_Cash	0.394*	0.366*	0.526*	0.534*
	(0.208)	(0.207)	(0.270)	(0.271)
Tender_Offer	-0.116	-0.102	-0.140	-0.188
	(0.261)	(0.259)	(0.326)	(0.328)
BTM	-0.277	-0.471	-1.032*	-1.274**
	(0.455)	(0.453)	(0.602)	(0.600)
Book_Leverage	-1.662***	-1.574**	-2.104***	-1.936***
	(0.629)	(0.622)	(0.713)	(0.712)
Cash	-0.818	-0.833	-1.172	-1.016
	(0.730)	(0.724)	(0.868)	(0.868)
Size	0.613***	0.616***	0.642***	0.648***
	(0.0532)	(0.0528)	(0.0624)	(0.0621)
Cultural_Sim	-1.802*	-1.883**	-1.757	-1.635
	(0.949)	(0.943)	(1.271)	(1.271)
Product_Sim	-0.0288*	-0.0271*	-0.0236	-0.0358
	(0.0162)	(0.0162)	(0.0299)	(0.0308)
Constant	-2.419***	-1.663***	-2.787***	-1.748**
	(0.656)	(0.625)	(0.727)	(0.743)
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.581	0.590	0.645	0.647

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Duration and Likelihood of Deal Completion

Table 6 reports the duration of deal completion. In Panel A, I report the results from a Cox Hazard model with similarity, mean, and standard deviation of ratings; in Panel B, I report the results from a likelihood completion regression with similarity, aggregated mean and standard deviation. All the models in Panel A report the hazard ratios for deal completion time, estimated using a Cox proportional hazard model. The dependent variable in all those models is the number of days between the announcement date and the effective date of a deal measured for completed deals. In the models of Panel B, I perform a probit regression for the likelihood of deal completion relative to a sample of uncompleted deals from 2008 to 2020. Acquirer and target controls include RDA, BTM, Cash, Book_Leverage, and Sale_Growth. All variables are defined in Appendix 1. *T*-statistics are reported in parentheses. *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Cox Hazard with Similarity, Mean and Standard Deviation

	Cox Hazard for Deal Completion Time							
Main Effects								
Morale_Sim	0.72	(1.5)					0.976	(1.4)
Mean_Acq			**0.0480****	**(2.94)**			0.0195	(0.82)
SD_Acq			**-0.137*****	**(5.21)**			**-0.127*****	**(3.56)**
Mean_T					**0.0964*****	**(5.08)**	0.0306	(1.08)
SD_T					0.0299	(0.45)	0.0452	(0.69)
Controls								
ROA_Acq	-1.095	(0.64)	-0.997	(0.56)	-0.663	(0.36)	-1.313	(0.70)
Sale_Growth_Acq	-0.0189	(0.05)	0.106	(0.27)	-0.0771	(0.18)	0.164	(0.4)
Cash_Acq	1.399	(1.32)	1.583	(1.52)	0.948	(0.87)	1.477	(1.38)
Book_Leverage_Acq	-0.574	(1.03)	-0.941	(1.60)	-0.899	(1.49)	-0.842	(1.41)
RDA_Acq	-0.073	(0.02)	0.925	(0.24)	2.513	(0.59)	1.358	(0.34)
BTM_Acq	0.2	(0.36)	0.228	(0.43)	0.291	(0.49)	0.394	(0.71)
ROA_T	-1.898	(1.80)	-1.624	(1.64)	-1.595	(1.60)	-1.328	(1.29)
Sale_Growth_T	0.0422	(0.12)	0.0416	(0.12)	0.0486	(0.13)	-0.0423	(0.12)
Cash_T	-1.409	(1.45)	-0.918	(0.97)	-0.632	(0.63)	-0.987	(1.00)
Book_Leverage_T	0.931	(1.76)	1.563**	(2.63)	1.220*	(2.11)	1.571*	(2.57)
RDA_T	0.66	(0.25)	-1.41	(0.50)	-0.924	(0.31)	-0.144	(0.05)
BTM_T	-0.174	(0.36)	-0.168	(0.37)	-0.19	(0.38)	-0.229	(\0.48)
Observations	255		255		255		255	

t-statistics in parentheses
="* p<0.05
** p<0.01
*** p<0.001"

Panel B. Likelihood

	Likelihood		
	Cosine _Similarity (1)	**Mean/ SD_Acq (2)**	**Mean/ SD_T (3)**
Respective Variable	**1.310*** **	**-0.0948*** **	**-0.0579*** **
	(0.338)	**(0.0241)**	**(0.0200)**
		0.932* **	**0.637*** **
		(0.129)	**(0.0706)**
Constant	0.00776	0.159	0.211
	(0.417)	(0.424)	(0.413)
Acquirer Controls	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes
Observations	318	318	318

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Short-Term and Long-Term Synergies with Textual Similarity Between Acquirer and Target Pros, Cons, and Feedback Sections

Table 7 reports Cumulative Abnormal Returns (CARs) around merger announcement and abnormal ROA one, two, and three years after merger announcement for the 255 actual deals in the sample using the cosine similarity between the pros, cons, and feedback sections of acquirer and target companies. Cosine similarity is calculated between 24,132 pros reviews for acquirer and 6,032 pros reviews for target, between 24,127 cons reviews for acquirer and 6,027 cons reviews for target, and between 13,250 feedback reviews for acquirer and 3,490 feedback reviews for target. The dependent variables in Panel A are CARs in the [-3, +3] event window for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The dependent variable in Panel B is abnormal operating performance two years after the merger announcement date. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs and abnormal ROA as the dependent variables with Sim_Pros, Sim_Cons, and Sim_Feedback as independent variables. BTM, Book_Leverage, Cash, and Size are calculated as the (market) value-weighted average of acquirer's and target's values and are included in the models but not reported in the tables. Other control variables include product similarity and cultural similarity between the acquirer and the target. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. CARs

	CARs in the [-3, +3] Event Window		
	Sim_Pros (1)	**Sim_Cons (2)**	**Sim_Feedback (3)**
Sim_Pros/Cons/Feedback	-0.00269	-0.00297	-0.00116
	(0.00403)	(0.00461)	(0.00561)
Constant	0.0119	0.0121	0.00738
	(0.0204)	(0.0205)	(0.0227)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
R-squared	0.050	0.050	0.049

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B: Abnormal ROA

	Abnormal ROA Years 1-2 After		
	Sim_Pros (1)	**Sim_Cons (2)**	**Sim_Feedback (3)**
Sim_Pros/Cons/Feedback	0.00216	0.00652	**0.0297****
	(0.0115)	(0.0131)	**(0.0144)**
Constant	0.00985	0.00566	0.0340
	(0.0582)	(0.0584)	(0.0583)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
R-squared	0.306	0.300	0.290

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

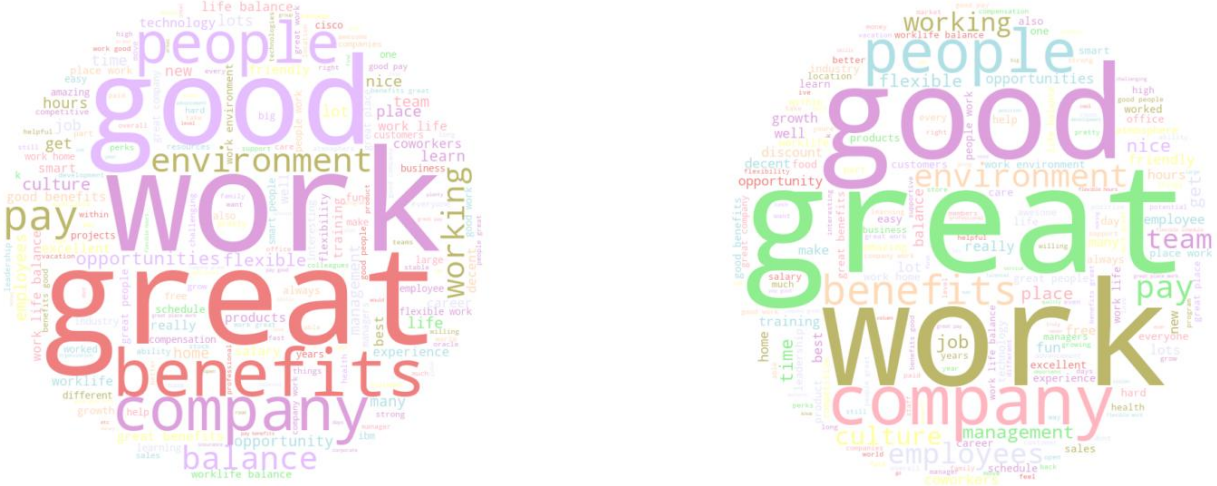
(Table 7, Panel B continued)	**Abnormal ROA Years 2-3 After**		
	Sim_Pros	**Sim_Cons**	**Sim_Feedback**
	(1)	**(2)**	**(3)**
Sim_Pros/Cons/Feedback	0.00141	0.00371	**0.0310****
	(0.0112)	(0.0128)	**(0.0152)**
Constant	-0.00962	-0.0118	-0.0148
	(0.0570)	(0.0572)	(0.0616)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
R-squared	0.109	0.109	0.126

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

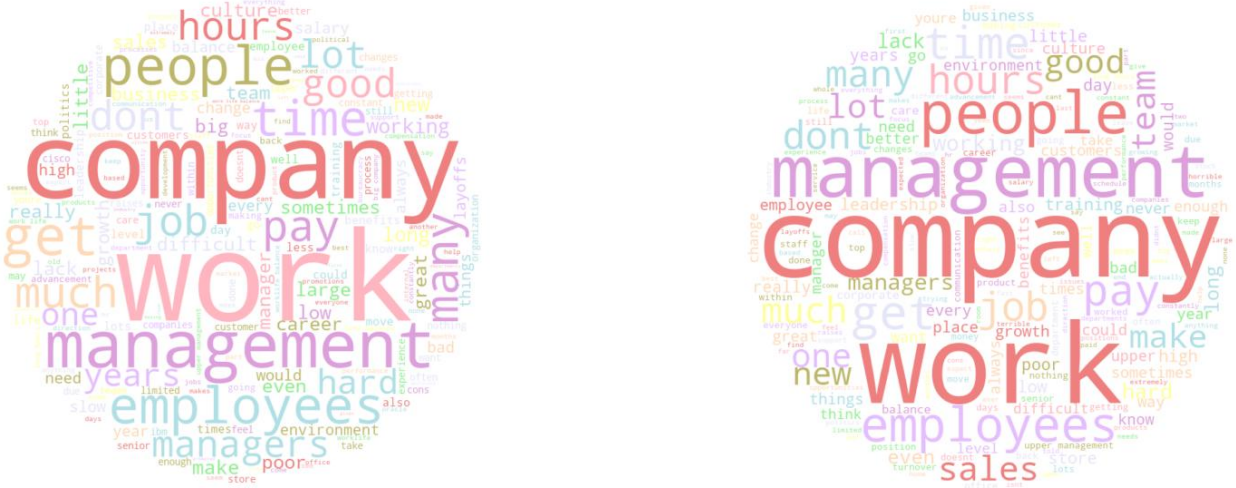
Figure 3: Word Clouds of Word Frequencies in Pros, Cons, and Feedback for Acquirer and Target, Respectively

Figure 3 presents word clouds of the most frequent words in the pros sections (first row) for acquirer (left) and target (right), in the cons sections (second row) for acquirer (left) and target (right), in the feedback sections (third row) for acquirer (left) and target (right). The analysis is based upon 24,132 pros reviews, 24,127 cons reviews, and 13,250 feedback reviews for the acquiring company sample and 6,032 pros reviews, 6,027 cons reviews, and 3,490 feedback reviews for the target company sample. The word clouds show the words that employees value the most in terms of descriptions of pros, cons, and feedback for their employers in Glassdoor.

Panel A. Pros Sections for Acquirer (Left) and Target (Right), Respectively



Panel B. Cons Sections for Acquirer (Left) and Target (Right), Respectively



Panel C. Feedback Sections for Acquirer (Left) and Target (Right), Respectively

Table 8: Cross-Sectional Variation in Integration Needs

Table 8 examines the cross-sectional variations in the effects of employee morale similarity on merger outcomes. The table examines the effect of employee morale similarity on combined announcement returns (short-term synergies), analogous to the tests in Table 3, and on abnormal ROA 1-2 Years after and 2-3 Years after (long-term synergies), analogous to the tests in Table 4. In columns (1) and (2), (4) and (5), and (8) and (9), I run separate specifications on mergers occurring in labor-intensive industries and those occurring in capital-intensive industries. Labor-intensive industries are those with SIC codes greater than or equal to 5000, while capital-intensive industries are defined as those with SIC codes less than 5000. In columns (3) and (4), (6) and (7), and (10) and (11), I run separate specifications for deals involving within-industry mergers and cross-industry mergers based on their SIC code classification. BTM, Book_Leverage, Cash, and Size are calculated as the (market) value-weighted average of acquirer's and target's values and are included in the models but not reported in the tables. Other control variables include product similarity and cultural similarity between the acquirer and the target. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	CARs in the [-3, +3] Event Window			
	Capital-Intensive (1)	**Labor-Intensive (2)**	**Within-Industry (3)**	**Cross-Industry (4)**
Morale_Sim	**0.0246*** **	0.00588	**0.0240***	0.0132
	(0.00898)	(0.0187)	**(0.0122)**	(0.0111)
Constant	-0.0276	-0.0317	-0.0233	-0.0308*
	(0.0186)	(0.0237)	(0.0251)	(0.0178)
Merged Firm Controls	Yes	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	164	91	102	153
R-squared	0.087	0.123	0.111	0.061

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

(Table 8 continued)

	Abnormal ROA Years 1-2 After			
	Capital-Intensive (4)	**Labor-Intensive (5)**	**Within-Industry (6)**	**Cross-Industry (7)**
Morale_Sim	-0.00152	0.0199	-0.00208	0.0304
	(0.0314)	(0.0244)	(0.0411)	(0.0247)
Constant	0.0603	-0.00140	-0.00610	0.0204
	(0.0649)	(0.0310)	(0.0845)	(0.0396)
Merged Firm Controls	Yes	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	164	91	102	153
R-squared	0.323	0.197	0.410	0.175

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

(Table 8 continued)

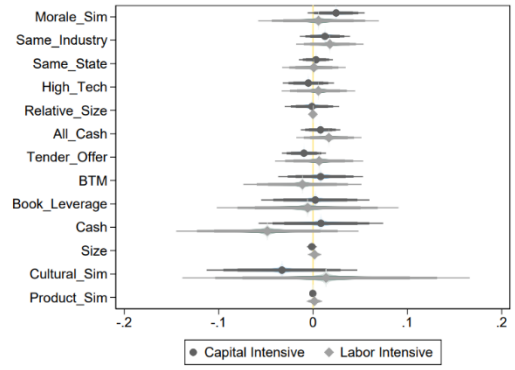
	Abnormal ROA Years 2-3 After			
	Capital-Intensive (8)	**Labor-Intensive (9)**	**Within-Industry (10)**	**Cross-Industry (11)**
Morale_Sim	-0.00828	0.00814	-0.00936	0.0162
	(0.0302)	(0.0319)	(0.0396)	(0.0255)
Constant	0.0971	-0.0164	0.0153	0.0209
	(0.0624)	(0.0406)	(0.0816)	(0.0410)
Merged Firm Controls	Yes	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	164	91	102	153
R-squared	0.294	0.136	0.404	0.094

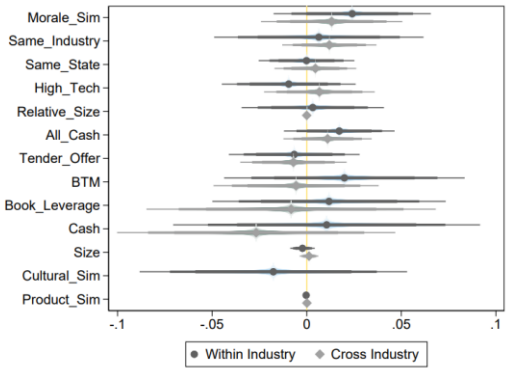
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 4: Plots of Coefficients from Cross-Sectional Regressions

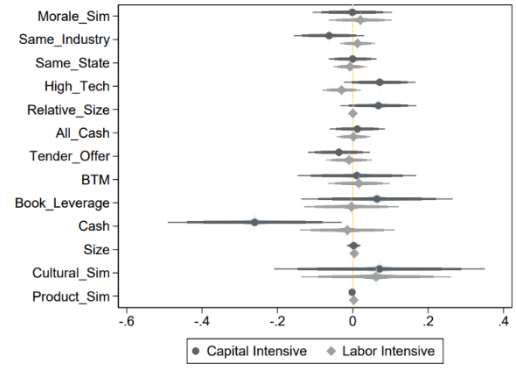
The first row of Figure 4 shows the coefficients from cross-sectional regressions using the [-3, +3] event window for cumulative abnormal returns for capital-intensive and labor-intensive industries (left) and the coefficients from cross-sectional regressions the [-3, +3] event window for cumulative abnormal returns for within-industry and cross-industry mergers (right). The second row of Figure 4 shows the coefficients from cross-sectional regressions using the abnormal ROA for years 1 and 2 after the merger announcement date for capital-intensive and labor-intensive industries (left) and the abnormal ROA for years 1 and 2 after the merger announcement date for within-industry and cross-industry mergers (right). The third row of Figure 4 shows the coefficients from cross-sectional regressions using the abnormal ROA for years 2 and 3 after the merger announcement date for capital-intensive and labor-intensive industries (left) and the abnormal ROA for years 2 and 3 after the merger announcement date for within-industry and cross-industry mergers (right). The figures reflect the regressions of the models in Table 8.

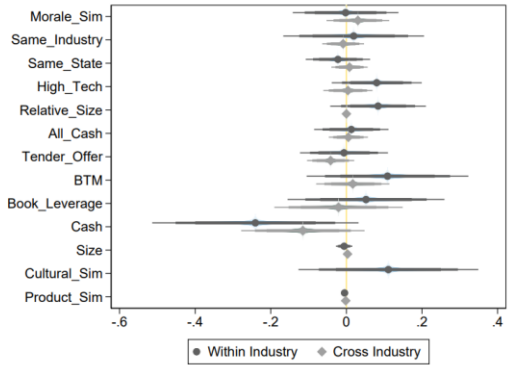
Panel A. CARs in [-3, +3] Event Window



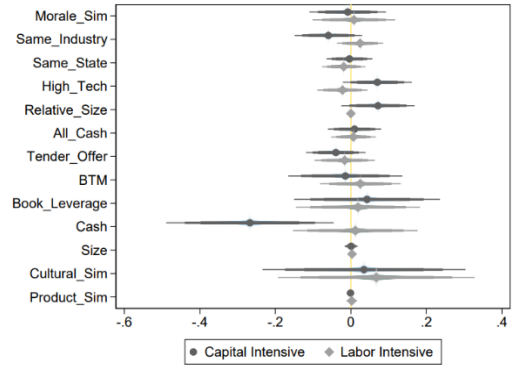


Panel B. ROA 1-2 Years After Merger





Panel C. ROA 2-3 Years After Merger



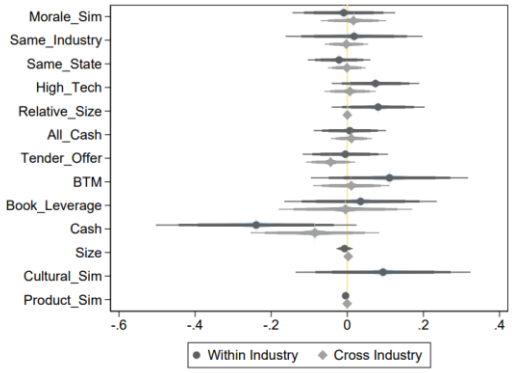


Table 9: Probability, Long-Term Synergies, and Deal Integration in Merger Groups

Table 9 reports results for probability, long-term operating performance, and rate of deal completion using various groupings based on quartiles of acquirer and target employee morale. I create the following groups: High morale acquirer merging with a high morale target (High_High_Mean); High morale acquirer merging with a low morale target (High_Low_Mean); Low morale acquirer merging with a high morale target (Low_High_Mean); and Low morale acquirer merging with a low morale target (Low_Low_Mean). Panel A reports probability regressions consistent with the model in Table 2, Panel B reports abnormal operating performance regressions consistent with the model in Table 4, and Panel C reports labor restructurings regressions consistent with the model in Table 5, and Panel D reports the rate of deal completion regressions consistent with the model in Table 6. Panels B and C include additional controls, such as Size, product similarity and cultural similarity between the acquirer and the target. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability with Groups

	Industry-Size-BTM Match				
	(1)	(2)	(3)	(4)	(5)
High_High_Mean	**1.153*** **				**1.171*** **
	(0.246)				**(0.247)**
High_Low_Mean		**-13.59*** **			**-13.74*** **
		(0.396)			**(0.401)**
Low_High_Mean			**1.254***		**1.407** **
			(0.710)		**(0.710)**
Low_Low_Mean				1.413	1.589
				(1.159)	(1.160)
Acquirer Controls					
ROA_Acq	-0.924	-0.844	-0.884	-0.817	-0.835
	(0.865)	(0.832)	(0.836)	(0.833)	(0.868)
Sale_Growth_Acq	-0.174	-0.116	-0.101	-0.111	-0.166
	(0.218)	(0.207)	(0.203)	(0.204)	(0.217)
Cash_Acq	-0.131	-0.101	-0.0646	-0.0709	-0.149
	(0.540)	(0.552)	(0.543)	(0.542)	(0.551)
Book_Leverage_Acq	0.410	0.371	0.392	0.368	0.448
	(0.409)	(0.404)	(0.397)	(0.399)	(0.410)
RDA_Acq	-0.540	-0.490	-0.567	-0.385	-0.467
	(1.428)	(1.403)	(1.401)	(1.404)	(1.433)
BTM_Acq	0.00209	-0.0445	-0.0225	-0.0208	0.0692
	(0.386)	(0.374)	(0.375)	(0.376)	(0.386)
Target Controls					
ROA_T	-0.451	-0.640	-0.593	-0.620	-0.435
	(0.581)	(0.571)	(0.569)	(0.570)	(0.581)
Sale_Growth_T	-0.0610	0.00770	0.00447	0.00569	-0.0632
	(0.155)	(0.147)	(0.147)	(0.147)	(0.156)
Cash_T	-0.354	-0.330	-0.405	-0.392	-0.345
	(0.524)	(0.535)	(0.522)	(0.522)	(0.536)
Book_Leverage_T	-0.455	-0.340	-0.342	-0.352	-0.414
	(0.378)	(0.370)	(0.366)	(0.367)	(0.383)
RDA_T	-0.224	-0.572	-0.445	-0.489	-0.170
	(0.953)	(0.937)	(0.927)	(0.930)	(0.952)
BTM_T	-0.502	-0.474	-0.538*	-0.489	-0.521
	(0.329)	(0.319)	(0.321)	(0.320)	(0.331)
Constant	-0.188	-0.243	-0.227	-0.208	-0.0991
	(0.369)	(0.360)	(0.358)	(0.363)	(0.373)
Observations	765	765	765	765	765

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B. Abnormal ROA with Groups

	Abnormal ROA Years 1-2 After				
	(1)	(2)	(3)	(4)	(5)
Morale_Sim	0.0212	0.00421	0.0209	0.0158	0.0119
	(0.0230)	(0.0234)	(0.0227)	(0.0226)	(0.0243)
High_High_Mean	-0.0196				-0.0202
	(0.0219)				(0.0220)
High_Low_Mean		**-0.0601***			**-0.0577***
		(0.0330)			**(0.0333)**
Low_High_Mean			0.0871		0.0817
			(0.0740)		(0.0741)
Low_Low_Mean				0.0120	0.00851
				(0.0207)	(0.0208)
Same_Industry	-0.0194	-0.0156	-0.0173	-0.0183	-0.0153
	(0.0167)	(0.0167)	(0.0167)	(0.0167)	(0.0168)
Same_State	-0.00460	-0.00431	-0.00646	-0.00630	-0.00591
	(0.0133)	(0.0132)	(0.0133)	(0.0134)	(0.0135)
High_Tech	0.0332*	0.0306*	0.0328*	0.0317*	0.0348*
	(0.0178)	(0.0175)	(0.0176)	(0.0177)	(0.0178)
Relative_Size	3.46e-05	3.82e-05	4.07e-05	4.42e-05	2.71e-05
	(0.000190)	(0.000188)	(0.000189)	(0.000190)	(0.000189)
All_Cash	0.00101	0.00255	0.00132	0.00179	0.00135
	(0.0142)	(0.0141)	(0.0142)	(0.0142)	(0.0142)
Tender_Offer	-0.0365**	-0.0377**	-0.0359**	-0.0365**	-0.0378**
	(0.0174)	(0.0173)	(0.0174)	(0.0174)	(0.0174)
BTM	0.0380	0.0379	0.0405	0.0433	0.0328
	(0.0288)	(0.0284)	(0.0284)	(0.0285)	(0.0290)
Book_Leverage	0.0320	0.0298	0.0361	0.0326	0.0320
	(0.0387)	(0.0385)	(0.0387)	(0.0387)	(0.0387)
Cash	-0.140***	-0.139***	-0.141***	-0.136***	-0.141***
	(0.0428)	(0.0426)	(0.0428)	(0.0431)	(0.0430)
Size	0.00256	0.00236	0.00213	0.00262	0.00336
	(0.00314)	(0.00308)	(0.00309)	(0.00325)	(0.00327)
Cultural_Sim	0.0558	0.0568	0.0588	0.0589	0.0546
	(0.0582)	(0.0579)	(0.0581)	(0.0582)	(0.0580)
Product_Sim	-0.00312***	-0.00314***	-0.00320***	-0.00322***	-0.00299***
	(0.000931)	(0.000920)	(0.000923)	(0.000925)	(0.000930)
Constant	0.0170	0.0296	0.0152	0.0133	0.0181
	(0.0381)	(0.0382)	(0.0381)	(0.0395)	(0.0401)
Industry and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255
R-squared	0.241	0.248	0.242	0.239	0.255

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel C. Labor Restructurings with Groups

	Labor Restructurings Years 1-3 After				
	(1)	(2)	(3)	(4)	(5)
Morale_Sim	**0.853****	**0.845****	**0.708****	**0.760****	**1.014*****
	(0.339)	**(0.356)**	**(0.337)**	**(0.337)**	**(0.361)**
High_High_Mean	**-0.696****				**-0.734****
	(0.336)				**(0.338)**
High_Low_Mean		0.475			0.409
		(0.444)			(0.441)
Low_High_Mean			-0.518		-0.621
			(1.371)		(1.359)
Low_Low_Mean				-0.375	-0.425
				(0.308)	(0.309)
Same_Industry	-0.318	-0.323	-0.310	-0.310	-0.375
	(0.242)	(0.245)	(0.247)	(0.243)	(0.246)
Same_State	-0.236	-0.248	-0.237	-0.215	-0.209
	(0.190)	(0.192)	(0.193)	(0.193)	(0.192)
High_Tech	-0.323	-0.388	-0.397	-0.410	-0.351
	(0.250)	(0.250)	(0.252)	(0.251)	(0.252)
Relative_Size	-0.535***	-0.545***	-0.544***	-0.547***	-0.537***
	(0.150)	(0.151)	(0.151)	(0.151)	(0.150)
All_Cash	0.375*	0.386*	0.389*	0.400*	0.367*
	(0.207)	(0.208)	(0.209)	(0.208)	(0.207)
Tender_Offer	-0.158	-0.104	-0.113	-0.108	-0.139
	(0.259)	(0.261)	(0.261)	(0.260)	(0.259)
BTM	-0.374	-0.228	-0.262	-0.311	-0.359
	(0.454)	(0.458)	(0.458)	(0.456)	(0.459)
Book_Leverage	-1.700***	-1.637**	-1.672***	-1.639***	-1.665***
	(0.624)	(0.629)	(0.631)	(0.629)	(0.625)
Cash	-0.727	-0.779	-0.781	-0.858	-0.691
	(0.725)	(0.730)	(0.738)	(0.730)	(0.733)
Size	0.637***	0.611***	0.613***	0.592***	0.612***
	(0.0540)	(0.0532)	(0.0533)	(0.0559)	(0.0564)
Cultural_Sim	-1.878**	-1.783*	-1.800*	-1.871*	-1.943**
	(0.942)	(0.949)	(0.952)	(0.950)	(0.944)
Product_Sim	-0.0258	-0.0308*	-0.0290*	-0.0295*	-0.0284*
	(0.0161)	(0.0163)	(0.0162)	(0.0162)	(0.0162)
Constant	-2.616***	-2.540***	-2.407***	-2.199***	-2.466***
	(0.657)	(0.665)	(0.658)	(0.680)	(0.691)
Industry and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255
R-squared	0.590	0.584	0.582	0.584	0.597

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel D. Rate of Deal Completion with Groups

	Cox Hazard for Deal Completion Time							
Main Effects								
High_High_Mean	**0.546****	**(2.64)**						
High_Low_Mean			-44.83	(0.001)				
Low_High_Mean					0.305	(0.63)		
Low_Low_Mean							-35.19	(0.006)
Controls								
ROA_Acq	-1.162	(0.67)	-1.161	(0.68)	-1.026	(0.60)	-1.177	(0.69)
Sale_Growth_Acq	-0.19	(0.47)	-0.12	(0.31)	-0.0995	(0.25)	-0.123	(0.32)
Cash_Acq	1.004	(0.93)	1.389	(1.3)	1.526	(1.43)	1.428	(1.35)
Book_Leverage_Acq	-0.601	(1.06)	-0.596	(1.09)	-0.566	(1.04)	-0.562	(1.03)
RDA_Acq	0.435	(0.11)	0.599	(0.15)	0.422	(0.11)	0.609	(0.16)
BTM_Acq	0.193	(0.33)	0.205	(0.37)	0.216	(0.39)	0.201	(0.36)
ROA_T	-1.804	(1.76)	-1.976	(1.87)	-2.03	(1.93)	-2.023	(1.92)
Sale_Growth_T	0.161	(0.43)	0.147	(0.42)	0.129	(0.37)	0.154	(0.44)
Cash_T	-0.937	(0.94)	-1.42	(1.45)	-1.521	(1.57)	-1.453	(1.51)
Book_Leverage_T	0.799	(1.6)	0.718	(1.48)	0.708	(1.45)	0.684	(1.4)
RDA_T	-0.305	(0.11)	-0.302	(0.12)	-0.106	(0.04)	-0.315	(0.12)
BTM_T	-0.197	(0.41)	-0.183	(0.38)	-0.225	(0.47)	-0.2	(0.42)
Observations	255		255		255		255	

t-statistics in parentheses
="* p<0.05
** p<0.01
*** p<0.001"

Table 10: Probability of a Merger Using Rating Categories

Table 10 reports the results from logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the individual rating categories' mean and standard deviation of target one year before (Panel A) and one month before (Panel B) merger announcement of the acquirer-target pair and other control variables. The dependent variable is a binary variable that takes the value of one if the observation is an actual merger deal, as defined in Table 2. This variable takes the value of zero if the observation is a pseudo firm-pair in the control group. I follow Bena and Li (2014) to pair each actual acquirer with a pseudo target based on the actual target's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual target firm) and to pair each actual target with a pseudo acquirer based on the actual acquirer's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual acquirer firm). The sample period is from 2008 to 2020. The acquirer and target controls are BTM, ROA, Book_Leverage, Sale_Growth, Cash, and RDA. Constant terms are reported. *T*-statistics are reported in parentheses. All results hold with and without deal fixed effects (the tables report results without deal fixed effects). In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability Using Target Rating Categories One Year Before Merger

	Industry-Size-BTM Match					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	**0.288****					
	(0.126)					
CO_SD_T	-0.235					
	(0.339)					
CB_Mean_T		**0.202***				
		(0.109)				
CB_SD_T		-0.213				
		(0.369)				
CV_Mean_T			**0.203***			
			(0.116)			
CV_SD_T			-0.386			
			(0.316)			
SL_Mean_T				**0.212***		
				(0.125)		
SL_SD_T				-0.123		
				(0.301)		
WL_Mean_T					**0.203***	
					(0.111)	
WL_SD_T					-0.151	
					(0.327)	
OR_Mean_T						**0.225****
						(0.112)
OR_SD_T						-0.170
						(0.331)
Constant	0.205	0.228	0.480	0.308	0.331	0.229
	(0.979)	(0.985)	(0.941)	(0.959)	(0.944)	(0.972)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	475	475	382	475	475	483

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B. Probability Using Target Rating Categories One Month Before Merger

	Industry-Size-BTM Match					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	0.118					
	(0.0842)					
CO_SD_T	**0.552****					
	(0.238)					
CB_Mean_T		**0.158****				
		(0.0839)				
CB_SD_T		0.425				
		(0.279)				
CV_Mean_T			**0.161****			
			(0.0799)			
CV_SD_T			**0.423***			
			(0.220)			
SL_Mean_T				**0.213*****		
				(0.0816)		
SL_SD_T				0.253		
				(0.226)		
WL_Mean_T					-0.120	
					(0.0834)	
WL_SD_T					**1.179*****	
					(0.242)	
OR_Mean_T						0.0483
						(0.0731)
OR_SD_T						**0.749*****
						(0.228)
Constant	0.0985	0.103	0.103	0.0748	0.140	0.128
	(0.369)	(0.368)	(0.369)	(0.369)	(0.370)	(0.366)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	270	270	235	270	270	281

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Event Study – Impact of Target Morale on Acquirer Morale

Table 11 presents the results of a fixed effects event study regression analyzing the effect of target firm morale on acquirer firm morale before and after a merger. The analysis is based on 4,072 acquirer company reviews and 2,087 target company reviews for the full sample, 1,736 acquirer company reviews and 854 target company reviews for the management sample, and 2,559 acquirer company reviews and 1,985 target company reviews for the rank-and-file employee sample. The dependent variable is the average Glassdoor rating of the acquiring firm. The key independent variables include target morale (Mean_T), its squared term (Mean_T_Squared), and event time dummies (t-4 to t+4), which capture changes in acquirer morale relative to the merger event (year t=0). Standard errors, clustered at the firm level, are reported in parentheses. Firm and year fixed effects are included. Column (1) reports results for the full sample, Column (2) focuses on the management sample, and Column (3) presents findings for rank-and-file employees. Statistical significance levels: *p<0.1, **p<0.05, ***p<0.01.

	(1) Full Sample	**(2) Management Sample**	**(3) Rank-and-File Sample**
Mean_T	0.00534	0.00354	0.00546
	(0.00414)	(0.00841)	(0.00386)
Mean_T_Squared	**-0.00122***	-0.000708	**-0.00123***
	(0.000682)	(0.00133)	**(0.000653)**
t-4	**-0.0422****	-0.0254	-0.0312
	(0.0196)	(0.0380)	(0.0201)
t-3	-0.0218	**-0.104*****	-0.0145
	(0.0174)	**(0.0388)**	(0.0181)
t-2	-0.0137	-0.0121	-0.0109
	(0.0163)	(0.0348)	(0.0170)
t-1	-0.0163	-0.0387	-0.0140
	(0.0157)	(0.0332)	(0.0161)
t+1	0.00598	-0.0126	0.0117
	(0.0164)	(0.0328)	(0.0167)
t+2	0.00129	0.00729	0.00210
	(0.0174)	(0.0388)	(0.0178)
t+3	**0.0389***	0.00159	**0.0407****
	(0.0205)	(0.0418)	**(0.0207)**
t+4	**0.0564*****	0.0231	**0.0523****
	(0.0216)	(0.0411)	**(0.0208)**
Constant	1.328***	1.715***	1.336***
	(0.00555)	(0.0103)	(0.00561)
Year and Firm FEs	0.004	0.003	0.003
Number of company_id	510	510	510
Observations	6,215	3,282	6,097
R-squared	0.004	0.003	0.003

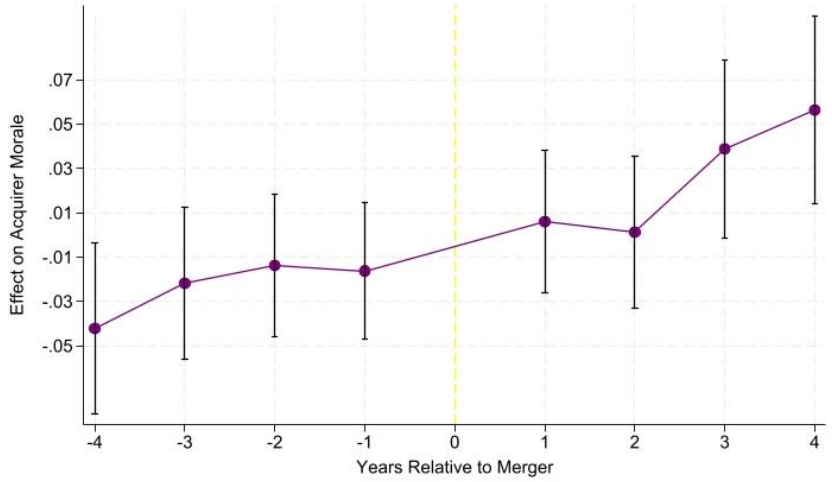
Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

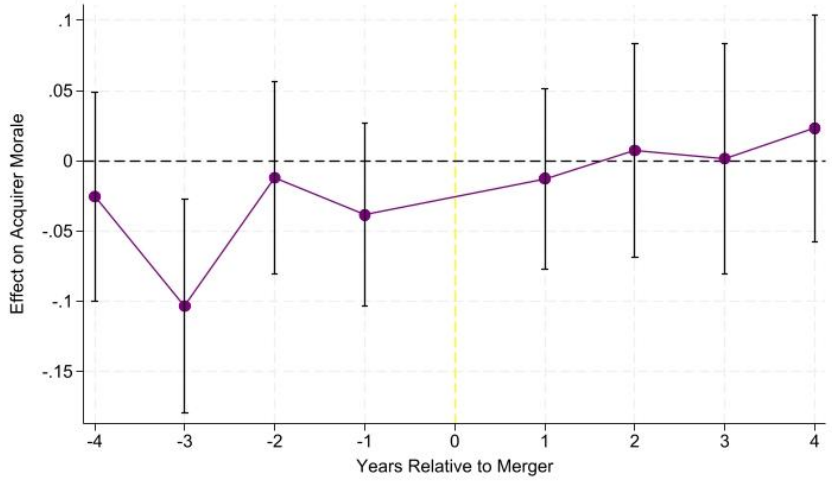
Figure 5: Event Study – Impact of Target Morale on Acquirer Morale

Figure 5 presents an event study analyzing the effect of target firm morale on acquirer firm morale in the years before and after a merger (from t-4 to t+4 relative to the merger announcement date). The analysis is based on 4,072 acquirer company reviews and 2,087 target company reviews for the full sample, 1,736 acquirer company reviews and 854 target company reviews for the management sample, and 2,559 acquirer company reviews and 1,985 target company reviews for the rank-and-file employee sample. The x-axis represents years relative to the merger event (year 0), while the y-axis shows the estimated impact on acquirer morale. The purple line represents the estimated coefficients from a fixed effects regression, with confidence intervals (black error bars) calculated using clustered standard errors at the firm level. A vertical yellow dashed line marks the merger event.

Panel A. Full Sample



Panel B. Rank-and-File Employee Sample



Panel C. Management Sample

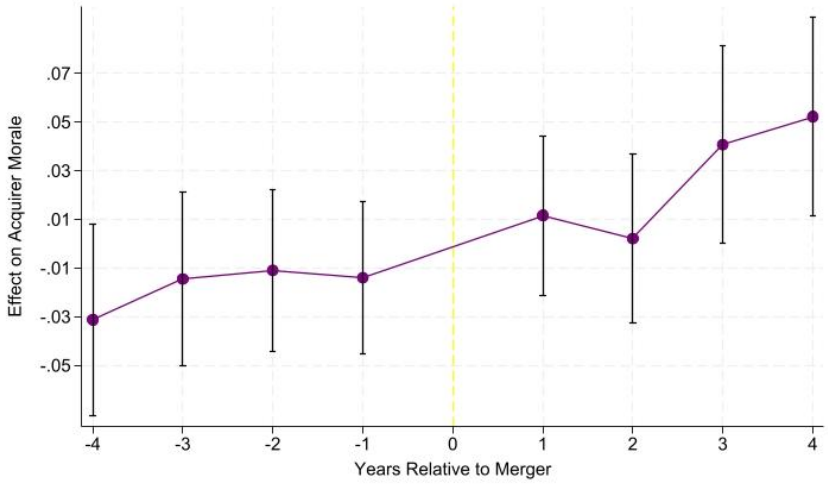


Table 12: Merger Performance, Differences in and Mean of Acquirer Employee Morale

Table 12 reports the raw and absolute difference in acquirer employee morale from year of merger announcement to year after merger announcement for the 255 acquiring companies in the sample from 2008 through 2020. The dependent variable is the raw difference in acquirer employee morale from year of to year after merger announcement (Models (1), (2), and (3)), the absolute difference in acquirer employee morale from year of to year after merger announcement (Models (4), (5), and (6)), and the mean of acquirer employee morale one year after merger announcement (Models (7), (8), and (9)). The models estimate OLS regressions with the above-mentioned dependent variables with raw and absolute differences between acquirer and target employee morale from year before merger announcement to year of merger announcement and market reaction around the seven days around the merger announcement and other merger control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Raw_Difference_Mean_Acq		
	(1)	**(2)**	**(3)**
Raw_Difference_Mean_Acq_T	**-0.372*** **		**-0.380*** **
	(0.129)		**(0.127)**
CAR [-3, +3]		-28.64	-33.03
		(24.75)	(22.53)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.382	0.325	0.392

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Abs_Difference_Mean_Acq		
	(4)	**(5)**	**(6)**
Abs_Difference_Mean_Acq_T	**0.293*** **		**0.290*** **
	(0.106)		**(0.109)**
CAR [-3, +3]		-16.19	-13.04
		(16.32)	(15.80)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.275	0.224	0.278

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Mean_Acq		
	CAR [-1, +1] (7)	**CAR [-3, +3] (8)**	**CAR [-5, +5] (9)**
Respective CARs	11.90	15.29	10.62
	(30.61)	(28.73)	(22.79)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.149	0.150	0.149

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 6: Histograms of Predicted Values for Models (1), (2), and (3) (from Table 12)
Figure 6 presents the distribution of predicted values from regressions with impact of difference between acquirer and target employee morale from year before to year of merger announcement and market reaction around merger announcement on difference between acquirer employee morale at year of merger announcement and acquirer employee morale at one year after merger announcement. The table presents the histogram of predicted values from the regressions in Models (1), (2), and (3) from Table 12.

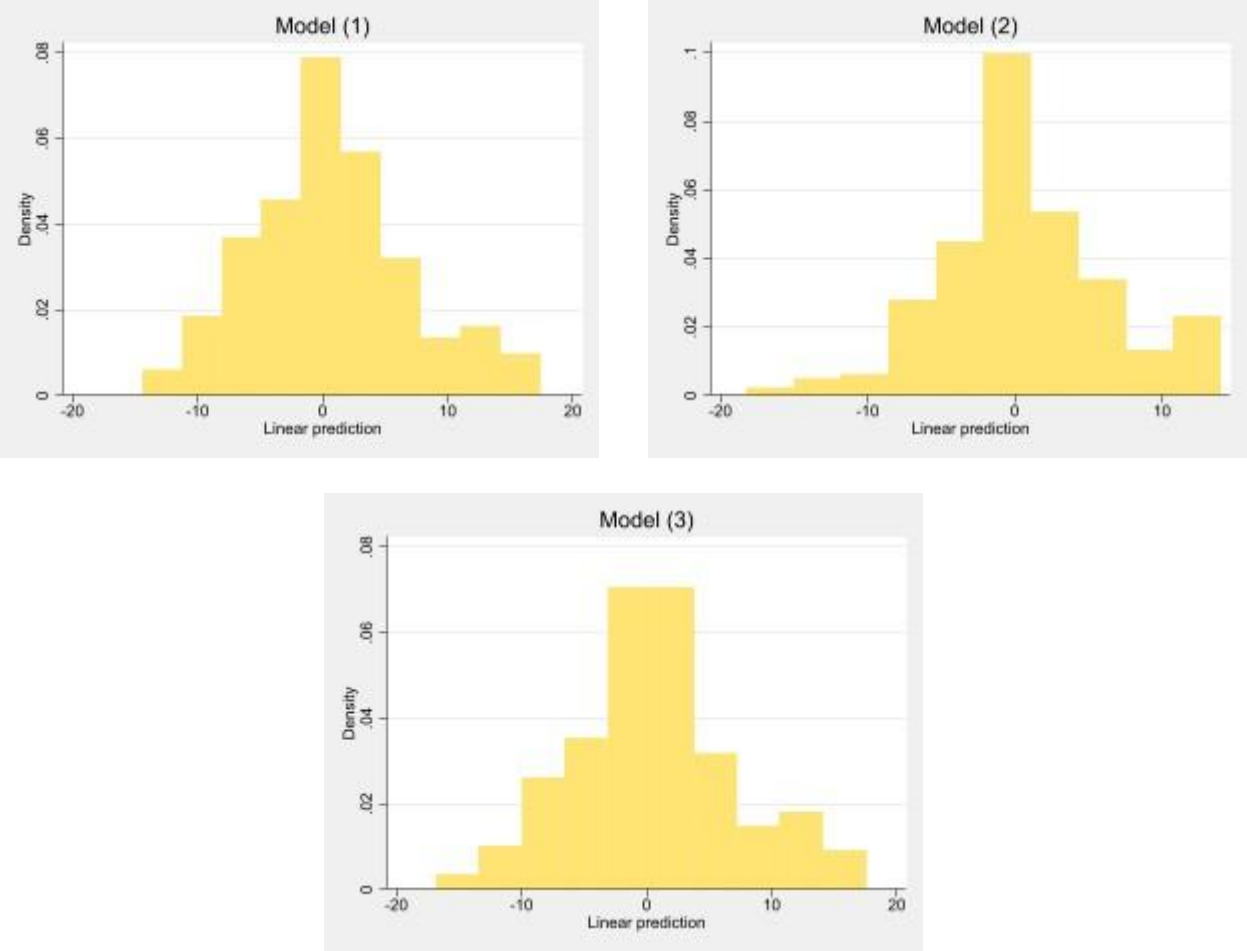


Figure 7: Discontinuity Test

Figure 7 presents a regression discontinuity test examining the relationship between pre-merger morale differences between the acquirer and the target and post-merger changes in acquirer morale. The x-axis represents the standardized difference in employee morale between the acquirer and the target in the year before the merger announcement (sd_diff_at), while the y-axis represents the standardized difference in acquirer morale from the year of the merger announcement to the year after (sd_diff_a). The fitted lines illustrate potential discontinuities at the threshold (x = 0), where the pre-merger morale difference shifts from negative to positive. The plot highlights whether differences in morale alignment between merging firms predict changes in acquirer morale after the merger.

Table 13: 2SLS with Weather IV

The first column of Table 13 details the first stage regression results of a 2SLS model, showing the impact of temperature (difference between the average temperatures at the acquirer's and target's headquarters over the ten days prior to the deal announcement date) on morale with the coefficient and standard error indicated. Subsequent columns illustrate the second stage regression results, analyzing how morale affects different merger outcomes, such as cumulative abnormal returns (combined acquirer and target CARs in the [-3, +3] event window), abnormal return on assets (ROA) 1-2 years after the merger, and labor restructurings 1-3 years after the merger, with each model's significance levels, controls, and fixed effects detailed. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	2SLS Model			
	Model Weather IV (1)	**2SLS CAR [-3, +3] (2)**	**2SLS ROA 1-2 Yrs After (3)**	**2SLS Labor Restructuring 1-3 Yrs After (4)**
Temperature	-0.0806			
	(0.0750)			
Morale_Sim		-0.452	0.816	**49.72****
		(0.587)	(1.888)	**(23.73)**
Constant	0.0443	0.329	-0.605	**-40.66****
	(0.0560)	(0.456)	(1.469)	**(18.39)**
Merged Firm Controls	No	Yes	Yes	Yes
Industry and Year FEs	No	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.044	0.019	0.254	0.559

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Online Appendix

for

The Value of Employee Morale in Mergers and Acquisitions: Evidence from Glassdoor

By Kristina Lalova

Table A1: Correlations and Deal Distribution

Table A1, Panel A presents correlations between ESG ratings for acquirer (obtained from Refinitiv) and employee morale similarity. Table A1, Panel B presents correlations between ESG ratings for target (obtained from Refinitiv) and employee morale similarity. The various variables signify the following ESG dimensions – overall ESG rating (ESG), controversy score (Controversy), employee satisfaction score (Employees), social pillar score (Social_Pillar), governance score (Governance), human rights score (H_Rights), community score (Community), product score (Product), senior management score (Managerial), and workforce score (Workforce).

Panel A. Morale Similarity and Acquirer ESG Ratings

	Morale_Sim	ESG	Controversy	Employees	Social_Pillar	Governance	H_Rights	Community	Product	Managerial	Workforce
Morale_Sim	1										
ESG	0.1920	1									
Controversy	0.1596	0.8845	1								
Employees	0.0624	0.4516	0.2316	1							
Social_Pillar	0.1948	0.9561	0.7821	0.5250	1						
Governance	0.1739	0.9445	0.8201	0.4065	0.8979	1					
H_Rights	0.1303	0.8144	0.6084	0.5045	0.8934	0.7531	1				
Community	0.2098	0.9510	0.8134	0.4816	0.9684	0.9128	0.8032	1			
Product	0.2133	0.8807	0.7647	0.4182	0.9047	0.8315	0.7193	0.8629	1		
Managerial	0.1645	0.9142	0.8162	0.3517	0.8530	0.9881	0.7015	0.8771	0.7974	1	
Workforce	0.1840	0.9287	0.7275	0.5639	0.9680	0.8558	0.8290	0.9380	0.8478	0.8034	1

Panel B. Morale Similarity and Target ESG Ratings

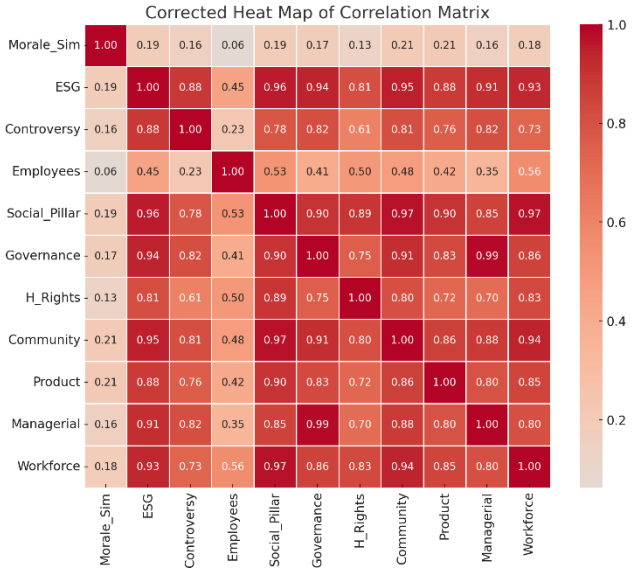
	Morale_Sim	ESG	Controversy	Employees	Social_Pillar	Governance	H_Rights	Community	Product	Managerial	Workforce
Morale_Sim	1										
ESG	0.1959	1									
Controversy	0.1603	0.9185	1								
Employees	0.1223	0.5727	0.3779	1							
Social_Pillar	0.2028	0.9771	0.8618	0.6117	1						
Governance	0.1921	0.9619	0.8728	0.5559	0.9514	1					
H_Rights	0.1503	0.9017	0.7881	0.5946	0.9378	0.8700	1				
Community	0.1971	0.9655	0.8655	0.6029	0.9839	0.9437	0.8913	1			
Product	0.2345	0.9166	0.8257	0.4857	0.9335	0.9189	0.8344	0.9037	1		
Managerial	0.1846	0.9408	0.8743	0.5309	0.9289	0.9916	0.8428	0.9216	0.9059	1	
Workforce	0.1948	0.9592	0.8099	0.6478	0.9671	0.9090	0.8804	0.9534	0.8670	0.8790	1

Panel C. Deals by Merger Announcement Date

Year	Number of Deals	Percentage of Sample
2008	10	3.92%
2009	14	5.49%
2010	10	3.92%
2011	14	5.49%
2012	21	8.24%
2013	26	10.20%
2014	18	7.06%
2015	25	9.80%
2016	33	12.94%
2017	17	6.67%
2018	32	12.55%
2019	26	10.20%
2020	9	3.53%
Total	255	100.00%

Figure A1: Heat Map of Correlation Matrix

Figure A1 presents heat maps of the correlation matrices for cosine similarity and ESG ratings for acquirers (left) and targets (right). The colors indicate the strength of correlations, with dark red representing strong positive correlations and light red indicating weaker or negative correlations. Data is based on Glassdoor and Refinitiv, covering acquirers and targets in mergers from 2008 to 2020.



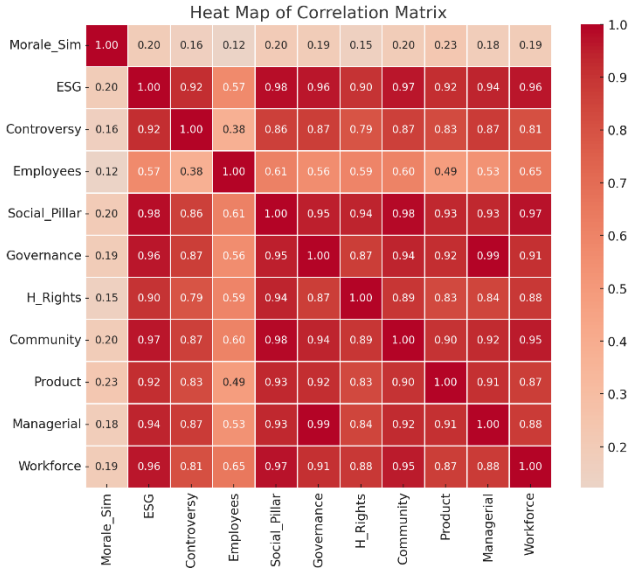


Table A2: Probability of a Merger Using Rating Categories

Table A2 reports the results from logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the individual rating categories' mean and standard deviation of acquirer one year before (Panel A) and one month before (Panel B) merger announcement of the acquirer-target pair and other control variables. The dependent variable is a binary variable that takes the value of one if the observation is an actual merger deal, as defined in Table 2. This variable takes the value of zero if the observation is a pseudo firm-pair in the control group. I follow Bena and Li (2014) to pair each actual acquirer with a pseudo target based on the actual target's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual target firm) and to pair each actual target with a pseudo acquirer based on the actual acquirer's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual acquirer firm). The sample period is from 2008 to 2020. The acquirer and target controls are BTM, ROA, Book_Leverage, Sale_Growth, Cash, and RDA. Constant terms are reported. *T*-statistics are reported in parentheses. All results hold with and without deal fixed effects (the tables report results without deal fixed effects). In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability Using Acquirer Rating Categories One Year Before Merger

	Industry-Size-BTM Match					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	0.0458					
	(0.119)					
CO_SD_Acq	0.315					
	(0.327)					
CB_Mean_Acq		-0.104				
		(0.114)				
CB_SD_Acq		**0.846****				
		(0.409)				
CV_Mean_Acq			-0.0269			
			(0.114)			
CV_SD_Acq			0.359			
			(0.304)			
SL_Mean_Acq				-0.00948		
				(0.119)		
SL_SD_Acq				0.364		
				(0.293)		
WL_Mean_Acq					0.0117	
					(0.113)	
WL_SD_Acq					0.421	
					(0.320)	
OR_Mean_Acq						-0.0277
						(0.107)
OR_SD_Acq						0.496
						(0.318)
Constant	0.481	0.649	0.653	0.541	0.497	0.538
	(0.930)	(0.958)	(0.934)	(0.932)	(0.933)	(0.942)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	509	509	412	509	509	517

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Probability Using Acquirer Rating Categories One Month Before Merger

	Industry-Size-BTM Match					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	-0.0814					
	(0.0798)					
CO_SD_Acq	**0.825*** **					
	(0.233)					
CB_Mean_Acq		0.0616				
		(0.0756)				
CB_SD_Acq		**0.421***				
		(0.249)				
CV_Mean_Acq			0.0783			
			(0.0819)			
CV_SD_Acq			**0.427***			
			(0.224)			
SL_Mean_Acq				**0.133***		
				(0.0740)		
SL_SD_Acq				0.195		
				(0.204)		
WL_Mean_Acq					**-0.335*** **	
					(0.0904)	
WL_SD_Acq					**1.438*** **	
					(0.248)	
OR_Mean_Acq						-0.0178
						(0.0717)
OR_SD_Acq						**0.622*** **
						(0.220)
Constant	0.207	0.0987	0.0771	0.0819	0.270	0.155
	(0.369)	(0.366)	(0.367)	(0.369)	(0.368)	(0.364)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	242	242	208	242	242	251

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A3: Acquirer and Target Price Runup Using Mean and Standard Deviation

Table A3 reports Cumulative Abnormal Returns in the one month and one year before merger announcement (to signify the price runup in acquirer firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for acquirer firms using the overall mean and standard deviation of acquirer ratings individually as the main independent variables. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with mean and standard deviation of acquirer ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	CARs in Event Windows ([-21, -4] and [-252, -4] Event Ranges) Before Merger			
	(1)	(2)	(3)	(4)
	[-21, -4] Acq	[-252,-4] Acq	[-21,-4] T	[-252,-4] T
Mean_Acq	0.000686	-0.00154		
	(0.00163)	(0.0197)		
SD_Acq	0.0225	0.0416		
	(0.0225)	(0.273)		
Mean_T			-0.000851	-0.0191
			(0.00134)	(0.0182)
SD_T			**-0.0323***	-0.358
			(0.0167)	(0.227)
Same_Industry	-0.0206	-0.335	0.0380	0.438
	(0.0282)	(0.342)	(0.0239)	(0.325)
Same_State	0.00734	0.136	-0.00709	-0.0819
	(0.0225)	(0.273)	(0.0190)	(0.258)
High_Tech	0.0235	0.219	-0.0231	-0.217
	(0.0297)	(0.361)	(0.0253)	(0.344)
Relative_Size	3.78e-05	0.000267	2.89e-05	0.000379
	(0.000320)	(0.00388)	(0.000271)	(0.00369)
All_Cash	-0.00366	0.0118	0.00344	0.0230
	(0.0242)	(0.294)	(0.0203)	(0.276)
Tender_Offer	-0.00950	-0.130	0.0125	0.263
	(0.0295)	(0.358)	(0.0249)	(0.338)
BTM	0.00242	-0.00133	0.0200	0.107
	(0.0484)	(0.588)	(0.0407)	(0.554)
Book_Leverage	0.109*	0.495	-0.0406	-0.285
	(0.0656)	(0.797)	(0.0553)	(0.752)
Cash	-0.0300	-0.556	0.0662	0.723
	(0.0726)	(0.882)	(0.0613)	(0.834)
Size	-0.0129**	-0.146**	0.00975**	0.134**
	(0.00548)	(0.0665)	(0.00446)	(0.0607)
Cultural_Sim	0.0243	-0.751	0.0651	0.836
	(0.0976)	(1.185)	(0.0826)	(1.123)
Product_Sim	0.000476	0.00614	-0.000915	-0.00941
	(0.00156)	(0.0189)	(0.00132)	(0.0179)
Constant	0.0669	1.370*	-0.0738	-0.931
	(0.0649)	(0.788)	(0.0556)	(0.757)
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	170	255	111	255
R-squared	0.042	0.036	0.058	0.049

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4: Acquirer Price Runup Using Rating Categories

Table A4 reports Cumulative Abnormal Returns (CARs) in the one month before merger announcement (to signify the price runup in acquirer firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and for acquirer firms using the individual categories' mean and standard deviation of acquirer ratings individually as the main independent variables. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with mean and standard deviation of acquirer ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Acquirer CARs in [-21, -4] Event Window Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	**-0.0228***					
	(0.0126)					
CO_SD_Acq	0.00612					
	(0.0188)					
CB_Mean_Acq		0.0128				
		(0.00941)				
CB_SD_Acq		-0.0336				
		(0.0283)				
CV_Mean_Acq			-0.00167			
			(0.00975)			
CV_SD_Acq			-0.0188			
			(0.0241)			
SL_Mean_Acq				0.00326		
				(0.0103)		
SL_SD_Acq				0.00174		
				(0.0236)		
WL_Mean_Acq					0.00786	
					(0.00886)	
WL_SD_Acq					-0.0108	
					(0.0237)	
OR_Mean_Acq						0.00157
						(0.00942)
OR_SD_Acq						0.000204
						(0.0245)
Constant	0.164**	0.0931	0.0972	0.0894	0.0912	0.0909
	(0.0712)	(0.0592)	(0.0594)	(0.0598)	(0.0593)	(0.0597)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	No	No	No	No	No	No
Industry and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	164	164	141	164	164	170
R-squared	0.052	0.046	0.046	0.039	0.042	0.039

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A5: Target Price Runup Using Rating Categories

Table A5 reports Cumulative Abnormal Returns (CARs) in the one month and one year before merger announcement (to signify the price runup in target firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for target firms using the individual categories' mean and standard deviation of target ratings individually as the main independent variables. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with mean and standard deviation of target ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Target CARs in [-21, -4] Event Window Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	-0.00678					
	(0.00815)					
CO_SD_T	0.0136					
	(0.0134)					
CB_Mean_T		-0.00611				
		(0.00676)				
CB_SD_T		0.0242				
		(0.0215)				
CV_Mean_T			-0.00742			
			(0.00804)			
CV_SD_T			**0.0425****			
			(0.0183)			
SL_Mean_T				-0.00382		
				(0.00826)		
SL_SD_T				0.0170		
				(0.0170)		
WL_Mean_T					-0.00465	
					(0.00538)	
WL_SD_T					0.0101	
					(0.0154)	
OR_Mean_T						-0.00847
						(0.00746)
OR_SD_T						**0.0301***
						(0.0179)
Constant	-0.103*	-0.118**	-0.126**	-0.120**	-0.113**	-0.118**
	(0.0546)	(0.0506)	(0.0502)	(0.0507)	(0.0509)	(0.0504)
Acquirer Controls	No	No	No	No	No	No
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	106	106	94	106	106	111
R-squared	0.049	0.048	0.068	0.047	0.047	0.054

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A6: Functional Form CARs Using Mean and Standard Deviation

Table A6 reports functional models for Cumulative Abnormal Returns (CARs) before merger announcement for the acquirer and the target in the 255 actual deals in the sample. The dependent variable is CAR one month (column (1)) and one year (column (2)) before merger announcement date for acquirer and one month (column (3)) and one year (column (4)) before merger announcement date for target. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with overall mean and standard deviation of acquirer ratings (columns (1) and (2)) and overall mean and standard deviation of target ratings (columns (3) and (4)) and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	CARs in Event Windows ([-21, -4] and [-252, -4]) Before Merger			
	(1)	(2)	(3)	(4)
	[-21,-4] Acq	[-252,-4] Acq	[-21,-4] T	[-252,-4] T
Mean	0.00638	0.0940	0.00371	0.00399
	(0.00568)	(0.0688)	(0.00537)	(0.0732)
Mean_Sqrd	-0.000241	-0.00405	-0.000199	-0.00101
	(0.000230)	(0.00279)	(0.000224)	(0.00306)
SD	-0.00168	0.285	-0.105	-0.905
	(0.0869)	(1.052)	(0.0711)	(0.969)
SD_Sqrd	0.00998	-0.204	0.0315	0.244
	(0.0472)	(0.572)	(0.0319)	(0.434)
Same_Industry	-0.0206	-0.345	0.0361	0.424
	(0.0282)	(0.342)	(0.0240)	(0.327)
Same_State	0.00500	0.0897	-0.00649	-0.0811
	(0.0227)	(0.275)	(0.0190)	(0.260)
High_Tech	0.0227	0.214	-0.0233	-0.221
	(0.0298)	(0.361)	(0.0253)	(0.345)
Relative_Size	2.08e-05	3.33e-05	4.20e-05	0.000461
	(0.000321)	(0.00388)	(0.000272)	(0.00370)
All_Cash	-0.00458	-0.0144	0.00206	0.0153
	(0.0243)	(0.294)	(0.0204)	(0.278)
Tender_Offer	-0.00897	-0.136	0.0144	0.273
	(0.0296)	(0.358)	(0.0250)	(0.341)
BTM	-0.00333	-0.115	0.0187	0.100
	(0.0488)	(0.591)	(0.0408)	(0.556)
Book_Leverage	0.101	0.316	-0.0328	-0.234
	(0.0665)	(0.805)	(0.0557)	(0.760)
Cash	-0.0311	-0.643	0.0694	0.750
	(0.0733)	(0.887)	(0.0615)	(0.838)
Size	-0.0132**	-0.149**	0.00914**	0.129**
	(0.00551)	(0.0667)	(0.00450)	(0.0614)
Cultural_Sim	0.0172	-0.929	0.0682	0.878
	(0.0984)	(1.191)	(0.0834)	(1.137)
Product_Sim	0.000603	0.00934	-0.000900	-0.0100
	(0.00157)	(0.0191)	(0.00137)	(0.0187)
Constant	0.0686	1.259	-0.0531	-0.744
	(0.0673)	(0.815)	(0.0635)	(0.865)
Acquirer Controls	Yes	Yes	No	No
Target Controls	No	No	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes	Yes
Observations	170	255	111	255
R-squared	0.047	0.046	0.063	0.051

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A7: Functional Form CARs Using Rating Categories

Table A7 reports functional models for Cumulative Abnormal Returns (CARs) before merger announcement for the acquirer and the target in the 255 actual deals in the sample. The dependent variable is CAR one month (column (1)) and one year (column (2)) before merger announcement date for acquirer and one month (column (3)) and one year (column (4)) before merger announcement date for target. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with individual mean and standard deviation of acquirer ratings (columns (Panel A) and individual mean and standard deviation of target ratings (Panel B) and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Acquirer CARs

	Acquirer CARs in [-21, -4] Event Window Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	-0.0325					
	(0.0392)					
CO_Mean_Sqrd_Acq	0.00141					
	(0.00739)					
CO_SD_Acq	0.0915					
	(0.0624)					
CO_SD_Sqrd_Acq	-0.0590					
	(0.0414)					
CB_Mean_Acq		0.0417				
		(0.0351)				
CB_Mean_Sqrd_Acq		-0.00941				
		(0.00750)				
CB_SD_Acq		0.132				
		(0.0892)				
CB_SD_Sqrd_Acq		**-0.122****				
		(0.0536)				
CV_Mean_Acq			-0.0158			
			(0.0461)			
CV_Mean_Sqrd_Acq			0.00176			
			(0.00975)			
CV_SD_Acq			0.0986			
			(0.0814)			
CV_SD_Sqrd_Acq			**-0.0673***			
			(0.0400)			
SL_Mean_Acq				0.0420		
				(0.0389)		
SL_SD_Acq				-0.00990		
				(0.00864)		
SL_Mean_Sqrd_Acq				0.0401		
				(0.0878)		
SL_SD_Sqrd_Acq				-0.0382		
				(0.0504)		
WL_Mean_Acq					0.0282	
					(0.0408)	
WL_SD_Acq					-0.00559	
					(0.00856)	
WL_Mean_Sqrd_Acq					0.0775	
					(0.0817)	
WL_SD_Sqrd_Acq					-0.0670	
					(0.0458)	
OR_Mean_Acq						0.0439
						(0.0374)
OR_SD_Acq						-0.0108
						(0.00805)
OR_Mean_Sqrd_Acq						0.0633
						(0.0824)
OR_SD_Sqrd_Acq						-0.0556
						(0.0461)
Constant	0.179**	0.0985*	0.0977	0.0981	0.0996*	0.104*
	(0.0775)	(0.0586)	(0.0594)	(0.0601)	(0.0596)	(0.0599)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	No	No	No	No	No	No
Industry and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	164	164	141	164	164	170
R-squared	0.060	0.074	0.057	0.048	0.053	0.054

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B. Target CARs

	Target CARs in [-21, -4] Event Window Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	-0.00282					
	(0.0278)					
CO_Mean_Sqrd_T	-0.000403					
	(0.00533)					
CO_SD_T	**-0.0885****					
	(0.0422)					
CO_SD_Sqrd_T	**0.0649*****					
	(0.0241)					
CB_Mean_T		0.0255				
		(0.0261)				
CB_Mean_Sqrd_T		-0.00560				
		(0.00583)				
CB_SD_T		-0.0950				
		(0.0670)				
CB_SD_Sqrd_T		**0.0756***				
		(0.0427)				
CV_Mean_T			0.0205			
			(0.0349)			
CV_Mean_Sqrd_T			-0.00611			
			(0.00757)			
CV_SD_T			0.0108			
			(0.0583)			
CV_SD_Sqrd_T			0.00979			
			(0.0257)			
SL_Mean_T				0.0118		
				(0.0283)		
SL_SD_T				-0.00201		
				(0.00633)		
SL_Mean_Sqrd_T				**-0.145*****		
				(0.0538)		
SL_SD_Sqrd_T				**0.0878*****		
				(0.0257)		
WL_Mean_T					0.0118	
					(0.0210)	
WL_SD_T					-0.00361	
					(0.00499)	
WL_Mean_Sqrd_T					**-0.0939***	
					(0.0518)	
WL_SD_Sqrd_T					**0.0681****	
					(0.0332)	
OR_Mean_T						-0.00423
						(0.0266)
OR_SD_T						0.000217
						(0.00597)
OR_Mean_Sqrd_T						-0.0691
						(0.0519)
OR_SD_Sqrd_T						**0.0565****
						(0.0261)
Constant	-0.0327	-0.0604	-0.128**	-0.131***	-0.107**	-0.115**
	(0.0535)	(0.0426)	(0.0505)	(0.0504)	(0.0508)	(0.0506)
Acquirer Controls	No	No	No	No	No	No
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	106	106	94	106	106	111
R-squared	0.058	0.043	0.071	0.094	0.066	0.073

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A8: Cumulative Abnormal Returns with Inverse Mills Ratio from Heckman Two-Stage Regression

Table A8 reports models for Cumulative Abnormal Returns (CARs) around merger announcement date for the 255 actual deals in the sample. The dependent variable is CAR in the 3, 7, and 11 days around the merger announcement date, as indicated in the table labels. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with cosine similarity as the main variable of interest and inclusion of Inverse Mills ratio from two-stage Heckman model estimated from probability with pseudo matched sample (columns (1), (2), and (3) in Panel A) and Inverse Mills ratio from two-stage Heckman model estimated from likelihood with uncompleted deal sample (columns (4), (5), and (6) in Panel B) and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values (they are included in the regressions but are not presented in the paper). Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Inverse Mills from Probability with Pseudo-Matched Sample

	CARs		
	[-1, +1] Event Window	**[-3, +3] Event Window**	**[-5, +5] Event Window**
	(1)	**(2)**	**(3)**
Morale_Sim	**0.102***	0.0678	0.0270
	(0.0557)	(0.0718)	(0.0879)
Inverse_Mills	-0.00302	-0.00225	-0.00261
	(0.00265)	(0.00338)	(0.00368)
Constant	-0.0764	-0.0958	-0.0510
	(0.0678)	(0.0822)	(0.107)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.546	0.495	0.498

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Inverse Mills from Likelihood with Uncompleted Deal Sample

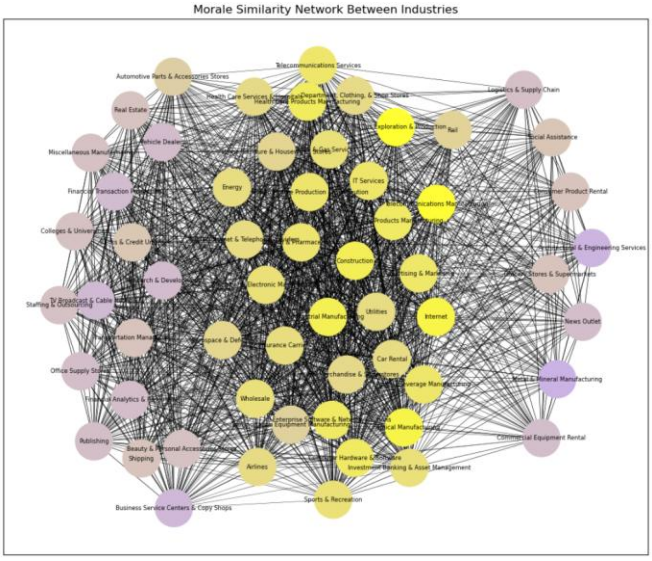
(*Table A8 Continued*)	**CARs**		
	[-1, +1] Event Window (4)	**[-3, +3] Event Window (5)**	**[-5, +5] Event Window (6)**
Morale_Sim	**0.135*** **	0.0926	0.0554
	(0.0419)	(0.0572)	(0.0731)
Inverse_Mills	0.0108	0.00864	0.00930
	(0.0171)	(0.0164)	(0.0159)
Constant	**-0.120** **	**-0.128***	-0.0884
	(0.0557)	**(0.0662)**	(0.0948)
Merged Firm Controls	Yes	Yes	Yes
Industry and Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.539	0.492	0.494

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

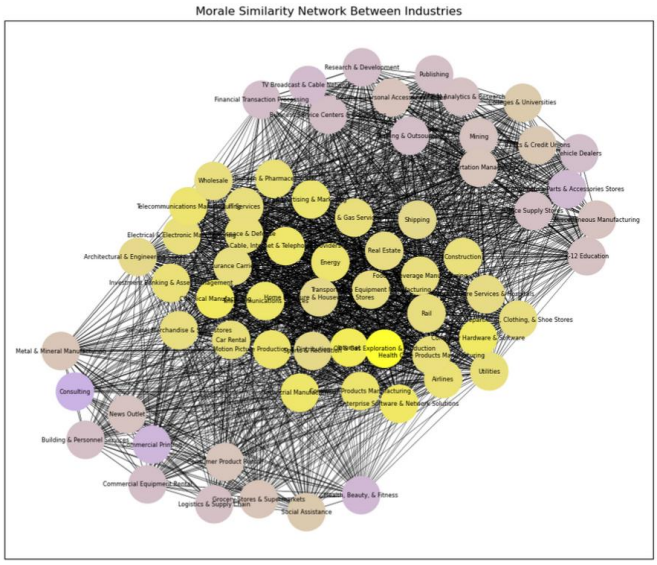
Figure A2: Morale Similarity Network Between Industries

Figure A2 represents the Morale Similarity Network between industries based on the management sample (Panel A consisting of 8,213 observations for before and after the merger) and the rank-and-file employee sample (Panel B of 41,257 observations for before and after the merger). The network is constructed so that included industries are connected if their morale values are more than zero percent similar. Each node represents an industry in either sample. The size of the node is uniform, and the color represents the average morale of that industry. Yellow nodes indicate industries with higher morale, while purple nodes indicate industries with lower morale. Edges represent similarity between industries' morale values. The thickness of the edges indicates the strength of similarity. Thicker edges represent stronger similarities between the industries' morale values. The network exhibits a tight clustering of industries with similar morale values (dense central cluster of yellow nodes), while lower morale industries (purple nodes) also exhibit clustering but are located more towards the periphery of the network

<u>Panel A. Management Sample</u>



Panel B. Full Sample



Emotional Contagion Model

I introduce an emotional contagion model that connects employee psychology to financial outcomes. I build the model based upon several strands of literature – organizational identity and productivity, belief transmission and leadership effects, and matching in mergers. Organizational economists have established strong connections between employee identity and productivity outcomes. Akerlof and Kranton (2005) document that workers' sense of identity significantly influences their economic behaviors, with employees who strongly identify with their organization internalizing its goals and exerting greater effort without monetary incentives. Crémer (1993) establishes that shared organizational culture facilitates coordination among employees, showing that cultural proximity significantly reduces integration costs following organizational changes.

Studies on leadership's role in organizational culture highlight the importance of management during transitions. Hermalin (2013) documents that leadership significantly influences culture, showing that leadership transitions often create cultural shifts throughout organizations as leaders shape culture through both actions and symbolic behaviors. Leadership's influence on organizational culture aligns with research on belief transmission and attitude diffusion. Just as Bénabou and Tirole (2016) demonstrate how beliefs diffuse through social interactions, and Acemoglu et al. (2011) model how attitudes diffuse through networks with similarity, Hermalin's work suggests leaders serve as critical nodes in these transmission networks, with their attitudes and behaviors influencing the spread of cultural elements throughout the organization.

Research on merger dynamics has revealed important patterns in how firms select targets in mergers. Rhodes-Kropf and Robinson (2008) present evidence that mergers tend to occur between firms with similar asset structures, finding this assortative matching happens because similar firms can more effectively integrate operations. My model extends this finding by identifying employee morale as a specific asset that drives matching decisions. While previous research focuses primarily on tangible assets, my approach highlights intangible human capital as a determinant of merger patterns, establishing employee morale similarity as a predictor of merger likelihood and post-merger performance.

The emotional contagion model synthesizes these research streams by providing a mathematical framework that quantifies how employee morale similarity affects merger selection, introduces the transmission mechanism of attitudes between organizations, and predicts how post-merger morale impacts financial outcomes.

I introduce three agents in the model – acquiring company (1), target company (2), and employees (3). Acquirer A decides whether to acquire target T. The set of Targets $T_i, i \in \{1, \dots, N\}$ are firms that differ in employee morale M_i and synergy potential β_i. Employees in the model are workers in the acquiring and target firms whose morale influences productivity. The interaction between acquiring and target firms creates a strategic environment where morale not only influences firm

value but also affects integration efficiency after the merger. This motivates me to consider employee morale's effect on the target selection process and post-merger outcomes.

I. Pre-Merger Productivity

Each target firm T_i has (1) morale level M_i, where $M_i \in [0,1]$, and (2) pre-merger productivity:

$$(1)\ P_{T_i} = P_0\ (1 + \alpha M_i),$$

where P_0 is base productivity and α captures how morale affects productivity. If a target firm has high morale, the model assumes that productivity will be enhanced, which makes them more attractive targets. This also increases the targets' bargaining power in setting acquisition costs.

II. Post-Merger Productivity

If a target is acquired, productivity depends on both target and acquirer morale:

$$(2)\ P_{A+T_i} = \beta_i P_0(1 + \alpha M_i + \lambda M_A),$$

where β_i is the synergy factor, λ captures morale contagion from target to acquirer, and M_A is the acquirer's initial morale. The concept of morale contagion is drawn from social psychology and management literature (Barsade et al., 2018; Barsade and O'Neill, 2016; Barsade et al., 2019; Barsade and Ozcelik, 2018; Barsade and Knight, 2015), which suggests that employees' attitudes can spread across various departments in an organization and across various organizations. This can be particularly crucial in M&A integration. Understanding how morale transmits from target to acquiring company is important for computing long-term post-merger outcomes. In cases where the morale between two organizations is similar, post-merger morale might stabilize faster, leading to higher synergies.

III. Acquisition Cost C_i

I assume that higher morale targets command higher acquisition premiums. Given that acquirers compete for high morale targets, acquiring companies need to weigh the trade-off between paying a higher premium (C_i) for a high morale target and the expected long-term productivity potential to be achieved.

IV. The Acquisition Decision with Morale Similarity

The acquiring company considers employee morale as part of their target selection criteria. The acquirer chooses the target that maximizes post-merger profit net of the acquisition cost:

$$(3)\ \pi_{A+T_i} = \beta_i P_0(1 + \alpha M_i + \lambda M_A) - C_i.$$

A target is acquired if:

$$(4)\ \beta_i P_0(1 + \alpha M_i + \lambda M_A) \geq C_i.$$

Rearranging, we get the following required threshold:

$$(5)\ M_i^* \geq \frac{\frac{C_i}{\beta_i P_0} - \lambda M_A}{\alpha},$$

Based on the required threshold, (1) higher acquirer morale reduces the required threshold for the target, (2) higher acquisition costs C_i increases the target morale threshold, (3) synergy effects β_i lower the threshold, making more targets viable for acquisition.

I introduce morale similarity $S(M_A, M_i)$ to refine the acquirer's target selection decision:

$$(6)\ S(M_A, M_i) = e^{-\delta|M_A - M_i|},$$

where $\delta > 0$ determines how much more dissimilarity affects the acquisition likelihood. If the morale of the acquiring company and the morale of the target company are the same, morale similarity will be equal to 1 ($S = 1$). If the morale of the acquiring company and the morale of the target company are far apart ($S \approx 0$), discouraging the merger.

V. Adjusted Acquisition Condition

Now, the acquisition probability depends on similarity:

$$(7)\ P(Acquisition) = S(M_A, M_i)\ x1(M_i \geq M_i^*),$$

where 1(.) is an indicator function that takes value of 1 if morale meets the threshold, and 0, otherwise.

Lemma 1: Existence of a morale threshold for acquisition

Statement: For any target firm T, there exists a unique threshold M^* such that the firm is acquired if and only if:

$$(8)\ M_i \geq M_i^* = \frac{C_i}{\beta_i P_0} - 1 - \lambda M_A.$$

Proof:

i. The acquirer maximizes post-merger profit is $\pi_{A+T_i} = \beta_i P_0(1 + \alpha M_i + \lambda M_A) - C_i$.
ii. The firm is acquired if $\pi_{A+T_i} \geq 0$, which simplifies to $\beta_i P_0(1 + \alpha M_i + \lambda M_A) \geq C_i$.
iii. Solving for M_i, we obtain the following equation $M_i^* = \frac{C_i}{\beta_i P_0} - 1 - \lambda M_A$.

Since $M_i \epsilon [0,1]$ acquisition occurs if and only if $M_i \geq M_i^*$, which proves existence of a morale threshold. This threshold is determined by acquisition costs and the acquirer's existing morale level.

Lemma 2: Morale similarity increases merger probability

Statement: The probability of acquisition increases with morale similarity given by

$$(9)\ S(M_A, M_i) = e^{-\delta|M_A - M_i|},$$

where $\delta > 0$ is the dissimilarity penalty.

Proof:

i. The acquisition probability is $P(Acquisition) = S(M_A, M_i)\ x1(Mi \geq M_i^*)$.
ii. Since $S(M_A, M_i) = e^{-\delta|M_A - M_i|}$, it is decreasing in $|M_A - M_i|$.

iii. If $M_A = M_i$, then $S = 1$, maximizing $P(Acquisition)$.
iv. If M_i deviates from M_A, then $S \to 0$, reducing the probability of acquisition.

Thus, acquisition probability is maximized when $M_A \approx M_i$, proving the lemma. This proves the importance of alignment between acquirer and target morale.

VI. Post-Merger Morale Transmission – Termed as Emotional Contagion

Target morale spreads to the acquirer post-merger. I model post-merger acquirer morale as:

$$(10)\ M_A' = M_A + \rho(M_i - M_A),$$

where $\rho \in (0,1)$ is the morale contagion parameter.

- If $M_i > M_A$, acquirer morale improves.
- If $M_i < M_A$, acquirer morale declines.

If ρ is large, target morale has a significant impact on acquirer morale. Thus, a high-morale target benefits a low-morale acquirer, but a low-morale target morale can hurt the acquirer morale.

Lemma 3: Post-merger morale converges to a stable value

Statement: Post-merger acquirer morale evolves according to

$$(11)\ M_A' = M_A + \rho(M_i - M_A),$$

and converges to a stable value if $0 < \rho < 1$.

Proof:

i. Define the morale adjustment equation as $\triangle M_A = M_A' - M_A = \rho(M_i - M_A)$.
ii. The system is stable if morale updates tend toward a fixed point M_A^*.
iii. Since $|\rho(M_i - M_A)| < |M_i - M_A|$ for $0 < \rho < 1$, it follows that $M_A' \to M_A^*$ as iterations progress.

This ensures that post-merger morale does not oscillate indefinitely and stabilizes, avoiding integration challenges.

VII. Equilibrium

A subgame perfect Nash equilibrium in this model consists of:

- An acquirer's strategy: Choosing a target firm that maximizes its expected post-merger value.
- A target firm's morale and productivity function which influence its likelihood of acquisition.
- A post-merger morale function that updates employee morale after the acquisition.

In equilibrium, a target is acquired if and only if they meet both the morale threshold and the cost considerations described above.

In equilibrium, the acquirer selects a target T^* that maximizes post-merger profits:

$$(12)\ T^* = argmax\{\beta_i P_0(1 + \alpha M_i + \lambda M_A) - C_i\},$$

A target firm is acquired if:

$$(13)\ \beta_i P_0(1 + \alpha M_i + \lambda M_A) \geq C_i.$$

I solve for the required morale threshold in the following way:

$$(14)\ M_i^* = \frac{\frac{C_i}{\beta_i P_0} - 1 - \lambda M_A}{\alpha},$$

where a firm with $M_i \geq M_i^*$ is acquired and a firm with $M_i < M_i^*$ is not acquired.

Since firms cannot directly control their morale but can influence productivity, the observed distribution of morale determines which firms are viable acquisition targets.

After the acquisition, morale contagion affects the acquirer's workforce:

$$(15)\ M_A' = M_A + \rho(M_i - M_A).$$

I expect that if morale contagion is large, target morale has a significant effect on acquirer morale:

- If $M_i > M_A$ (high-morale target), then $M_A' > M_A$.
- If $M_i < M_A$ (low-morale target), then $M_A' < M_A$.

An M&A equilibrium is stable if:

- The acquirer does not regret its selection: $\beta_i P_0(1 + \alpha M_i + \lambda M_A) - C_i \geq 0$.
- The employee's morale stabilizes post-merger: $M_A' - M_A \leq \varepsilon$, where ε is a small adjustment threshold.

If morale fluctuates too much, integration problems arise, leading to merger failure. Such mergers experience excessive morale shifts post-merger leading to cultural misalignment and productivity losses. If morale stabilizes, the merger is successful.

Lemma 4: Higher acquisition costs reduce target selection

Statement: If acquisition costs C_i increase, the threshold morale M_i^* increases, reducing the number of firms acquired.

Proof:

i. From Lemma 1, the acquisition threshold is $M_i^* = \frac{\frac{C_i}{\beta_i P_0} - 1 - \lambda M_A}{\alpha}$.

ii. Taking the derivative with respect to C_i, we get the following $\frac{\partial M_i^*}{\partial C_i} = \frac{1}{\beta_i P_0} > 0$.

iii. Since $\frac{\partial M_i^*}{\partial C_i} > 0$, higher acquisition costs increase the morale threshold.

iv. As a result, fewer firms meet the requirement $M_i \geq M_i^*$, reducing acquisitions.

The lemma defines the negative relationship between acquisition costs and the number of selected targets.

The interaction of morale thresholds, acquisition costs, and morale contagion form the theoretical predictions in the employee morale contagion model.

The model serves as a theoretical foundation for our empirical investigation, explaining the mechanisms through which employee morale affects merger likelihood and post-merger performance. Thus, we bridge psychological insights about emotional contagion with an economic analysis of corporate mergers.

Variable Definitions

Variable	Definition
Morale_Sim	The Jaffe (1996) distance between the acquirer's and target's Glassdoor ratings based on the different rating subcategories over the year before the merger, which is equivalent to cosine similarity, or as indicated in the paper as morale similarity.
High_Morale_Sim	1 if cosine similarity falls in the highest decile of the measure, and 0 otherwise.
Low_Morale_Sim	1 if cosine similarity falls in the lowest decile of the measure, and 0 otherwise.
Mean_Acq	The average of the sum of aggregated acquirer rating subcategories, or the average of individual rating subcategories one year before or one month before the merger announcement, which is used as a proxy for acquirer's employee morale average.
SD_Acq	The variation or dispersion of aggregated acquirer rating subcategories, or the variation or dispersion of individual rating subcategories one year before or one month before merger announcement, which is used as a proxy for acquirer's employee morale variability.
Mean_T	The average of the sum of aggregated target rating subcategories, or the average of individual rating subcategories one year before or one month before merger announcement, which is used as a proxy for target's employee morale average.
SD_T	The variation or dispersion of aggregated target rating subcategories, or the variation or dispersion of individual rating subcategories one year before or one month before merger announcement, which is used as a proxy for target's employee morale variability.
High_High_Mean	1 if both acquirer and target means fall in the highest quartiles of the respective measures, and 0 otherwise.
High_Low_Mean	1 if the acquirer mean falls in the highest quartile of the measure and if the target mean falls in the lowest quartile of the measure, and 0 otherwise.

Low_High_Mean	1 if the acquirer mean falls in the lowest quartile of the measure and if the target mean falls in the highest quartile of the measure, and 0 otherwise.
Low_Low_Mean	1 if the acquirer mean falls in the lowest quartile of the measure and if the target mean falls in the lowest quartile of the measure, and 0 otherwise.
Same_Industry	1 if the acquirer and the target firm operate in the same 2-digit SIC industries, and 0 otherwise.
Same_State	1 if the acquirer and the target firm are headquartered in the same state, and 0 otherwise.
High_Tech	1 if the acquirer and the target firm operate in high-tech industries, and 0 otherwise.
All_Cash	1 if the deal is finance by cash only, and 0 otherwise.
Tender_Offer	1 if the merger is a tender offer, and 0 otherwise.
Relative_Size	Deal value divided by the market capitalization of the acquirer.
BTM	Combined acquirer and target book value of equity divided by combined acquirer and target market value of equity in the year before the deal announcement.
Book_Leverage	Combined acquirer and target book value of debt (including short-term liabilities and long-term debt) divided by combined acquirer and target book value of total assets in the year before the deal announcement.
Cash	Combined acquirer and target cash and short-term investments divided by combined acquirer and target book value of total assets in the year before the deal announcement.
Size	Natural logarithm of combined acquirer and target book value of assets.
Cultural_Sim	Cultural similarity as defined in Bereskin et al. (2018) using Refinitiv acquiring and target companies' ESG scores.
Product_Sim	Product similarity as defined in Hoberg and Phillips (2010) and equal to 1 if acquirer and target are in the same industry based on product descriptions.
ROA_Acq	Acquirer earnings before interest, taxes, depreciation, and amortization (EBITDA)

	divided by acquirer book value of total assets in the year before the deal announcement.
Sale_Growth_Acq	Natural logarithm of current year's acquirer sales divided by previous year's acquirer sales.
Cash_Acq	Acquirer cash and short-term investments divided by the acquirer book value of total assets in the year before the deal announcement.
Book_Leverage_Acq	Acquirer book value of debt (sum of current liabilities and long-term debt) divided by acquirer book value of total assets in the year before the deal announcement.
RDA_Acq	Acquirer research and development (R&D) expenditure divided by acquirer book value of total assets in the year before for the deal announcement.
BTM_Acq	Acquirer book value of equity divided by acquirer market value of equity in the year before the deal announcement.
ROA_T	Target earnings before interest, taxes, depreciation, and amortization (EBITDA) divided by target book value of total assets in the year before the deal announcement.
Sale_Growth_T	Natural logarithm of current year's target sales divided by previous year's target sales.
Cash_T	Target cash and short-term investments divided by the target book value of total assets in the year before the deal announcement.
Book_Leverage_T	Target book value of debt (sum of current liabilities and long-term debt) divided by target book value of total assets in the year before the deal announcement.
RDA_T	Target research and development (R&D) expenditure divided by target book value of total assets in the year before for the deal announcement.
BTM_T	Target book value of equity divided by target market value of equity in the year before the deal announcement.
Sim_Pros	Cosine similarity between acquirer and target pros sections in Glassdoor in the year before the deal announcement.
Sim_Cons	Cosine similarity between acquirer and target cons sections in Glassdoor in the year before the deal announcement.

Sim_Feedback	Cosine similarity between acquirer and target feedback sections in Glassdoor in the year before the deal announcement.
CO_Mean_Acq	Average of acquirer career opportunities ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CO_SD_Acq	Variability of acquirer career opportunities ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CB_Mean_Acq	Average of acquirer compensation benefits ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CB_SD_Acq	Variability of acquirer compensation benefits ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CV_Mean_Acq	Average of acquirer culture values ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CV_SD_Acq	Variability of acquirer culture values ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
SL_Mean_Acq	Average of acquirer senior leadership ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
SL_SD_Acq	Variability of acquirer senior leadership ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
WL_Mean_Acq	Average of acquirer work-life balance ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
WL_SD_Acq	Variability of acquirer work-life balance ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
OR_Mean_Acq	Average of acquirer overall rating ratings as provided in Glassdoor in the year or month before the deal announcement.

OR_SD_Acq	Average of acquirer overall rating ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CO_Mean_T	Average of target career opportunities ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CO_SD_T	Variability of target career opportunities ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CB_Mean_T	Average of target compensation benefits ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CB_SD_T	Variability of target compensation benefits ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CV_Mean_T	Average of target culture values ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
CV_SD_T	Variability of target culture values ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
SL_Mean_T	Average of target senior leadership ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
SL_SD_T	Variability of target senior leadership ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
WL_Mean_T	Average of target work-life balance ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
WL_SD_T	Variability of target work-life balance ratings as provided in Glassdoor in the year or month before the deal announcement (based on the test conducted).
OR_Mean_T	Average of target overall rating ratings as provided in Glassdoor in the year or month

	before the deal announcement.
OR_SD_T	Variability of target overall rating ratings as provided in Glassdoor in the year or month before the deal announcement.
Raw_Difference_Mean_Acq_T	Raw difference between mean acquirer ratings and mean target ratings from the year before the deal announcement to the year of the deal announcement.
Raw_Difference_Mean_Acq	Raw difference between mean acquirer ratings from the year of the deal announcement to the year of the deal announcement.
Abs_Difference_Mean_Acq_T	Absolute difference between mean acquirer and mean target ratings from the year before the deal announcement to the year of the deal announcement.
Abs_Difference_Mean_Acq	Absolute difference between mean acquirer ratings from the year of the deal announcement to the year of the deal announcement.
Temperature	Difference between the maximum and minimum temperatures at the acquiring company's headquarters on the deal announcement date.
Inverse_Mills	Second-stage inverse Mills ratio from the first-stage probit.
Mean_Acq_Individual	Aggregated mean of rating categories based on individual employees in acquirers.
Mean_T_Individual	Aggregated mean of rating categories based on individual employees in targets.
Pros_Acq_Individual	Pros reviews of individual employees in acquirers.
Cons_Acq_Individual	Cons reviews of individual employees in acquirers.
Feedback_Acq_Individual	Feedback reviews of individual employees in acquirers.
Pros_T_Individual	Pros reviews of individual employees in targets.
Cons_T_Individual	Cons reviews of individual employees in targets.
Feedback_T_Individual	Feedback reviews of individual employees in targets.
Mean_Acq_FullSample	Aggregated mean of rating categories based on the full sample of acquiring companies.
Mean_Acq_Management	Aggregated mean of rating categories based on the management sample of acquiring companies.

Mean_Acq_RankFile	Aggregated mean of rating categories based on the rank-and-file employee sample of acquiring companies.
Mean_T_FullSample	Aggregated mean of rating categories based on the full sample of target companies.
Mean_T_Sq_FullSample	The squared aggregated mean of rating categories based on targets' full sample.
Mean_T_Management	Aggregated mean of rating categories based on the management sample of acquiring companies.
Mean_T_Sq_Management	The squared aggregated mean of rating categories based on targets' management sample.
Mean_T_RankFile	Aggregated mean of rating categories based on the rank-and-file employee sample of acquiring companies.
Mean_T_Sq_RankFile	The squared aggregated mean of rating categories based on targets' rank-and-file employee sample.