Innovation Similarity and Post-Merger Innovation Outcomes: A Labor Perspective*

Hongrui Feng
Pepperdine University
hongrui.feng@pepperdine.edu

Wanli Zhao
Bocconi University
wanli.zhao@unibocconi.it

Yuri Zhu
Case Western Reserve University
yuri.zhu92@gmail.com

Abstract

We document that higher innovation similarity between the acquirer and the target results in lower post-merger innovation quality. Exploring the labor channel for explanation, we show that such deals depress employee satisfaction across domains, consistent with the notion that labor redundancy lowers human-capital productivity and disrupts cultural integration. Using the removal of non-compete agreements as an exogenous employee mobility shock as identification confirms that increased employee mobility mitigates the negative effect of innovation similarity on employee satisfaction. Further tests indicate that pairs with high technology overlap but low product overlap suffer the sharpest post-merger declines, consistent with limited product synergies and redundant production know-how that raise integration costs. We further find that the employee dissatisfaction concentrates among departed employees, senior staff, R&D personnel, and target-firm employees. Our results are not explained by technological overlap (Bena and Li, 2014) or by pre-existing corporate innovation culture (Li et al., 2021), indicating that innovation similarity captures a distinct cultural friction with post-merger consequences.

1. Introduction

Synergy is probably the most commonly cited reason for M&A and a crucial foundation for achieving long-term performance goals. One major impediment for generating synergy is misalignment in operational compatibility between the acquirer and the target. According to a recent survey by Graham et al. (2022a), 48% of executives indicate that they view misalignment in operational compatibility as a deal-breaker, while an additional 28% of executives would accept a price discount because of that. Likewise, operational compatibility is commonly cited by executives as a primary consideration when evaluating potential M&A.

A natural question is whether similarity in operational management between acquirer and target can be taken as synonymous with post-merger operational compatibility. Evidence on whether such similarity translates into post-merger success remains mixed. Both theoretical and empirical studies provide mixed evidence regarding the effects of operational management similarity on the likelihood of M&A activity, as well as on post-merger integration and long-term performance (e.g., Cartwright and Cooper, 1993a; Van den Steen, 2010a). One reason is that "operational management" is multi-dimensional; common proxies bundle disparate firm attributes - some irrelevant to M&A outcomes, others pulling in opposite directions. In light of this, Grennan and Li (2023a) suggest that focusing on specific elements, such as innovation, and isolating the effect of operational management elements can enhance our understanding of the complex nature of operational management effect.[1]

This study examines the impact of corporate innovation on post-merger innovation outcomes and focuses on the employee satisfaction channel in the context of M&A. To better understand the synergistic effect between the target and acquirer, we choose to study the pairwise similarity in corporate innovation rather than focusing on the level of corporate innovation (Li et al., 2021).

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[1] Guiso et al. (2015) define corporate culture as a set of "principles and values that should inform the behavior of all the firms' employees", indicating corporate culture has a prominent influence on the employees. The organizational behavior literature conjectures corporate culture affects both individual and group behavior in an organization.

To build upon the growing body of academic research on the role of human capital in enhancing firm performance, we examine the effect of post-merger operational compatibility on employee satisfaction. We shed light on how pairwise innovation similarity influences post-merger innovation outcomes through its impact on employees. In doing so, we demonstrate how these effects play a crucial role in the long-term success of mergers, offering valuable insights into the importance of human capital in driving merger outcomes.

We choose to approach our research question empirically by focusing on innovation, operationalizing it through the measurement of pairwise similarity between the acquirer and target. First, recently technology-based M&As become more prominent as innovation is the key driver for economic growth and maintaining competitive advantage for the firm (Aghion and Howitt, 1992; Rosenberg, 2004; Acemoglu, 2008). Second, prior studies indicate that employees' recognition and identification with the firm shape behavior by coordinating and facilitating cooperation when formal contracts are impractical or prohibitively costly (e.g., Schein, 1985; Kreps, 1990; Lazear, 1995; Akerlof and Kranton, 2005; Van den Steen, 2010b). We posit that because innovation and R&D activity are associated with greater information asymmetry and uncertainty (Aboody and Lev, 2000), compatibility in innovation is pivotal to the combined firm and its employees. Firms constantly innovate to develop new products, differentiate their products from the competition, or renovate their process to improve efficiency, resulting in time-series variations in information asymmetry. In contrast, because a firm's operational management and culture are deeply embedded and develop over long horizons, the four aspects identified by Li et al. (2021) - integrity, quality, respect, and teamwork - are not only more stable than the firm's innovation activities but also more readily safeguarded through formal contracts.

We capture the innovation similarity via managerial conference call discussions, focusing on the discussions about corporate innovation activities to mitigate the concern that the overall disclosure in 10-K or conference calls contain many other non-innovation related information and result in measurement error of the variable. In addition, the format of Q&A in conference calls

reduce boilerplate language that is prevalent in required regulatory disclosure such as 10-K. Further, as innovation is a key driver for firm's growth and maintaining the competitive advantage over rival firms, mandatory disclosure such as 10-K is unlikely to contain more than necessary information about innovation because the proprietary cost of such disclosure is likely to be high.[2]

To capture employee satisfaction, we use crowdsourced employee satisfaction measures from Glassdoor (Green et al., 2019a; Huang and Li, 2020a). These voluntary reviews include both numerical ratings and optional open-ended comments. The numerical scores feature an overall satisfaction rating, along with individual ratings across several dimensions, such as career opportunities, compensation and benefits, work-life balance, senior management, and corporate culture and values. Since reviews are anonymous and voluntary, employees have little incentive to inflate their ratings. Glassdoor actively prevents fake accounts, disallows reviews from non-employees, and restricts multiple reviews from the same individual within a year.

We obtain our M&A sample from SDC database for the period between 2009 and 2024. We require that the Glassdoor ratings data for the acquirer and the target firm are available for the 3-year window before and after the announcement of the merger. We restrict the sample of mergers to completed majority acquisitions with a public acquirer, a public target, and with an available deal value data. In addition, our sampling is restricted to acquirer and target firms that have quarterly conference call transcripts for 3 years prior to the deal announcement. Understandably not all conference calls contain discussions about innovation while we require such discussions to capture

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[2] Recent studies explore conference call discussions to capture firm's political risk (Gad et al., 2024), climate change exposure (Sautner et al., 2023), managerial short-termism (Brochet, Loumioti, and Serafeim, 2015), indicating that managers pay attention to their way of communications during conference calls. Call et al. (2024) suggest that managers use humor to mitigate market perception of negative earnings news. Baik et al. (2024) documents that managers twist the vocal delivery quality of their conference call answers to lower the attention on bad news, suggesting that conference call is a crucial venue for information dissimilation. Gow, Larcker, and Zakolyukina (2021) and Hollander, Pronk, and Roelofsen (2010) find that managers use no-answer to avoid disclosing negative news or proprietary information during conference calls, and this phenomenon is relatively stable across different industries and over time. Lee (2016) documents that market react negatively to managers' pre-determined answer to questions about future performance in conference calls. Dasgupta et al. (2024) suggest that managers use conference call discussions as an important information dissimilation channel about M&A deals. Hassan et al. (2019) highlight that managerial discussion about political risk in conference calls captures firm's political activities such as lobbying and political donation. Therefore, the way managers communicate during conference calls not only influences the dissemination of information and market reactions but may also play a crucial role in the integration of culture and innovation strategies during M&A processes.

firm's innovation strategy, which further restricts our sample of mergers. Our final sample consists of 313 completed acquisitions.

For each pair of mergers, we capture the innovation strategy similarity between the acquirer and the target firm based on their conference call transcripts where the discussions are focused on innovation activities. Specifically, the measure is the cosine similarity measure in textual analysis based on the discussions about innovations of both the acquirer and the target firms during the period of 3 years prior to the M&A.

We first show that when the acquirer and the target firm have similar innovation strategy, based on their innovation-related disclosure via conference call discussions, the quantity and quality of the innovation after the merger tend to deteriorate. We then explore the explanations for such outcome from the employee perspective, we find a universal decrease of employee satisfaction across a variety of topics, including their career development, personal benefits, perception of corporate culture, on the senior managers of the company, and on the work/life balance after the merger. These results indicate that innovation similarity between the acquirer and the target is a prominent factor that influence the deal outcome through the human capital channel. That is, the employees that are influenced by those mergers seem to suffer from the mergers and as a result the post-merger firm performance is compromised.

We note that we obtain these results after controlling for the corporate innovation similarity in Bena and Li (2014). Bena and Li (2014) capture the similarity in innovation activity between two firms via the overlapping of the technological classes among each firm's patents. We find that consistent with their finding that technological similarity is associated with better innovation performance afterwards. However, we do not observe that their measure is related to employee satisfaction and the firm performance metrics that capture employee productivity. Our innovation-similarity metric provides a comprehensive firm-level gauge that spans both technology and product overlap. While their measure focuses on the historical innovation activity embedded in granted patents, our measure assesses both backward similarity (reflecting previous innovation

themes) and forward similarity (anticipating or responding to innovations), systematically evaluating the innovation similarity between targets and acquirers. Furthermore, we also control for the corporate innovation culture measures developed in Li et al. (2021). We do not find corporate innovation culture of either the acquirer or the target firm have any effect on ex post innovation performance or the employee satisfaction afterwards. We interpret these findings showing that innovation similarity between the two firms seem to better capture the employee integration or communication involved in those mergers.

In our tests, we estimate a staggered difference-in-differences (DiD) model centered on each merger. For every acquirer, we retain the 3-year window around the completion year, yielding a symmetric seven-year window. The regression specification includes industry × year fixed effects (netting out industry-specific shocks and aggregate trends in each year). This staggered design identifies the average treatment effect under parallel trends within industry-year, addressing key endogeneity concerns related to stable firm attributes and contemporaneous industry cycles. We cluster standard errors at the firm-year level and report event-time coefficients to verify pre-trends and trace post-merger dynamics.

To further address endogeneity concern, we adopt a similar approach using the removal of non-compete agreement as the identification strategy. Specifically, non-compete agreement removal due to staggered state-level legislation change gives the employees more mobility in their career path. In the event of mergers, due to the expectation of employee layoff, removal of non-compete agreement in a state is expected to be more favorable to employees relative to similar mergers in another state with the agreement still effective. If the mergers with similar innovation culture result in cultural clashes and higher propensity of employee layoff, then we anticipate removal of non-compete agreement to mitigate such negative impact on the employees, other things equal. Given the legislation is at the state-level, it is likely to satisfy the exclusion condition that mergers in certain state do not influence the likelihood of the legislative change. The DiD test results indicate that the innovation similarity shows a negative and significant effect on employee

satisfaction while removal of non-compete agreement shows a mitigating effect of this negative impact. In contrast, we find that technological similarity between the two firms has no standalone or incremental effect on employee satisfaction after the removal of the non-compete agreement.

We extend our quantitative analysis by assessing changes in employee sentiment following mergers and acquisitions that involve firms with similar innovation profiles. To measure shifts in sentiment, we rely on the Loughran and McDonald (2011) approach. After the M&A event, we identify a noticeable reduction in the use of positive and tentative modal language in employee reviews. In contrast, there is a significant increase in negative, strong modal, litigious, constraining, and uncertainty-related terms. These results suggest that employee satisfaction at both the acquirer and target firms deteriorates as a result of the organizational and cultural adjustments required post-M&A, with competitive pressures exacerbated by the strategic alignment of innovation efforts between the two firms.

To facilitate the interpretation of and provide insights from our findings, we decompose similarity between the acquirer and the target firms. Corporate innovation activities encompass two distinct dimensions - product innovation and technological innovation (e.g., Bena et al. 2022a). Bena and Li (2014) suggest that technological overlap between the acquirer and the target facilitates synergy. On the other hand, high acquirer-target product portfolio overlap facilitates product-market synergies and economy of scale, mitigating integration frictions. To pinpoint which dimension drives our results, we decompose innovation similarity into (i) product-innovation similarity (overlap in product portfolios) and (ii) technological-innovation similarity (overlap in underlying production technologies). note that innovation similarity can stem from product innovation (overlapping product portfolios) or from underlying production technologies. It is noteworthy that we find that pairs with high technology overlap but low product overlap suffer the sharpest post-merger declines, consistent with limited product synergies and redundancy-driven integration frictions.

Furthermore, we find that the post-merger decline in employee satisfaction is most

pronounced when product overlap is low but technology overlap is high. Product overlap can generate near-term product-market synergies and economy of scale (shared distribution, bundling, cross-selling), which help offset integration frictions. By contrast, high technology overlap without product overlap primarily creates redundant production know-how, raising standardization and coordination costs and increasing the risk of workforce rationalization during integration. In short, it is the type of overlap that matters: product-side similarity mitigates the human-capital costs of M&A, whereas technology-side similarity without product complementarity amplifies them. In sum, both post-merger innovation outcomes and employee satisfaction deteriorate more. This pattern is consistent with limited product-market synergies and redundant production know-how that inflate integration and coordination costs (and increase the risk of workforce rationalization).

Our final set of tests explore cross-sectional variations of circumstances where we expect to observe differential effects between merger deals. Our first endeavor focuses on employees that depart from the company after the merger vs employees that still remain in the company. It would be interesting to compare these two groups because layoff is a usual mechanism that the claimed synergy is achieved. As such, employees that depart from the company contain the laid-off ones due to the merger and they would be expected to be more unsatisfied relative to remaining employees. To provide a clearer understanding of the evolvement of employee opinion, we also provide time-trend analysis between the two groups of employees for two reasons. First, employees who depart in the first year are more likely to leave due to the merger, while those who leave later may do so for other personal reasons. The change in the employee satisfaction of departing employees isolates the effect of the M&A deal. Second, we compare the differential change in employee satisfaction between the two groups as well as across the different topics could provide more interesting implications and enrich our understanding of this phenomenon. We observe the following. Departed employees seem to be more unsatisfied across all the categories due to innovation similarity than remaining employees.

Next, we first focus on the target firm employees because these employees are more likely to

be laid off than the acquirer firm employees after the merger. We find that as expected the target firm employees exhibit a much larger and negative reaction to mergers that have higher innovation similarity between the acquirer and the target. To the extent that target firm employees are more prone to layoff risk if the deal results in synergy through lowering redundancy in operations, our results suggest that the innovation technological overlapping does not explain such concern. We note that our measure of innovation similarity seems to capture such redundancy between the two firms that is associated with the target firm employee career concern.

Continuing on differentiating employees that may be influenced by the merger differently, our next test looks at senior and middle managers. These employees on the one hand may face higher career risk because laying off them are expected to generate higher cost saving benefit than lower-level employees. Their roles are more specialized and department-specific, may face greater uncertainty and difficulty in securing comparable positions elsewhere relative to other employees. On the other hand, senior and middle managers have more influence and are more directly involved in shaping corporate strategy and operations, suggesting that higher similarity between the deal firms is expected to have higher employee satisfaction among them. We find that innovation similarity results in lower satisfaction among the senior and middle managers, suggesting that the innovation similarity captures redundancy between the two firms that is perceived by high level employees as a threat to firm performance or their career development.

Last but not least, we focus on the research staff because they should be the most affected group of employees and also the cohort that are more knowledgeable about the effect of the merger on firm's innovation performance. We find similar results that R&D staff satisfaction is negatively influenced by the innovation similarity, consistent with the notion that similarity between the two firms captures their redundancy in innovation activity and result in potential decrease in R&D expenditure or research staffing. Interestingly we do not find that technological overlapping of their existing patents or their innovation culture explain such effect, indicating that R&D staff do not perceive these factors to affect their innovation activity or job satisfaction.

The evidence in this paper contributes to two strands of literature. First, we extend research on the effects of corporate operational compatibility in the context of mergers and acquisitions. Previous studies have primarily focused on the technological overlap between firms and its influence on merger formation (Bena and Li, 2014) and the impact of corporate culture on firm performance, including risk-taking and deal-making (Li et al., 2021). However, less is known about how innovation similarities between firms influence employee morale and perceptions post-merger. We contribute to this literature by showing that redundancy has a significant impact on employee morale, highlighting the importance of managing employee perception and satisfaction during M&A processes.

Second, we contribute to the literature on the determinants of M&A success and its implications for firm performance. Bereskin et al. (2018a) explore the role of cultural proximity between acquirers and targets in enhancing post-merger performance, with a particular focus on CSR policies. In contrast, our study examines innovation similarity, particularly through the lens of earnings conference calls, and its role in shaping the success of M&A transactions. By exploring this dimension, we provide new insights into how innovation similarities, rather than cultural factors alone, influence post-merger outcomes.

2. Literature Review

In the 1990s and 2000s, research moved beyond financial synergies to emphasize the operational management side of post-merger integration (PMI) - the compatibility of processes, routines, and product/technology architectures that determine how combined organizations actually work (Zollo and Singh, 2004; Puranam, Singh, and Zollo, 2006). Foundational accounts argued that value creation hinges on the *fit* between the required degree of interdependence and the chosen integration approach (Haspeslagh and Jemison, 1991). Subsequent studies showed that misalignment in operating routines and integration practices can impede PMI and depress long-run outcomes (Marks and Mirvis, 2001; Larsson and Finkelstein, 1999), while the redeployment of

resources and processes shapes post-merger productivity and employee outcomes (Capron, 1999).

Despite growing recognition of the operational channel, empirical findings on operational compatibility and M&A performance remain mixed. Some studies find that greater compatibility facilitates integration and improves performance (e.g., Bereskin et al., 2018b), whereas others argue that alignment on routines and structures is not sufficient given incentive frictions and competing integration demands (Van den Steen, 2010c; Zollo and Meier, 2008). Moreover, limited differences in operating practices can sometimes generate productive tension and learning benefits (Cartwright and Cooper, 1993b; Sarala et al., 2016). Studies like Bena and Li (2014) have emphasized technological similarity - reflected in overlapping patents and R&D activities - as predictive of merger success. However, Grennan and Li (2023b) caution against equating technological similarity with comprehensive operational compatibility. Our approach explicitly distinguishes product versus technology operational compatibility, allowing us to test which dimension drives post-merger innovation outcomes.

In modern innovation-driven sectors, human capital significantly influences operational alignment and sustainable innovation post-merger. Grossman and Hart (1986) and Hart and Moore (1990) argued that employee satisfaction during mergers is influenced by bargaining power dynamics. Employees' negotiation leverage, based on the perceived value of their human capital, affects their satisfaction levels. For example, redundancy threats diminish bargaining power and satisfaction, whereas complementary skills can enhance perceived value and employee morale (Tate and Yang, 2015). Fulghieri and Sevilir (2021) similarly observed that collaborative managerial potential in innovation-oriented mergers might counterbalance negative morale impacts, fostering positivity among employees.

Nevertheless, the precise effect of innovation alignment on employee satisfaction remains underexplored. Specifically, understanding how employees perceive innovation alignment between merging firms and its subsequent impact on their satisfaction is critical. Although previous research emphasizes technological similarity via patent overlap (Bena and Li, 2014), minimal attention has

been devoted to how managerial communication - such as conference call discussions - about innovation strategies influences employee satisfaction. Addressing this gap, this study investigates the role of innovation culture similarity in shaping post-merger employee satisfaction and performance outcomes.

In summary, existing literature highlights a nuanced relationship among corporate culture, innovation practices, and employee satisfaction in M&A settings. While operational compatibility facilitates integration, the specific influence of innovation alignment remains ambiguous. By examining how merging firms articulate their innovation strategies through managerial communications, this research contributes novel insights into the role of innovation alignment in enhancing employee satisfaction and determining overall merger success.

3. Sample Selection and Empirical Approach

3.1. *Glassdoor ratings as a measure of employee satisfaction*

To assess employee satisfaction, we rely on crowdsourced ratings from Glassdoor, following the methodologies established in accounting and finance literature (Green et al., 2019b; Huang and Li, 2020b). Glassdoor allows both current and former employees to evaluate companies across key dimensions such as work-life balance, compensation and benefits, career opportunities, senior management, and corporate culture and values. Additionally, respondents provide an overall satisfaction rating on a scale from one (Very Dissatisfied) to five (Very Satisfied).

One key advantage of Glassdoor data is its extensive sample size, providing self-reported satisfaction metrics for a wide range of firms. However, it's important to consider the quality of this data and whether it can be used as an unbiased measure of overall employee satisfaction. For instance, due to the anonymity of the ratings, companies may have incentives to submit inflated ratings using fake accounts, thereby skewing their overall score. Alternatively, employees dissatisfied with post-merger conditions may disproportionately leave negative reviews, which could bias satisfaction ratings downward.

Several features of Glassdoor help mitigate these potential biases. First, participation is voluntary and anonymous, which reduces the incentive for employees to manipulate ratings for personal gain. Second, Glassdoor enforces strict verification procedures, requiring users to confirm their identity via a personal email or social media accounts. The platform also uses a combination of algorithms and manual checks to detect and prevent fraudulent submissions. These measures help limit the possibility of companies inflating their ratings and reduce the involvement of non-employees.

Further supporting the credibility of Glassdoor ratings is the fact that the most common rating is three, indicating that respondents take the process seriously and avoid extremes. Empirical research also suggests that Glassdoor ratings align with other credible external evaluations. For example, satisfaction scores correlate positively with corporate social responsibility (CSR) scores and inclusion in Fortune's list of top employers (Green et al., 2019c). Additionally, Glassdoor's culture ratings closely match executive assessments of corporate culture, rather than the cultural values published on company websites (Graham et al., 2022b). Also, self-reported salaries on Glassdoor align closely with the distribution of salaries in the reviewers' metropolitan areas, further validating the platform's reliability as an unbiased source of employee satisfaction data.

3.2. *Corporate Innovation Similarity via Conference Calls*

Conference calls allegedly reveal information that is not revealed in routine disclosures such as annual report. Conference calls typically elicit stronger price reactions than 10-K releases, perhaps because they are timelier and permit interaction between the analysts and management. First, the conference call is timelier than the 10-K. Conference calls are typically released soon after the earnings announcement press release and are associated with a large stock market response relative to the release of the subsequent 10-K report. Unlike the 10-K, conference calls not only provide backward-looking information but also forward-looking insights, as executives often discuss future strategies, expectations, and potential challenges (Li and Ramesh 2009). Second, conference calls are typically more spontaneous and dynamic than the 10-K. Conference

call participants can ask questions about value-relevant information released in the earnings announcement. The firm's legal and management team carefully craft the 10-K, which possibly decreases its transparency and reduces its information content. Formal disclosures are more scripted, and prior research has shown that their content does not change much over time. The different sections of the report are written and edited by various individuals, who are unlikely to be executives. Additionally, these disclosures lack the spontaneity that characterizes conference calls.

Conference calls held in conjunction with earnings releases convey important value-relevant information. During the calls, managers have an opportunity to explain quarterly results in a relatively unconstrained manner, provide more color on their expectations, and address callers' questions (Matsumoto, Pronk, and Roelofsen, 2011). However, studies also show that managers use the language of earnings calls strategically to promote a more favorable impression of company performance.

Building on this, we introduce a novel measure of innovation similarity between the target and acquirer by conducting textual analysis of innovation-related discussions in earnings conference call transcripts. Specifically, we calculate linguistic similarity between the target and acquirer on innovation topics, capturing alignment or divergence in their innovation strategies.

To unpack this construct, we disaggregate innovation similarity into two distinct dimensions—product innovation and technological (production) innovation. Product overlap can generate demand-side synergies and economies of scope (e.g., shared customers, complementary features), potentially offsetting integration frictions, whereas high technological overlap without product overlap mainly duplicates production know-how and raises coordination and integration costs.

The interactive Q&A format of these calls provides candid, forward-looking insights, reduces boilerplate language, and offers both retrospective and prospective perspectives. This enables us to assess both backward similarity (reflecting past innovation themes) and forward similarity

(anticipating or responding to future innovations).

3.3. Merger data sample

To test the effect of corporate innovation similarity on corporate innovation and employee satisfaction for the acquiring firms, we draw a sample of mergers and acquisitions from the Securities Data Company (SDC) database. We include merger data in the 2009 through 2024 period. We require that Glassdoor ratings for the acquirer and target are available for 3 years before and the acquirer are available 3 years after the announcement of the merger. We restrict the sample of mergers to completed majority acquisitions with a public acquirer, a public target, and with an available deal value. Our final sample consists of 313 completed acquisitions.

We report variable definitions in Appendix A.1. Our sample includes an average of over $ 7.828 Billion in deal value, covering a significant part of takeover activity in the United States over this time period.

3.4. Empirical Approach

The primary empirical specification used in this paper is the Difference-in-Differences (DiD) methodology to investigate the impact of the pre-merger corporate innovation similarity between the acquirer and target firms on post-merger firm innovation. The model is specified as follows:

$$Innovation_{i,d,t+1} = \beta * Similarity_{i,d,t} \times Post_{i,t} + \beta_1 Similarity_{i,d,t} + \beta_2 Post_{i,t} + \quad (1)$$

$$\theta' X_{i,t} + \delta_{industry,t} + \gamma_{state} + \varepsilon_{i,j,t}.$$

$Innovation_{i,d,t+1}$ represents the firm innovation for firm i in deal d in year $t+1$. This is measured as the innovation outcomes (e.g., patent counts, patent citation, patent value, and innovation obsolescence) one year after the merger. $Similarity_{i,d,t}$ is a binary variable representing the innovation similarity of company i in merger transaction d. If the innovation similarity between the acquirer and the target company is greater than the median value of the

innovation similarity variable across all companies, $Similarity_{i,d,t}$=1; otherwise, it is 0. $Post_{i,t}$ is a dummy variable indicating the merger year. We capture the innovation similarity via the managerial disclosure through conference call discussions, focusing on the discussions about corporate innovation activities.

β is the coefficient of interest, which captures the effect of innovation similarity between the acquirer and target on the change in post-merger innovation. $X_{i,t}$ is a vector of control variables including corporate innovation similarity in Bena and Li (2014), corporate innovation culture measures developed in Li et al. (2021), leverage, market-to-book assets, return on assets, cash holdings, PP&E, return on equity, operating cash flow, net working capital, capex, R&D expenditures and firm size. We include industry-year fixed effects ($\delta_{industry,t}$) to control for any overall temporal changes in innovation, which also account for industry-specific trends over time. Additionally, we incorporate state fixed effects (γ_{state}) to account for state-level heterogeneity, capturing the potential influence of state-specific policies, economic conditions, or other regional factors on innovation and post-merger performance.. By including these fixed effects, we mitigate concerns that changes in innovation may be driven by broader industry-wide trends rather than the merger itself. $\varepsilon_{i,j,t}$ is the error term, representing the unobserved factors and random variation that are not explained by the model.

In addition to studying the effect of corporate innovation similarity on post-merger firm innovation, we also examine the impact of the pre-merger innovation similarity between the acquirer and target on post-merger employee satisfaction. The model for employee satisfaction is specified as follows:

$$EmployeeSatisfaction_{i,d,t+1} = \beta * Similarity_{i,d,t} \times Post_{i,t} + \beta_1 Similarity_{i,d,t} + \qquad (2)$$

$$\beta_2 Post_{i,t} + \theta' X_{i,t} + \delta_{industry,t} + +\gamma_{state} + \varepsilon_{i,j,t}.$$

$EmployeeSatisfaction_{i,d,t+1}$ represents the employee satisfaction level of company for firm i in deal d in year $t+1$(i.e., work/life balance, compensation and benefits, career

opportunities, senior management, and culture and values). Through the interaction term $Similarity_{i,d,t} \times Post_{i,t}$, we estimate the causal effect of pre-merger innovation similarity on employee satisfaction. We also include the control variables in equation (1) and industry-year fixed effects ($\delta_{industry,t}$) to control for any overall temporal changes in innovation, which also account for industry-specific trends over time. Additionally, we incorporate state fixed effects (γ_{state}) to account for state-level heterogeneity. $\varepsilon_{i,j,t}$ is the error term, representing the unobserved factors and random variation that are not explained by the model.

4. Empirical Results

4.1. Innovation similarities, the innovation outcome, and the change in employee satisfaction

We now examine innovation outcomes and employee satisfaction for firms with varying degrees of similarity in innovation portfolios between the acquirer and the target. To accomplish this, we sort acquiring firms into quantiles based on their similarity in innovation portfolios with their targets and evaluate employee satisfaction and innovation outcomes across these quantiles. We measure the changes of innovation outcomes and employee satisfaction two years prior to and two years following the acquisition to capture medium-term effects and allow for adequate integration of the merged entities.

Table 1 presents these findings. Panel A presents the change in innovation outcomes. Firms in the highest innovation similarity quantile report significantly lower patent counts, fewer patent citations, reduced patent value, and higher technological obsolescence compared to firms with the lowest similarity. The negative differences are statistically significant, suggesting that highly similar innovation portfolios between acquiring and target firms potentially constrain innovation productivity and efficiency post-acquisition.

Panel B reveals that employee satisfaction significantly declines as innovation similarity increases. Specifically, firms with the highest innovation similarity (quantile 'High') experience declines across all satisfaction dimensions (career opportunities, benefits, culture, overall satisfaction, senior management perception, and work-life balance) compared to firms with the

lowest similarity ('Low'). This difference is statistically significant for each individual dimension, indicating that high innovation similarity may amplify cultural frictions and reduce employee satisfaction post-acquisition.

Collectively, these findings suggest that acquisitions involving highly similar innovation portfolios between acquirer and target firms are associated with negative shocks to both employee satisfaction and innovation outcomes. This highlights potential downsides of mergers between firms with highly aligned innovation strategies and underscores the importance of considering innovation complementarity rather than mere similarity in acquisition decisions.

Table 2 reports staggered DiD estimates of how high acquirer–target innovation similarity affects post-merger innovation outcomes. We assemble a panel around each deal from three fiscal years before the announcement (t = −3) through three years after (t = +3) and estimate two-way fixed-effects regressions with acquirer and calendar-year fixed effects. Our main regressor is the interaction *Similarity × Post*, where *Post* is an indicator for years t ≥ 0 and *Similarity* is measured pre-merger from earnings-call text. Column (1) uses patent counts as the dependent variable and includes standard time-varying controls (leverage, market-to-book, ROA, cash, PP&E, ROE, operating cash flow, net working capital, capex, R&D, acquisition expenses, and firm size). The coefficient on *Similarity × Post* captures the differential change in outcomes for high- vs. low-similarity pairs after the deal relative to their own pre-trends. We find that acquirers exhibit significantly lower patenting following acquisitions of highly similar targets; economically, a one–standard deviation increase in similarity corresponds to about an 8.49% decline in patent output in post years.

Columns (2) – (4) replace the dependent variable with patent citations, patent value, and innovation obsolescence, respectively. Across these measures, the Post × Innovation Similarity term remains negative and statistically significant: citation- and value-based metrics fall, while obsolescence rises, for high-similarity deals relative to low-similarity benchmarks. Event-time coefficients （not tabulated） show flat pre-trends (t = -3···-1) and declines concentrated in t

= +1 to t = +3, consistent with post-merger integration frictions rather than anticipatory effects. Overall, the staggered DiD evidence indicates that acquiring firms experience meaningfully weaker post-merger innovation when the target is highly similar on innovation dimensions.

We then examine how innovation similarity between the acquirer and the target affects changes in employee satisfaction following the acquisition. Table 3 examines whether employee satisfaction declines more for acquirers whose targets are highly similar on innovation. We assemble a panel around each deal from three fiscal years before the announcement (t = −3) through three years after (t = +3). To avoid capturing short-term, reactionary responses at announcement, we define Post as an indicator for t ≥ +1 (the announcement year t = 0 does not load on Post). We estimate staggered difference-in-differences regressions with acquirer and calendar-year fixed effects; the key regressor is *Post*(t≥+1) ×*Similarity*, where Innovation Similarity is the pre-merger text-based measure from earnings calls. Column (1) uses overall Glassdoor satisfaction as the dependent variable and includes standard time-varying controls (leverage, market-to-book, ROA, cash, PP&E, ROE, operating cash flow, net working capital, capex, R&D, acquisition expenses, and firm size). The coefficient on *Post* ×*Similarity* captures the differential change in satisfaction for high- vs. low-similarity pairs after the deal relative to their own pre-trends. Economically, a one–standard-deviation increase in similarity corresponds to about a 2.80% decline in overall satisfaction at t = +1.

Columns (2) − (6) replace the dependent variable with the five sub-dimensions—Career, Benefits, Culture, Senior Management, and Work–Life Balance. Across all components, the *Post*(t≥+1) ×*Similarity* term is negative and statistically significant, indicating broader deterioration in employee evaluations for high-similarity deals relative to low-similarity benchmarks. Event-time estimates (untabulated) show flat pre-trends over t = −3⋯−1 and declines concentrated in t = +1…+3, consistent with integration frictions rather than contemporaneous announcement effects. Overall, the staggered DiD evidence indicates that acquisitions of highly similar targets are

followed by meaningfully weaker employee satisfaction at the acquirer.

To establish the labor channel, we examine whether changes in employee satisfaction around the merger predict subsequent post-merger innovation outcomes at the acquirer. The mechanism prediction is simple: if similarity depresses satisfaction, and lower satisfaction slows idea generation/transfer and increases rework, then innovation output and quality should fall in the post-merger years. In our staggered DiD around the deal (t = −3…+3, with Post = t≥+1 to avoid announcement reactions), we link changes in Glassdoor satisfaction to subsequent changes in the acquirer's innovation performance.

In a follow-up "mechanism" table, Table IA1, declines in satisfaction predict subsequent drops in patenting, citations, and value (and increases in obsolescence) —consistent with employee satisfaction partially mediating the link from innovation similarity to post-merger innovation performance.

4.2. *Innovation similarity, employee satisfaction, and labor mobility*

We next consider acquisitions in which increased labor mobility is likely to moderate the negative effects of innovation similarity on employee satisfaction following an acquisition. The moderating role of labor mobility is likely substantial when there is significant overlap in innovation between the bidder and target firms. Greater innovation overlap between firms can create redundancy, reduce employee bargaining power, and consequently lower employee satisfaction. Additionally, when two firms with similar innovation capabilities merge, limited labor mobility could decrease employee incentives and constrain their innovation efforts (Fallick, Fleischman, and Rebitzer, 2006). Collaboration and integration between incumbent and incoming innovation teams may also suffer when employees feel their career options are restricted. Lastly, acquisitions between innovation-similar firms frequently aim at achieving innovation efficiencies, often triggering workforce restructuring or role reallocation.

We differentiate between acquisitions in which the acquirer and target firms have highly similar innovation profiles. Theoretically, post-acquisition employee outcomes depend partly on

employees' ability to move across firms, as mobility influences their bargaining power and satisfaction (Marx, Strumsky, and Fleming, 2009; Marx, 2011).

Our primary proxy for labor mobility is the removal of non-compete agreements (NCAs). We define NCA removal based on state-level changes in legislation that reduce or eliminate the enforceability of NCAs. Specifically, we exploit state NCA reforms that reduce or eliminate enforceability. For each acquirer, let $NCA_{s,t} = 1$ in years at and after the reform becomes effective in the firm's headquarter state s, and 0 otherwise. We estimate a staggered DiD around the deal from t = −3…+3, defining $Post_{i,t} = 1$ for t ≥ +1 (the announcement year t = 0 is excluded to avoid immediate reactions). The regression includes the triple interaction $Similarity \times Post_{i,t} \times NCA_{s,t}$ plus all lower-order terms ($Similarity \times Post_{i,t}$, $Similarity \times NCA_{s,t}$, $NCA_{s,t} \times Post_{i,t}$, and main effects), acquirer and calendar-year fixed effects, and the standard time-varying controls; standard errors are clustered at the firm level. The coefficient on the triple interaction identifies how greater labor mobility (post-reform) moderates the post-merger effect of innovation similarity on employee satisfaction.

Table 4, Column (1) estimates overall satisfaction using a staggered DiD with $Similarity \times Post_{i,t} \times NCA_{s,t}$ and all lower-order terms. The coefficient on $Similarity \times Post_{i,t}$ is negative and significant, capturing the post-merger change in satisfaction associated with higher pre-merger similarity in non-reform states ($NCA_{s,t} = 0$). The triple interaction $Similarity \times Post_{i,t} \times NCA_{s,t}$ is positive and significant, showing that when a state removes/weakens NCAs ($NCA=1$) the post-merger decline tied to similarity is attenuated. Lower-order terms ($Similarity \times NCA_{s,t}$, $NCA_{s,t} \times Post_{i,t}$, and main effects) are not the focus; identification comes from how the post-merger effect of similarity differs between reform and non-reform states.

In non-reform states, the post-merger effect of similarity on overall satisfaction equals −0.238 (the coefficient on $Similarity \times Post_{i,t}$). In reform states, the net effect adds the triple interaction: −0.238 + 0.102 = -0.136, effectively offsetting the decline. Thus, NCA reforms substantially mitigate the adverse impact of high acquirer–target innovation similarity on

employees' post-merger satisfaction, consistent with greater labor mobility easing integration frictions.

4.3 *Evidence from open-ended employee responses*

An important feature of employee evaluations during mergers and acquisitions is the opportunity for employees to provide open-ended feedback, which offers valuable insights into their satisfaction with the evolving work environment. This section focuses on analyzing open-ended responses to examine the effect of innovation similarity between the acquirer and target firms on employee satisfaction. Specifically, we address two key questions: First, does the decline in employee satisfaction observed in highly similar innovation culture merger-target pairs extend beyond numerical ratings and manifest in the tone of open-ended feedback? Second, do these responses highlight specific factors related to innovation strategy that shape employee sentiment post-merger?

To assess sentiment shifts, we use the Loughran and McDonald (2011) financial dictionary, which categorizes words into various groups, including positive, negative, strong modal (necessity), weak modal (possibility), litigious, and uncertainty-related terms. This dictionary has been shown to correlate with financial outcomes, such as stock returns, volatility, and earnings surprises, making it a reliable tool for analyzing sentiment in open-ended employee responses.

We begin by examining the frequency of open-ended responses submitted by employees. In total, 414,945 open-ended responses were collected, accounting for approximately 87.70% of all evaluations. The propensity to provide feedback varied by employee rank. Prior to the merger, rank-and-file employees submitted open-ended responses in 44.87% of evaluations, while mid- and senior-level management did so at a higher rate of 54.14%. After the merger announcement, the response rate among rank-and-file employees increased slightly to 46.32%, while management's response rate decreased marginally to 52.88%.

The tone analysis of open-ended responses, shown in Table 5, reveals significant shifts following the merger, particularly in highly similar innovation culture merger-target pairs.

Employees at both the acquirer and target firms are less likely to use positive language and more likely to use negative terms after the merger. There is also a notable increase in the use of strong modal words (indicating necessity) and a rise in litigious, constraining, and uncertainty-related terms. This shift in tone suggests that employees perceive the post-merger environment as more uncertain and restrictive, which may be attributed to the integration of similar innovation strategies between the two firms. As innovation efforts converge in firms with similar cultures, redundancy risks increase, leading to tensions as employees adjust to new processes, technologies, and expectations. In contrast, we did not observe significant changes in the tone of responses from employees in low-similarity innovation culture merger-target pairs.

To dive deeper into the themes discussed in the open-ended responses, we apply Latent Dirichlet Allocation (LDA), a topic modeling technique that groups words into broader themes. The results, presented in Table IA2 and Table IA3, list the top 10 themes identified before and after the merger. We focus on themes that experienced significant shifts in importance around the merger event. For example, the theme Innovation and Strategy rises to become the most frequently discussed topic post-merger, up from fourth place before the merger. Similarly, the theme Job Security and Change jumps from sixth to second post-merger, reflecting increased concerns about how innovation integration may affect employee roles and job stability in highly similar innovation culture merger-target pairs. No significant changes were observed in the low-similarity innovation culture merger-target pairs.

One key shift observed is the emergence of the theme Workplace Uncertainty, which was not in the top 10 prior to the merger but becomes the fourth most common theme after the merger. This reflects concerns over how the alignment of innovation efforts could lead to redundancy, increased competition for roles, or uncertainty regarding the future direction of the newly combined firm. Meanwhile, there is a decline in the frequency of the Career Growth theme, which had previously been more prominent. This suggests that employees are less confident in opportunities for career advancement within the new organizational structure, particularly as

innovation strategies converge and roles become more specialized.

Collectively, these findings suggest that employee dissatisfaction following an M&A event is closely tied to the integration of innovation strategies between the acquirer and target firms. When these strategies are highly similar, the alignment appears to increase uncertainty and stress within the workforce, as employees face potential redundancies, evolving expectations, and shifts in career prospects. The shifts in both the tone and content of open-ended responses provide additional evidence that innovation similarity negatively impacts employee satisfaction, amplifying concerns about job security, the integration process, and reduced opportunities for growth. These findings complement the numerical decline in satisfaction observed in evaluation scores, further indicating that employee sentiment is deeply affected by the merging of similar innovation efforts between firms.

4.4. *Product/Technology similarities, the innovation outcome, and the change in employee satisfaction*

Having established that higher acquirer–target innovation similarity is followed by weaker post-merger innovation and lower employee satisfaction, we next ask which dimension of similarity drives these effects. Building on Bena et al. (2022b), we distinguish product-innovation from technological (production) innovation: product overlap can create product-market synergies and economies of scope, whereas high technological overlap without product overlap mainly duplicates production know-how and raises coordination costs. Accordingly, we construct two pre-merger, text-based sub-measures - Sim_Product (overlap in product portfolios) and Sim_Tech (overlap in underlying production technologies).

To sharpen the mechanism, we partition deals into a 2×2 grid using pre-merger similarity along technology (Sim_Tech) and product (Sim_Product). Our focus is the quadrant with high technological overlap but low product overlap - a configuration that implies redundant production know-how with limited product-market synergies. We then re-estimate our staggered DiD ($t = -3\cdots+3$; Post = $t \geq +1$) either within quadrants or by interacting *Post × Similarity* with a High-Tech

× Low-Product indicator, using the Low-Tech × Low-Product cell as the benchmark. Consistent with the mechanism, the post-merger declines in innovation outcomes and employee satisfaction are most pronounced in the High-Tech / Low-Product quadrant, while effects are attenuated when product overlap is high (i.e., potential product-market synergies) or when technological overlap is low.[3]

Table 6 investigates which dimension of similarity drives the post-merger effects by splitting deals into a 2×2 grid using pre-merger technology (Sim_Tech) and product (Sim_Prod) overlap. We define an indicator *Lowproduct_Hightech* (1 for high technological overlap but low product overlap) and interact it with the Post indicator in a staggered DiD from t = −3…+3 (announcement year t = 0), with acquirer-industry × year fixed effects and state fixed effects; standard controls are included and errors cluster at the firm level. Columns (1)–(4) use ln(1+patents), citations, value, and obsolescence as outcomes. The coefficient on *Lowproduct_Hightech × Post* (reported as *Lowproduct_Hightech_Post*) is negative and significant for patents, citations, and value, and positive and significant for obsolescence, indicating that post-merger innovation deteriorates most when technological overlap is high but product overlap is low. The results hold when we control for a continuous similarity benchmark (e.g., *Similarity_Bena* and *Similarity_Bena × Post*), confirming that the concentration of effects in the High-Tech / Low-Product quadrant—not generic similarity—drives the decline. Event-time patterns (untabulated) show flat pre-trends and effects concentrated in t = +1…+3, consistent with integration frictions rather than anticipatory behavior.

Across outcomes, the *Lowproduct_Hightech × Post* coefficient is negative and statistically significant for patents, citations, and value, and positive and significant for obsolescence - indicating that deals with high technological overlap but low product overlap underperform other

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[3] As our measure is based on conferences calls, we also check two other measures for product overlap and technological overlap. Product similarity is based on Hoberg and Phillips (2016), while technology similarity is based on Bena and Li (2014). Tables IA5 and IA6 show that splitting the sample based on these two measures yield inconclusive findings.

quadrants after the merger. Event-time estimates (untabulated) show flat pre-trends (t = $-3 \cdots -1$)

and widening gaps concentrated in t = $+1 \ldots +3$, ruling out anticipatory effects and pointing to

post-merger integration frictions. Overall, the staggered DiD evidence indicates that the

deterioration in post-merger innovation is concentrated in the High-Tech/Low-Product quadrant,

rather than being a generic consequence of similarity, consistent with redundant production know-

how absent offsetting product-market synergies.

Table 7 analyzes the employee-satisfaction channel using the same quadrant design as

Table 6. We split deals by pre-merger technology and product overlap and define an indicator

Lowproduct_Hightech (high tech overlap, low product overlap). We estimate a staggered DiD from t

= $-3 \ldots +3$, setting Post = t≥+1 (the announcement year does not load on Post), and include

industry-by-year and state fixed effects, the standard firm-level controls, and a continuous

similarity benchmark (*Similarity_Bena* and *Similarity_Bena × Post*). Column (1) uses Overall

Glassdoor satisfaction as the dependent variable; Columns (2)–(6) use Career, Benefits, Culture,

Senior Management, and Work–Life Balance.

Across outcomes, the coefficient on *Lowproduct_Hightech × Post* is negative and statistically

significant, indicating that employee satisfaction declines most when acquirers buy targets with

high technological overlap but low product overlap. The main effect *Lowproduct_Hightech* is positive,

while the post-interaction is negative, implying that any favorable pre-merger differences do not

drive the results—the deterioration emerges after integration begins. Event-time patterns

(untabulated) show flat pre-trends (t = $-3 \cdots -1$) and declines concentrated in t = $+1 \ldots +3$,

consistent with integration frictions rather than announcement-time reactions.

4.5. Innovation similarity and former employee satisfaction

We further investigate the effect of innovation similarity on post-acquisition employee

satisfaction for former employees. It is plausible that former employees, who are more likely to

have been directly affected by restructuring, layoffs, or cultural shifts resulting from the acquisition,

exhibit stronger reactions in their evaluations. To explore this, we analyze changes in satisfaction ratings provided by former employees on Glassdoor. Specifically, we re-estimate a staggered DiD from t = −3…+3, setting Post = t≥+1 (the announcement year does not load on Post), and include industry-by-year and state fixed effects, the standard firm-level controls, and a continuous similarity benchmark (*Similarity_Bena* and *Similarity_Bena × Post*).

In Table 8, we present regression results of former employees' responses. Across all outcomes, Lowproduct_Hightech × Post is negative and statistically significant for departed employees. The magnitudes are larger than those observed in the full sample, indicating that post-merger dissatisfaction is most acute among individuals who ultimately leave. This pattern is consistent with integration frictions that are particularly salient when acquirer–target overlap is high in technology but low in product—a configuration that plausibly raises redundancy risk, role displacement, and culture/process conflict while offering limited product-side synergies. These results suggest that innovation-overlap–driven integration costs are disproportionately borne by workers who exit during the transition, while surviving employees adapt as reorganization stabilizes.[4]

4.6. Innovation Similarity and Employee Satisfaction in the Target Firm's Location

Table 9 focuses on employees located in the target firm's region. We re-estimate our staggered DiD from t = −3…+3, defining Post = 1 for t ≥ +1 (the announcement year does not load on Post). We keep the quadrant indicator *Lowproduct_Hightech* (high technological overlap, low product overlap) and interact it with Post; all models include the continuous benchmark (*Similarity_Bena* and *Similarity_Bena × Post*), the full control set, and industry-by-year and state fixed effects, with standard errors clustered at the firm level. Column (1) uses Overall Glassdoor satisfaction for target-region employees; Columns (2)–(6) use Career, Benefits, Culture, Senior Management, and Work–Life Balance.

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[4] In Table IA4, the main effects remain statistically significant when we focus on departed employees: higher innovation similarity between the acquirer and target predicts lower satisfaction among departed employees.

Across outcomes, *Lowproduct_Hightech × Post* is negative and statistically significant, indicating that post-merger declines in satisfaction are strongest among employees located in the target's region when acquirer–target overlap is high on technology but low on product.[5] The magnitudes are larger than the full-sample estimates reported earlier, consistent with integration frictions being most acute where the legacy target operations and routines are concentrated. Results are similar across all sub-dimensions (Career, Benefits, Culture, Senior, Balance). Event-time patterns (untabulated) show flat pre-trends and declines concentrated in t = +1…+3, reinforcing the interpretation that localized integration costs - rather than announcement-time reactions - drive the deterioration in satisfaction.

4.7. Innovation Similarity and Employee Satisfaction in the mid- and senior-level members of the management team

We also explore whether mid- and senior-level managers are more adversely affected by innovation similarity in the post-acquisition period. These employees typically hold more specialized or firm-specific roles, and as a result, may face greater challenges in securing comparable positions elsewhere if displaced. Moreover, they are more likely to be bound by restrictive non-compete agreements, which can further limit their external employment options following a merger. Consequently, the perceived risk of redundancy and loss of bargaining power may be higher among this group when the acquiring and target firms exhibit high innovation similarity. To examine this, we analyze satisfaction changes specifically for employees who self-identify as holding mid- or senior-level roles in Glassdoor reviews. If innovation overlap increases the likelihood of leadership consolidation or structural redundancies at higher organizational levels, we would expect to observe a sharper decline in satisfaction among this cohort. This analysis provides additional insight into how hierarchical position shapes employee responses to innovation-driven integration pressures.

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[5] In Table IA4, the main effects remain statistically significant when we focus on target-region employees: higher innovation similarity between the acquirer and target predicts lower satisfaction among employees in the target's region.

Table 10 focuses on mid- and senior-level management. We re-estimate our staggered DiD over t = −3…+3, setting Post = 1 for t ≥ +1 (the announcement year does not load on Post). Deals are split by pre-merger overlap, and we use the quadrant indicator *Lowproduct_Hightech* (high technological overlap, low product overlap). The key regressor is *Lowproduct_Hightech × Post*; we also include the continuous benchmark (*Similarity_Bena* and *Similarity_Bena × Post*), the standard controls, and industry-by-year and state fixed effects, clustering standard errors at the firm level. Column (1) reports Overall Glassdoor satisfaction for mid/senior managers; Columns (2)–(6) report Career, Benefits, Culture, Senior Management, and Work-Life Balance.

Across outcomes, *Lowproduct_Hightech × Post* is negative and statistically significant, indicating that post-merger declines in satisfaction are especially pronounced among mid- and senior-level managers when technological overlap is high but product overlap is low.[6] The magnitudes generally exceed those in the full-employee sample, consistent with greater integration frictions at the supervisory layer—role duplication, reassignment of decision rights, and heavier coordination burdens. The main effect *Lowproduct_Hightech* is positive while the post interaction is negative, implying the deterioration emerges after integration begins rather than reflecting pre-existing differences. These patterns align with managers' higher exposure to non-compete constraints and limited outside options, reinforcing that the adverse effects of innovation similarity are concentrated in the upper tiers of the organization.

4.8. Innovation Similarity and Employee Satisfaction in the members of the research team

We further explore whether the negative effect of innovation similarity on employee satisfaction is particularly pronounced for members of the research team. Employees engaged in research activities are likely to experience more substantial impacts when innovation overlap is high, as similarity between the acquiring and target firms' research portfolios often implies significant redundancy within these specialized teams. Consequently, members of the research

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[6] In Table IA4, the main effects remain statistically significant when we focus on mid- and senior-level members of the management team: higher innovation similarity between the acquirer and target predicts lower satisfaction among mid- and senior-level members of the management team.

team may face higher risks of job displacement or restructuring post-merger. Moreover, due to the specialized nature of their expertise, researchers who lose their positions following an acquisition may encounter greater difficulty in securing comparable roles elsewhere. Additionally, researchers are typically subject to stricter non-compete agreements, further constraining their ability to transition smoothly to other employment opportunities. Together, these factors suggest that research employees should experience notably sharper declines in satisfaction when involved in mergers characterized by high innovation similarity, highlighting the unique vulnerabilities faced by specialized research personnel during post-acquisition integration.

Table 11 focuses on research (R&D) staff. We re-estimate our staggered DiD over t = −3…+3, defining Post = 1 for t ≥ +1 (the announcement year does not load on Post). Deals are split by pre-merger overlap using the quadrant indicator *Lowproduct_Hightech* (high technological overlap, low product overlap). The key regressor is *Lowproduct_Hightech × Post*; we also include the continuous benchmark (*Similarity_Bena* and *Similarity_Bena × Post*), the standard controls, and industry-by-year and state fixed effects, with firm-clustered standard errors. Column (1) reports Overall Glassdoor satisfaction for R&D staff; Columns (2)–(6) report Career, Benefits, Culture, Senior Management, and Work–Life Balance.

Across outcomes, *Lowproduct_Hightech × Post* is negative and statistically significant, indicating that post-merger declines in satisfaction are especially pronounced among R&D personnel when technological overlap is high but product overlap is low.[7] The magnitudes are among the largest across our role-based cuts, consistent with integration frictions that are most acute for technical teams—redundant platforms, overlapping toolchains, and reallocation of project ownership. The main effect *Lowproduct_Hightech* is positive while the post interaction is negative, implying the deterioration emerges after integration begins rather than reflecting pre-existing differences. Event-time patterns (untabulated) show flat pre-trends and declines

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[7] In Table IA4, the main effects remain statistically significant when we focus on members of the research team: higher innovation similarity between the acquirer and target predicts lower satisfaction among members of the research team.

concentrated in t = +1…+3, reinforcing the interpretation that process/technology redundancy without offsetting product synergies disproportionately burdens research staff.

5. Conclusion

We show that acquirer–target innovation similarity measured from earnings-call text predicts weaker post-merger innovation and lower employee satisfaction. Decomposing similarity clarifies the mechanism: outcomes deteriorate most when technology overlap is high but product overlap is low, consistent with redundant production know-how and limited product-market synergies. Satisfaction declines—especially among employees in target regions, mid/senior managers, and R&D staff—forecast subsequent drops in patent quantity and quality, indicating a labor-channel link from similarity to innovation performance. Dynamics support an integration rather than anticipation story: effects emerge in years t = +1…+3 and generally attenuate thereafter. Policy and context matter: state NCA reforms that raise labor mobility mitigate the post-merger satisfaction decline associated with high similarity. For practice, acquirers should screen for technology redundancy, prioritize complementarity over raw similarity, and pair integration with targeted retention and role differentiation in technical and managerial layers. Conceptually, our text-based similarity measure adds a forward-looking lens beyond patent-class overlap and culture indices, highlighting how the type of similarity—product vs. technology—shapes human-capital frictions and innovation outcomes in M&A.

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Table 1 Employee Satisfaction and Innovation Outcomes for Portfolios Formed by Single Sorting on Innovation Similarity

Table 1 presents the relationship between innovation similarity and two key post-merger outcomes: innovation performance and employee satisfaction. Panel A reports innovation outcomes for portfolios sorted into quintiles based on innovation similarity between acquirer and target firms. Firms in the highest similarity quantile exhibit significantly lower post-merger patent counts, citations, and patent value, along with higher technological obsolescence, relative to firms in the lowest similarity group. Panel B displays levels of employee satisfaction across the same similarity quintiles. Employee satisfaction consistently declines as innovation similarity increases, with significant negative effects observed across all measured dimensions, including overall satisfaction, career opportunities, benefits, corporate culture, senior management perception, and work-life balance. The high-minus-low (H–L) differences capture the statistical contrast between the top and bottom innovation similarity quintiles.

Panel A	Innovation Outcomes			
Similarity quantile	Patent	Citation	Value	Obsolescence
Low	3.899	4.216	6.148	0.475
2	3.545	3.861	5.946	0.714
3	3.465	4.075	5.766	0.503
4	3.290	3.729	5.922	0.796
High	3.378	3.751	5.862	0.728
H-L	-0.521***	-0.465***	-0.286***	0.253***
t-stat.	(-3.617)	(-2.389)	(-3.127)	(2.858)

Panel B	Employee Satisfaction					
Similarity quantile	Overall	Career	Benefits	Culture	Senior	Balance
Low	0.106	0.001	0.024	0.049	-0.014	-0.009
2	0.086	0	-0.054	0.089	0.013	-0.011
3	-0.053	-0.072	-0.065	0.016	-0.120	-0.124
4	-0.161	-0.228	-0.161	-0.143	-0.174	-0.113
High	-0.066	-0.070	-0.150	-0.123	-0.120	-0.154
H-L	-0.172***	-0.071***	-0.174***	-0.172***	-0.106***	-0.145***
t-stat.	(-2.892)	(-3.207)	(-2.624)	(-2.806)	(-3.463)	(-2.681)

Table 2 Innovation Similarity and Corporate Innovation

The table presents the results of panel regression analyses investigating the relationship between innovation similarity and corporate innovation outputs. The dependent variables in Columns (1) to (4) represent different dimensions of corporate innovation: *lnpatent*, *lncitation*, *lnvalue*, and *Obsolescence*. *lnpatent* reflects the average number of new patent applications filed within three years following the mergers and acquisitions (log-transformed +1), while the remaining columns capture measures of patent citation impact (*lncitation*), patent value (*lnvalue*), and innovation obsolescence (*Obsolescence*). Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) lnpatent	(2) lncitation	(3) lnvalue	(4) Obsolescence
Similarity_Post	-0.421***	-0.794***	-0.227***	0.031***
	(0.090)	(0.255)	(0.055)	(0.009)
Similarity	-0.214**	-0.349	-0.421	0.017**
	(0.102)	(0.317)	(0.441)	(0.008)
Post	0.325*	0.846***	0.564	0.002
	(0.184)	(0.280)	(0.348)	(0.009)
Similarity_Bena_Post	0.140	0.421	0.053	-0.016*
	(0.196)	(0.440)	(0.333)	(0.009)
Similarity_Bena	0.022	0.028	0.036	0.032
	(0.020)	(0.023)	(0.023)	(0.022)
Innovation_Target	-0.004	-0.044	-0.049	0.007
	(0.019)	(0.043)	(0.045)	(0.006)
Innovation_Acquirer	0.017	-0.030	0.060	0.001
	(0.020)	(0.023)	(0.065)	(0.002)
Size	0.057*	0.045	0.113**	0.001
	(0.030)	(0.033)	(0.055)	(0.001)
Capex	-1.358*	-0.830	-2.052	0.085*
	(0.790)	(0.926)	(1.516)	(0.048)
NWC	0.048	0.001	-0.030	-0.014
	(0.229)	(0.333)	(0.449)	(0.013)
OCF	0.246	-0.327	-0.355	-0.038**
	(0.383)	(0.506)	(0.776)	(0.018)
Roe	0.155	0.121*	0.233	0.003
	(0.156)	(0.071)	(0.156)	(0.006)
Cash	0.104	0.197	0.110	-0.004
	(0.140)	(0.186)	(0.226)	(0.007)
Roa	-1.215*	-0.307	-0.898	0.004
	(0.619)	(0.606)	(0.938)	(0.041)
MtB	0.072	0.224*	0.372**	0.004
	(0.084)	(0.135)	(0.156)	(0.005)
Lev	0.031	0.022	0.077***	0.003***
	(0.025)	(0.017)	(0.029)	(0.001)
PPE	-0.144	-0.233	-0.264	-0.012**
	(0.114)	(0.151)	(0.214)	(0.005)
RD	0.062	0.164*	0.141*	0.007***
	(0.040)	(0.094)	(0.078)	(0.002)
Constant	0.744***	1.087***	0.879**	0.009
	(0.211)	(0.243)	(0.363)	(0.010)
Observations	2,191	2,191	2,191	2,191
Adjusted R²	0.578	0.556	0.592	0.353

Table 3 Innovation Similarity and Employees Satisfaction

The table presents the estimation results of panel regressions examining the relationship between levels of employees' ratings of their employer (Overall, Career, Benefits, Cultures, Senior, and Balance) and innovation similarity within a sample of firms involved in mergers and acquisitions. The dependent variables reflect various dimensions of employee satisfaction and perceptions, including overall satisfaction, career opportunities, benefits, corporate culture, senior management, and work-life balance. Innovation similarity is the main independent variable of interest, while control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. All models include fixed firm and year effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefit	(4) Culture	(5) Senior	(6) Balance
Similarity_Post	-0.191***	-0.166***	-0.083***	-0.171***	-0.147***	-0.145***
	(0.058)	(0.045)	(0.021)	(0.044)	(0.037)	(0.036)
Post	0.117	0.096	0.096	0.067	0.098	0.088
	(0.093)	(0.078)	(0.095)	(0.080)	(0.076)	(0.090)
Similarity_Bena_Post	0.087	0.080	0.162	0.087	0.056	0.091
	(0.106)	(0.090)	(0.109)	(0.091)	(0.085)	(0.105)
Similarity_Bena	0.266	0.212	0.131	0.196	0.190	0.113
	(0.171)	(0.143)	(0.186)	(0.144)	(0.140)	(0.168)
Innovation_Target	-0.016	-0.016	-0.009	-0.020	-0.004	-0.000
	(0.015)	(0.013)	(0.015)	(0.014)	(0.013)	(0.016)
Innovation_Acquirer	0.013	0.009	0.004	0.008	0.001	-0.004
	(0.016)	(0.014)	(0.015)	(0.014)	(0.013)	(0.014)
Size	-0.006	-0.002	0.004	-0.001	-0.004	-0.014
	(0.019)	(0.017)	(0.021)	(0.016)	(0.016)	(0.020)
Capex	-0.488	0.332	0.152	0.082	0.210	0.801
	(0.640)	(0.654)	(0.699)	(0.589)	(0.655)	(0.595)
NWC	0.222	0.306	0.453**	0.290	0.300*	0.354*
	(0.191)	(0.186)	(0.221)	(0.205)	(0.181)	(0.202)
OCF	0.687**	0.566**	0.876***	0.447*	0.583**	0.791**
	(0.314)	(0.280)	(0.334)	(0.267)	(0.267)	(0.319)
Roe	-0.050	-0.042	-0.039	-0.013	0.012	-0.002
	(0.065)	(0.062)	(0.072)	(0.058)	(0.051)	(0.065)
Cash	-0.175	-0.262*	-0.345*	-0.239	-0.247*	-0.267*
	(0.139)	(0.146)	(0.176)	(0.167)	(0.140)	(0.156)
Roa	0.002	-0.219	-0.251	0.121	-0.156	-0.214
	(0.434)	(0.375)	(0.431)	(0.352)	(0.347)	(0.410)
MtB	0.079	0.073	0.091	0.054	0.062	0.060
	(0.052)	(0.048)	(0.057)	(0.046)	(0.043)	(0.054)
Lev	-0.011	-0.007	-0.007	-0.009	-0.008	-0.005
	(0.009)	(0.008)	(0.010)	(0.008)	(0.007)	(0.008)
PPE	0.104	0.025	0.136	0.071	0.011	0.023
	(0.116)	(0.105)	(0.134)	(0.101)	(0.105)	(0.119)
RD	0.069***	0.049***	0.051**	0.047***	0.039**	0.033
	(0.020)	(0.018)	(0.022)	(0.016)	(0.016)	(0.021)
Constant	1.831***	1.539***	1.754***	1.473***	1.370***	1.738***
	(0.178)	(0.149)	(0.189)	(0.149)	(0.146)	(0.172)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.526	0.508	0.514	0.545	0.467	0.481

Table 4 Innovation Similarity and Employee Satisfaction under Non-Compete Agreement Removal

This table presents the results of a difference-in-differences (DID) regression model estimating the relationship between innovation similarity and levels of employee satisfaction, particularly in the context of non-compete agreement (*NCA*) removals. Employee satisfaction is measured across various rating categories, including Overall, Career, Benefits, Cultures, Senior, and Balance. The primary explanatory variables are innovation similarity (*Similarity_Post*) and the interaction term *Similarity_post_NCA*, where *NCA* is a dummy variable indicating firms located in states that have removed non-compete agreements. The removal of NCAs is expected to enhance employee mobility, potentially influencing both corporate innovation outcomes and employee satisfaction. Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. Statistical significance is indicated by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefit	(4) Culture	(5) Senior	(6) Balance
Similarity_Post_NCA	0.102**	0.350**	0.085***	0.138**	0.117**	0.186***
	(0.042)	(0.151)	(0.022)	(0.055)	(0.047)	(0.055)
Similarity_Post	-0.238***	-0.193**	-0.225***	-0.235***	-0.165**	-0.222***
	(0.074)	(0.077)	(0.085)	(0.072)	(0.077)	(0.053)
Similarity_NCA	0.287	0.149	0.484	0.269	0.290	0.733*
	(0.325)	(0.367)	(0.339)	(0.251)	(0.467)	(0.397)
NCA_Post	0.035	0.031	0.044*	0.018	0.022	0.028
	(0.023)	(0.022)	(0.023)	(0.022)	(0.020)	(0.023)
Similarity	-0.299*	-0.302	-0.242*	-0.200	-0.264*	-0.284*
	(0.173)	(0.189)	(0.144)	(0.174)	(0.157)	(0.157)
NCA	0.198	0.049	0.426***	0.132	0.158	0.626**
	(0.308)	(0.293)	(0.155)	(0.208)	(0.438)	(0.304)
Post	0.195**	0.153*	0.168**	0.269***	0.189**	0.101
	(0.077)	(0.083)	(0.080)	(0.079)	(0.079)	(0.076)
Similarity_Bena_Post	-0.033	0.100	0.048	-0.052	-0.042	0.111
	(0.074)	(0.080)	(0.086)	(0.076)	(0.080)	(0.082)
Similarity_Bena	0.033	0.073	0.093	0.113	0.090	0.031
	(0.146)	(0.134)	(0.118)	(0.138)	(0.144)	(0.131)
Innovation_Target	0.009	-0.002	0.005	0.035	0.026	0.008
	(0.019)	(0.018)	(0.017)	(0.038)	(0.018)	(0.015)
Innovation_Acquirer	-0.009	0.009	-0.015	-0.015	-0.020	-0.013
	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.015)
Size	-0.006	0.011	0.033**	0.004	-0.007	0.008
	(0.009)	(0.016)	(0.016)	(0.011)	(0.012)	(0.013)
Capex	0.903	-0.237	0.676	1.025	0.092	0.746
	(0.580)	(0.671)	(0.535)	(0.729)	(0.709)	(0.620)
NWC	-0.295***	-0.240***	-0.247**	-0.292***	-0.174**	-0.223**
	(0.082)	(0.088)	(0.099)	(0.103)	(0.083)	(0.094)
OCF	-0.222	-0.164	-0.188	-0.209	-0.057	-0.447**
	(0.236)	(0.222)	(0.269)	(0.218)	(0.269)	(0.198)
Roe	-0.036	-0.065*	0.001	-0.089*	-0.047	-0.030
	(0.038)	(0.033)	(0.047)	(0.053)	(0.041)	(0.046)
Cash	0.287***	0.217***	0.152***	0.155**	0.190***	0.122**
	(0.057)	(0.056)	(0.044)	(0.061)	(0.059)	(0.058)
Roa	-0.397	0.000	0.114	-0.263	-0.229	0.350
	(0.286)	(0.310)	(0.344)	(0.468)	(0.334)	(0.378)
MtB	0.077***	0.024	0.013	0.030	0.057**	-0.021
	(0.024)	(0.025)	(0.036)	(0.037)	(0.028)	(0.030)
Lev	0.007	-0.000	0.005	0.003	0.006	0.010
	(0.006)	(0.005)	(0.010)	(0.008)	(0.007)	(0.009)
PPE	-0.129	-0.062	-0.059	-0.211*	-0.003	-0.140
	(0.084)	(0.091)	(0.106)	(0.113)	(0.087)	(0.105)
RD	0.005	0.012	0.004	-0.003	0.004	-0.006
	(0.010)	(0.009)	(0.010)	(0.011)	(0.009)	(0.012)
Constant	3.049***	2.595***	2.821***	2.197***	2.380***	2.953***
	(0.108)	(0.134)	(0.122)	(0.119)	(0.113)	(0.110)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.301	0.217	0.301	0.352	0.264	0.262

Table 5 Employee Review Sentiment Around Mergers: High vs. Low Innovation Similarity

Table 5 presents summary statistics on changes in employee review sentiment surrounding mergers, conditional on the level of innovation similarity between the merging firms. The table categorizes sentiment into seven dimensions—Uncertainty, Weak Modal, Positive, Strong Modal, Negative, Constraining, and Litigious—and compares the average number of sentiment expressions in employee reviews before and after the merger. Sentiment is categorized following the Loughran and McDonald (2011) financial dictionary. The sample is split into high and low innovation similarity groups based on pre-merger innovation alignment between acquirer and target firms. The "Diff." columns report the change in sentiment counts post-merger relative to pre-merger levels for each group.

Sentiment	High similarity			Low similarity		
	Before the merger	After the merger	Diff.	Before the merger	After the merger	Diff.
Uncertainty	55943	65040	9097	80951	82487	1536
Weak Modal	56058	61598	5540	71647	73480	1833
Positive	612037	569900	-42137	527531	518619	-8912
Strong Modal	78899	91617	12718	69941	71251	1310
Negative	173988	193420	19432	178621	181062	2441
Constraining	16123	22767	6644	24116	25314	1198
Litigious	6094	6836	742	7706	7240	-466

Table 6 Innovation Similarity and Corporate Innovation: A Multi-Dimensional Analysis in Innovation

The table presents the results of panel regression analyses investigating how different merger characteristics—specifically the interplay between product and technological—relate to corporate innovation outputs. The dependent variables in Columns (1) to (4) represent different dimensions of corporate innovation: *lnpatent*, *lncitation*, *lnvalue*, and *Obsolescence*. *lnpatent* reflects the average number of new patent applications filed within three years following the mergers and acquisitions (log-transformed +1), while the remaining columns capture measures of patent citation impact (*lncitation*), patent value (*lnvalue*), and innovation obsolescence (*Obsolescence*). The primary independent variable of interest is Lowproduct_Hightech_Post, which test the innovation outcomes of mergers with varying levels of product and technology overlap. Control variables include Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) lnpatent	(2) lncitation	(3) lnvalue	(4) Obsolescence
Lowproduct_Hightech_Post	-1.493***	-0.689***	-1.435***	0.035***
	(0.486)	(0.195)	(0.515)	(0.010)
Lowproduct_Hightech	1.047	0.120	0.219	-0.050
	(0.666)	(0.659)	(0.636)	(0.051)
Post	0.395**	1.166***	0.984***	0.003
	(0.163)	(0.281)	(0.339)	(0.010)
Similarity_Bena_Post	0.183	0.454	0.089	-0.014
	(0.195)	(0.444)	(0.334)	(0.010)
Similarity_Bena	0.025	0.005	0.003	0.021
	(0.039)	(0.037)	(0.044)	(0.044)
Innovation_Target	-0.007	-0.049	-0.054	0.007
	(0.019)	(0.044)	(0.045)	(0.007)
Innovation_Acquirer	0.016	-0.034	0.060	0.001
	(0.020)	(0.023)	(0.064)	(0.002)
Size	0.055*	0.047	0.121**	0.001
	(0.031)	(0.033)	(0.055)	(0.001)
Capex	-0.948	-0.354	-1.483	0.077*
	(0.789)	(0.939)	(1.482)	(0.046)
NWC	0.049	0.025	-0.023	-0.015
	(0.249)	(0.333)	(0.448)	(0.014)
OCF	0.213	-0.527	-0.523	-0.035*
	(0.394)	(0.513)	(0.788)	(0.019)
Roe	0.138	0.081	0.194	0.004
	(0.153)	(0.076)	(0.157)	(0.006)
Cash	0.092	0.148	0.078	-0.003
	(0.153)	(0.194)	(0.233)	(0.008)
Roa	-1.254**	-0.196	-0.793	0.005
	(0.634)	(0.629)	(0.941)	(0.041)
MtB	0.073	0.215	0.343**	0.003
	(0.086)	(0.132)	(0.157)	(0.005)
Lev	0.030	0.025	0.079***	0.003***
	(0.025)	(0.017)	(0.029)	(0.001)
PPE	-0.180	-0.315**	-0.345	-0.011**
	(0.117)	(0.154)	(0.218)	(0.005)
RD	0.065	-0.152	0.156**	0.007***
	(0.040)	(0.099)	(0.074)	(0.002)
Constant	0.528*	0.640*	0.452	0.018
	(0.274)	(0.337)	(0.448)	(0.012)
Observations	2,191	2,191	2,191	2,191
Adjusted R²	0.582	0.559	0.597	0.351

Table 7 Innovation Similarity and Employees Satisfaction: A Multi-Dimensional Analysis in Innovation

The table presents the results of panel regression analyses investigating how different merger characteristics - specifically the interplay between product and technological - relate to employee satisfaction. Satisfaction is measured across seven dimensions: Overall, Career, Benefits, Cultures, Senior, and Balance. The primary independent variables of interest are interaction terms, Lowproduct_Hightech_Post, which tests the employee satisfaction of mergers with varying levels of product and technology overlap. Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefit	(4) Culture	(5) Senior	(6) Balance
Lowproduct_Hightech_Post	-0.345***	-0.380***	-0.357***	-0.499***	-0.398***	-0.479***
	(0.113)	(0.117)	(0.100)	(0.104)	(0.141)	(0.178)
Lowproduct_Hightech	0.261	0.156	0.237	0.482	0.243	0.390
	(0.245)	(0.169)	(0.239)	(0.352)	(0.150)	(0.353)
Post	0.210**	0.195*	0.124	0.358***	0.230**	0.075
	(0.092)	(0.100)	(0.081)	(0.093)	(0.091)	(0.086)
Similarity_Bena_Post	-0.052	0.076	0.025	-0.066	-0.061	0.087
	(0.074)	(0.080)	(0.082)	(0.074)	(0.079)	(0.081)
Similarity_Bena	-0.101	0.126	0.127	-0.091	-0.121	0.048
	(0.143)	(0.132)	(0.125)	(0.135)	(0.146)	(0.134)
Innovation_Target	0.009	-0.003	0.006	0.034	0.026	0.009
	(0.019)	(0.018)	(0.017)	(0.028)	(0.018)	(0.015)
Innovation_Acquirer	-0.011	0.006	-0.016	-0.017	-0.021	-0.013
	(0.015)	(0.014)	(0.016)	(0.014)	(0.015)	(0.015)
Size	-0.007	0.009	0.034**	0.003	-0.005	0.008
	(0.009)	(0.017)	(0.016)	(0.010)	(0.011)	(0.014)
Capex	1.053*	-0.004	0.740	1.162*	0.230	0.857
	(0.562)	(0.663)	(0.488)	(0.698)	(0.696)	(0.589)
NWC	-0.304***	-0.253***	-0.275***	-0.296***	-0.180**	-0.256***
	(0.084)	(0.087)	(0.099)	(0.107)	(0.086)	(0.095)
OCF	-0.244	-0.185	-0.243	-0.236	-0.120	-0.466**
	(0.226)	(0.227)	(0.243)	(0.206)	(0.258)	(0.196)
Roe	-0.041	-0.070**	-0.001	-0.101*	-0.053	-0.032
	(0.037)	(0.033)	(0.047)	(0.056)	(0.040)	(0.045)
Cash	0.282***	0.222***	0.150***	0.146**	0.178***	0.122*
	(0.059)	(0.058)	(0.047)	(0.066)	(0.066)	(0.062)
Roa	-0.381	-0.017	0.184	-0.233	-0.175	0.416
	(0.279)	(0.304)	(0.324)	(0.459)	(0.320)	(0.377)
MtB	0.077***	0.032	0.010	0.031	0.056**	-0.029
	(0.023)	(0.026)	(0.035)	(0.036)	(0.027)	(0.030)
Lev	0.007	-0.001	0.004	0.003	0.007	0.010
	(0.006)	(0.006)	(0.011)	(0.008)	(0.008)	(0.010)
PPE	-0.144*	-0.090	-0.068	-0.230**	-0.027	-0.145
	(0.086)	(0.091)	(0.102)	(0.105)	(0.090)	(0.105)
RD	0.005	0.011	0.004	-0.002	0.008	-0.007
	(0.011)	(0.011)	(0.011)	(0.012)	(0.008)	(0.012)
Constant	2.967***	2.551***	2.779***	2.057***	2.270***	2.880***
	(0.123)	(0.156)	(0.134)	(0.135)	(0.131)	(0.126)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.298	0.214	0.298	0.389	0.265	0.259

Table 8 Innovation Similarity and Employee Satisfaction among Former Employees

This table reports the regression results on the relationship between innovation similarity and employee satisfaction, focusing on satisfaction ratings from former employees. Satisfaction is measured across multiple dimensions, including Overall, Career, Benefits, Cultures, Senior, and Balance. The primary independent variables of interest are interaction terms, Lowproduct_Hightech_Post, which tests the employee satisfaction of mergers with varying levels of product and technology overlap. The regression includes control variables such as firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. Statistical significance is denoted by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefits	(4) Cultures	(5) Senior	(6) Balance
Lowproduct_Hightech_Post	-0.316***	-0.330***	-0.360***	-0.340***	-0.337***	-0.367***
	(0.088)	(0.082)	(0.085)	(0.080)	(0.075)	(0.077)
Lowproduct_Hightech	-0.095	-0.065	-0.150	-0.125	-0.108	-0.146
	(0.098)	(0.084)	(0.112)	(0.090)	(0.073)	(0.104)
Post	0.024	-0.005	-0.010	0.047	-0.020	-0.021
	(0.064)	(0.060)	(0.069)	(0.054)	(0.057)	(0.065)
Similarity_Bena_Post	-0.056	-0.046	-0.105	-0.120	-0.013	-0.061
	(0.066)	(0.064)	(0.071)	(0.166)	(0.065)	(0.071)
Similarity_Bena	0.080	0.058	0.086	0.113	0.042	-0.018
	(0.076)	(0.074)	(0.085)	(0.072)	(0.069)	(0.080)
Innovation_Target	0.008	-0.006	-0.002	0.005	0.004	-0.004
	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
Innovation_Acquirer	-0.004	-0.006	-0.012	-0.001	-0.009	-0.003
	(0.010)	(0.010)	(0.010)	(0.009)	(0.009)	(0.011)
Size	-0.002	-0.001	0.007	-0.003	-0.002	-0.009
	(0.009)	(0.008)	(0.010)	(0.008)	(0.008)	(0.009)
Capex	-0.765	-0.262	-0.321	-0.444	-0.943*	-0.126
	(0.471)	(0.443)	(0.458)	(0.460)	(0.534)	(0.479)
NWC	-0.180*	0.007	0.124	0.037	-0.013	0.052
	(0.097)	(0.094)	(0.108)	(0.113)	(0.099)	(0.108)
OCF	0.054	0.134	0.323*	0.049	0.177	0.296*
	(0.175)	(0.163)	(0.194)	(0.134)	(0.152)	(0.177)
Roe	-0.049	-0.048	-0.021	-0.075**	-0.032	-0.076*
	(0.042)	(0.033)	(0.043)	(0.038)	(0.037)	(0.045)
Cash	0.145*	-0.016	-0.129	-0.019	-0.012	-0.071
	(0.074)	(0.079)	(0.084)	(0.099)	(0.082)	(0.086)
Roa	0.495*	0.402	0.324	0.584**	0.326	0.400
	(0.292)	(0.299)	(0.363)	(0.265)	(0.291)	(0.330)
MtB	0.033	0.018	0.008	0.010	0.020	-0.019
	(0.020)	(0.021)	(0.027)	(0.022)	(0.018)	(0.024)
Lev	0.002	-0.001	-0.003	0.002	0.001	0.009
	(0.006)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)
PPE	0.115*	0.084	0.217***	0.098	0.181**	0.134*
	(0.062)	(0.070)	(0.067)	(0.069)	(0.070)	(0.075)
RD	0.050***	0.036***	0.031***	0.030***	0.030***	0.016
	(0.011)	(0.008)	(0.010)	(0.008)	(0.008)	(0.010)
Constant	2.634***	2.314***	2.694***	1.910***	2.081***	2.620***
	(0.088)	(0.084)	(0.094)	(0.082)	(0.080)	(0.094)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R^2	0.243	0.182	0.234	0.266	0.179	0.213

Table 9 Innovation Similarity and Employee Satisfaction in Target Regions

This table presents the regression results analyzing the relationship between innovation similarity and employee satisfaction, focusing on a sample of employee satisfaction ratings from the regions where target companies of mergers and acquisitions are located. Satisfaction is measured across multiple dimensions, including Overall, Career, Benefits, Cultures, Senior, and Balance. The primary independent variables of interest are interaction terms, Lowproduct_Hightech_Post, which tests the employee satisfaction of mergers with varying levels of product and technology overlap. The regression includes control variables such as firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. Statistical significance is denoted by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefits	(4) Cultures	(5) Senior	(6) Balance
Lowproduct_Hightech_Post	-0.524***	-0.441***	-0.488***	-0.524***	-0.483***	-0.504***
	(0.108)	(0.124)	(0.096)	(0.080)	(0.153)	(0.108)
Lowproduct_Hightech	-0.017	-0.040	-0.308**	-0.077	-0.014	-0.116**
	(0.145)	(0.126)	(0.148)	(0.143)	(0.117)	(0.050)
Post	-0.046	-0.093	-0.132	-0.087	-0.106	-0.150
	(0.120)	(0.112)	(0.125)	(0.111)	(0.106)	(0.116)
Similarity_Bena_Post	0.054	0.139	0.074	0.075	0.109	0.119
	(0.162)	(0.147)	(0.170)	(0.146)	(0.138)	(0.152)
Similarity_Bena	0.021	0.014	0.018	0.025	0.005	0.003
	(0.044)	(0.040)	(0.047)	(0.039)	(0.037)	(0.044)
Innovation_Target	0.000	0.008	-0.001	-0.008	0.003	-0.009
	(0.016)	(0.015)	(0.016)	(0.014)	(0.015)	(0.014)
Innovation_Acquirer	-0.019	-0.026	-0.029	-0.013	-0.020	-0.011
	(0.012)	(0.032)	(0.033)	(0.012)	(0.022)	(0.013)
Size	0.025	0.021	0.033	0.023	0.018	0.027
	(0.035)	(0.030)	(0.033)	(0.033)	(0.029)	(0.030)
Capex	0.353	0.098	0.296	0.669	0.480	0.608
	(0.981)	(0.799)	(1.031)	(0.867)	(0.823)	(0.955)
NWC	-0.468	-0.382	-0.436	-0.369	-0.456*	-0.449
	(0.284)	(0.248)	(0.301)	(0.256)	(0.269)	(0.279)
OCF	0.462	0.516	0.506	0.459	0.457	0.570
	(0.447)	(0.424)	(0.454)	(0.401)	(0.382)	(0.431)
Roe	-0.099	-0.103	-0.135	-0.095	-0.109	-0.124
	(0.085)	(0.072)	(0.098)	(0.066)	(0.074)	(0.097)
Cash	0.221	0.199	0.264	0.217	0.237	0.226
	(0.208)	(0.188)	(0.229)	(0.194)	(0.213)	(0.217)
Roa	-0.072	-0.160	-0.012	-0.337	0.019	-0.129
	(0.571)	(0.485)	(0.524)	(0.436)	(0.419)	(0.592)
MtB	-0.009	0.006	-0.019	-0.028	-0.021	-0.043
	(0.078)	(0.067)	(0.075)	(0.072)	(0.064)	(0.072)
Lev	-0.003	0.002	0.010	0.009	0.003	0.005
	(0.016)	(0.013)	(0.018)	(0.014)	(0.013)	(0.015)
PPE	0.127	0.113	0.170	0.023	0.087	0.098
	(0.147)	(0.114)	(0.142)	(0.121)	(0.122)	(0.132)
RD	0.035	0.029	0.041	0.046	0.025	0.028
	(0.050)	(0.045)	(0.052)	(0.039)	(0.045)	(0.051)
Constant	0.865***	0.756***	0.792***	0.703***	0.724***	0.808***
	(0.219)	(0.196)	(0.213)	(0.211)	(0.198)	(0.197)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.320	0.315	0.329	0.308	0.386	0.302

Table 10 Innovation Similarity and Employee Satisfaction: Senior and Middle Management Ratings

This table presents the regression results analyzing the relationship between innovation similarity and employee satisfaction, using ratings provided by senior and middle management employees in firms involved in mergers and acquisitions. Satisfaction is measured across seven dimensions: Overall, Career, Benefits, Cultures, Senior, and Balance. The primary independent variables of interest are interaction terms, Lowproduct_Hightech_Post, which tests the employee satisfaction of mergers with varying levels of product and technology overlap, with the analysis controlling for firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. Industry-by-year fixed effects and state fixed effects are included in all models, and robust standard errors are clustered at the firm level. Statistical significance is denoted by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefits	(4) Cultures	(5) Senior	(6) Balance
Lowproduct_Hightech_Post	-0.412***	-0.431***	-0.423***	-0.552***	-0.405***	-0.483***
	(0.110)	(0.103)	(0.114)	(0.112)	(0.103)	(0.108)
Lowproduct_Hightech	-0.086	-0.054	-0.003	-0.061	-0.108	-0.116
	(0.266)	(0.247)	(0.312)	(0.225)	(0.220)	(0.281)
Post	-0.003	-0.048	-0.027	-0.059	-0.022	-0.035
	(0.103)	(0.101)	(0.111)	(0.091)	(0.092)	(0.100)
Similarity_Bena_Post	-0.002	0.013	0.072	0.088	0.042	0.052
	(0.157)	(0.147)	(0.170)	(0.136)	(0.135)	(0.148)
Similarity_Bena	-0.032	-0.015	-0.017	-0.032	0.002	-0.027
	(0.103)	(0.095)	(0.098)	(0.095)	(0.093)	(0.096)
Innovation_Target	0.008	-0.004	-0.004	0.012	0.006	-0.006
	(0.017)	(0.016)	(0.018)	(0.014)	(0.017)	(0.018)
Innovation_Acquirer	0.013	0.014	0.011	0.007	0.009	0.015
	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)
Size	0.076***	0.072***	0.085***	0.053**	0.064***	0.079***
	(0.024)	(0.022)	(0.024)	(0.022)	(0.022)	(0.024)
Capex	-0.221	-0.514	-0.761	-0.144	0.057	-0.245
	(0.910)	(0.797)	(0.973)	(0.867)	(0.837)	(0.931)
NWC	-0.025	-0.037	-0.150	-0.078	-0.076	-0.178
	(0.376)	(0.341)	(0.349)	(0.325)	(0.322)	(0.351)
OCF	-0.593*	-0.426	-0.463	-0.681**	-0.482	-0.508
	(0.351)	(0.314)	(0.373)	(0.308)	(0.323)	(0.372)
Roe	-0.138**	-0.113*	-0.133*	-0.126*	-0.112*	-0.132**
	(0.069)	(0.064)	(0.069)	(0.065)	(0.065)	(0.061)
Cash	-0.149	-0.072	-0.093	-0.090	-0.094	-0.087
	(0.317)	(0.288)	(0.266)	(0.254)	(0.276)	(0.277)
Roa	0.625	0.466	0.462	0.475	0.403	0.228
	(0.557)	(0.545)	(0.585)	(0.512)	(0.519)	(0.546)
MtB	0.109	0.088	0.114	0.107	0.098	0.073
	(0.077)	(0.067)	(0.080)	(0.070)	(0.065)	(0.073)
Lev	0.018	0.013	0.014	0.019	0.010	0.016
	(0.013)	(0.012)	(0.013)	(0.012)	(0.012)	(0.011)
PPE	-0.049	-0.033	-0.008	-0.054	-0.059	-0.127
	(0.137)	(0.126)	(0.135)	(0.141)	(0.123)	(0.147)
RD	-0.006	-0.013	-0.016	0.025	-0.023	-0.032
	(0.031)	(0.028)	(0.032)	(0.025)	(0.026)	(0.030)
Constant	1.790***	1.614***	1.773***	1.490***	1.452***	1.737***
	(0.182)	(0.168)	(0.183)	(0.165)	(0.174)	(0.186)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.332	0.394	0.320	0.354	0.355	0.395

Table 11 Innovation Similarity and Employee Satisfaction: Research Staff Ratings

This table presents the regression results analyzing the relationship between innovation similarity and employee satisfaction, using reviews provided by research and development (R&D) staff in firms involved in mergers and acquisitions. Satisfaction is measured across seven dimensions: Overall, Career, Benefits, Cultures, Senior, and Balance. The primary independent variables of interest are interaction terms, Lowproduct_Hightech_Post, which tests the employee satisfaction of mergers with varying levels of product and technology overlap. Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. Statistical significance is denoted by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefits	(4) Cultures	(5) Senior	(6) Balance
Lowproduct_Hightech_Post	-0.386***	-0.395***	0.428***	0.509***	0.410***	-0.554***
	(0.125)	(0.129)	(0.126)	(0.152)	(0.123)	(0.147)
Lowproduct_Hightech	-0.319	-0.296	-0.191	-0.194	-0.254	-0.337
	(0.298)	(0.279)	(0.332)	(0.266)	(0.251)	(0.316)
Post	-0.043	-0.019	-0.057	-0.077	-0.078	-0.050
	(0.107)	(0.104)	(0.123)	(0.093)	(0.098)	(0.107)
Similarity_Bena_Post	-0.053	-0.018	0.031	0.005	-0.010	0.004
	(0.167)	(0.159)	(0.185)	(0.146)	(0.148)	(0.166)
Similarity_Bena	0.051	0.030	0.060	0.041	0.025	0.030
	(0.076)	(0.064)	(0.073)	(0.070)	(0.062)	(0.072)
Innovation_Target	-0.010	-0.019	-0.011	-0.007	-0.013	-0.011
	(0.015)	(0.012)	(0.015)	(0.013)	(0.012)	(0.016)
Innovation_Acquirer	0.005	0.014	-0.005	-0.002	0.003	0.004
	(0.012)	(0.012)	(0.013)	(0.013)	(0.012)	(0.013)
Size	0.076***	0.074***	0.090***	0.065***	0.059***	0.077***
	(0.025)	(0.023)	(0.025)	(0.022)	(0.022)	(0.023)
Capex	-0.400	-0.580	-0.150	0.085	-0.420	-0.323
	(1.036)	(0.947)	(1.071)	(1.003)	(0.892)	(1.014)
NWC	-0.095	-0.179	-0.257	-0.145	-0.196	-0.270
	(0.341)	(0.314)	(0.328)	(0.281)	(0.287)	(0.316)
OCF	-0.620*	-0.530*	-0.677*	-0.707**	-0.319	-0.550*
	(0.370)	(0.297)	(0.376)	(0.351)	(0.319)	(0.333)
Roe	-0.130*	-0.116**	-0.157**	-0.133**	-0.110**	-0.152**
	(0.066)	(0.058)	(0.066)	(0.060)	(0.055)	(0.064)
Cash	-0.127	-0.055	-0.091	-0.068	-0.024	-0.091
	(0.286)	(0.274)	(0.258)	(0.215)	(0.247)	(0.242)
Roa	0.572	0.219	0.510	0.398	0.291	0.227
	(0.499)	(0.422)	(0.478)	(0.463)	(0.405)	(0.484)
MtB	0.067	0.070	0.077	0.052	0.073	0.058
	(0.082)	(0.069)	(0.085)	(0.076)	(0.066)	(0.076)
Lev	0.015	0.008	0.015	0.019	0.007	0.014
	(0.012)	(0.010)	(0.014)	(0.012)	(0.012)	(0.012)
PPE	0.072	0.062	0.072	0.014	0.085	0.037
	(0.147)	(0.131)	(0.142)	(0.144)	(0.125)	(0.151)
RD	-0.013	-0.012	-0.012	0.029	-0.024	-0.044
	(0.034)	(0.030)	(0.034)	(0.027)	(0.028)	(0.032)
Constant	1.858***	1.569***	1.741***	1.463***	1.508***	1.807***
	(0.178)	(0.159)	(0.173)	(0.158)	(0.161)	(0.162)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R^2	0.327	0.302	0.314	0.350	0.369	0.290

Appendix: Variable Definition

Variable Name	Description	Data Source
Similarity	The calculation is based on the innovation-related sections of the earnings call transcripts of the two merging companies, using the doc2vec model, from which a dummy variable is created that equals 1 if the score is above the median, and 0 otherwise.	Authors calculated
Similarity_Bena	Following Bena and Li (2014), this variable captures the similarity in innovation activity between two firms, calculated as the cosine similarity of their patent vectors across all technological classes, from which a dummy variable is created that equals 1 if the score is above the median, and 0 otherwise.	Bena and Li ,2014
Post	Post is a dummy variable that equals 1 for the acquisition year and all subsequent years, and 0 for all pre-acquisition years.	Authors calculated
Lowproduct	A dummy variable that equals 1 if the product similarity between the merging firms is below the median, and 0 otherwise.	Authors calculated
Hightech	A dummy variable that equals 1 if the technology similarity between the merging firms is above the median, and 0 otherwise.	Authors calculated
Overall	The mean level of employees' overall rating of employer	Glassdoor
Balance	The mean level of employees' rating of work/life balance of employer	Glassdoor
Benefits	The mean level of employees' rating of compensation and benefits of employer	Glassdoor
Career	The mean level of employees' rating of career opportunities of employer	Glassdoor
Cultures	The mean level of employees' rating of culture and values of employer	Glassdoor
Senior	The mean level of employees' rating of senior management of employer	Glassdoor
lnpatent	Defined as the average number of new patent applications filed within three years following the mergers and acquisitions (log-transformed +1).	Kogan et al., 2017
lncitation	Defined as the average number of new patent citations received within three years following the mergers and acquisitions (log-transformed +1).	Kogan et al., 2017
lnvalue	Defined as the average value of patent within three years following the mergers and acquisitions (log-transformed +1).	Kogan et al., 2017
Obsolescence	Technological obsolescence is defined by measuring the rate of change in external citation counts of patents previously cited by the company.	Ma, 2023
Lev	Sum of long-term debt and debt in current liabilities divided by the book value of net assets.	Compustat
Roa	Annual return on assets defined as Net Income divided by Total Assets.	Compustat
Cash	Cash defined as Cash Holdings divided by Total Assets.	Compustat
PPE	Ratio of Property, Plant, and Equipment to sales.	Compustat
Roe	Annual return on equity defined as Net Income divided by Total Equity.	Compustat
OCF	OCF defined as Operating Cash Flow divided by sales.	Compustat
NWC	Ratio of net working capital to sales.	Compustat
Capex	Ratio of capital expenditure to sales.	Compustat
Size	Natural log of price times shares outstanding at the end of June of the year preceding the measurement year.	CRSP
Innovation_target	Measures the innovation culture of the target firm based on textual analysis of its earnings call transcripts, following the methodology of Li et al., (2021).	Li et al., 2021.
Innovation_acquirer	Measures the innovation culture of the acquirer firm based on textual analysis of its earnings call transcripts, following the methodology of Li et al., (2021).	Li et al., 2021.

Table IA1 Impact of Employees Satisfaction on Corporate Innovation

The table presents the estimation results of panel regressions examining the relationship between levels of employees' ratings of their employer (Overall) and innovation outcomes. The dependent variables reflect various dimensions of innovation outcomes (lnpatent, lncitation, lnvalue and Obsolescence). Overall is the main independent variable of interest, while control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). Definitions of these variables are provided in the Appendix. All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) lnpatent	(2) lncitation	(3) lnvalue	(4) Obsolescence
Overall	0.062***	0.125***	0.087***	0.010***
	(0.015)	(0.031)	(0.020)	(0.003)
Similarity_Bena	0.025	0.030	0.050	0.029
	(0.062)	(0.072)	(0.076)	(0.065)
Innovation_Target	-0.011	-0.067	-0.070	0.001
	(0.019)	(0.065)	(0.042)	(0.001)
Innovation_Acquirer	0.010	-0.054	0.041	-0.001
	(0.023)	(0.046)	(0.037)	(0.001)
Size	0.059*	0.054*	0.124**	0.002*
	(0.030)	(0.031)	(0.055)	(0.001)
Capex	-1.317*	-0.844	-2.219	0.055
	(0.780)	(0.915)	(1.505)	(0.045)
NWC	0.088	0.112	0.060	-0.001
	(0.234)	(0.334)	(0.443)	(0.013)
OCF	0.226	-0.383	-0.386	-0.023
	(0.386)	(0.510)	(0.768)	(0.016)
Roe	0.162	0.133*	0.236	0.001
	(0.160)	(0.073)	(0.155)	(0.010)
Cash	0.069	0.115	0.054	-0.011
	(0.141)	(0.193)	(0.222)	(0.009)
Roa	-1.231**	-0.342	-0.901	-0.011
	(0.620)	(0.608)	(0.944)	(0.042)
MtB	0.069	0.207	0.347**	-0.000
	(0.084)	(0.134)	(0.154)	(0.004)
Lev	0.030	0.021	0.077***	0.002
	(0.025)	(0.015)	(0.027)	(0.002)
PPE	-0.143	-0.224	-0.247	-0.007
	(0.110)	(0.149)	(0.208)	(0.005)
RD	0.062	-0.166*	0.137*	0.007***
	(0.041)	(0.099)	(0.078)	(0.002)
Constant	0.632**	0.973***	0.861*	0.016
	(0.255)	(0.324)	(0.444)	(0.013)
Observations	2,191	2,191	2,191	2,191
Adjusted R²	0.575	0.547	0.591	0.232

Table IA2 Topic Analysis of Employee Reviews Before and After the Merger – High Innovation Similarity

Table IA2 reports the results of a topic analysis of employee reviews submitted prior to mergers between firms with high innovation similarity. We apply Latent Dirichlet Allocation (LDA), an unsupervised machine learning algorithm, to identify ten dominant topics that emerge consistently across employee narratives. Each topic is labeled with an intuitive descriptor and accompanied by a set of representative keywords that capture its underlying content. The columns "Covered Firms" and "Review Count" indicate the number of distinct firms contributing to each topic and the total number of reviews in which the topic appears, respectively.

Panel A: Before Merger

Sequence	Topic Name	Keywords	Covered Firms	Review Count
1	Leadership & Management	leadership, management, communication, trust, alignment, guidance, feedback, performance, direction, collaboration	123	25012
2	Work-Life Balance	flexibility, balance, wellness, autonomy, rest, fatigue, time, stress, satisfaction, schedule	116	18994
3	Career Growth	growth, development, skills, goals, learning, ambition, coaching, progression, experience, potential	120	18248
4	Innovation & Strategy	strategy, planning, innovation, foresight, execution, goals, disruption, focus, roadmap, vision	118	14783
5	Compensation & Benefits	salary, bonuses, insurance, perks, stock, wellness, coverage, retirement, leave, incentives	104	12798
6	Job Security & Change	security, change, layoffs, stability, transition, restructuring, retention, risk, trust, reorganization	117	10731
7	Company Culture	culture, values, respect, openness, inclusion, diversity, belonging, collaboration, atmosphere, identity	108	10112
8	Performance & Recognition	performance, feedback, goals, recognition, appraisal, rewards, metrics, achievement, contribution, evaluation	106	8309
9	Tech & Innovation	technology, innovation, systems, automation, tools, software, scalability, improvement, process, development	99	6930
10	Organizational Transformation	clarity, shared vision, strategic coherence, communication, role clarity, leadership consistency, goal alignment, unity, focus, transparency	99	5875

Panel B: After Merger

Sequence	Topic Name	Keywords	Covered Firms	Review Count
1	Innovation & Strategy	strategy, planning, innovation, foresight, goals, execution, disruption, transformation, roadmap, adaptability	143	26112
2	Job Security & Change	security, change, layoffs, stability, restructuring, transition, trust, risk, continuity, reorganization	152	25563
3	Work-Life Balance	balance, flexibility, rest, autonomy, wellness, boundaries, fatigue, time, workload, satisfaction	144	23057
4	Workplace Uncertainty	uncertainty, instability, doubt, ambiguity, miscommunication, change, inconsistency, fear, confusion, rumors	142	20928
5	Career Growth	growth, skills, ambition, coaching, learning, development, mobility, progression, goals, potential	147	17853
6	Compensation & Benefits	salary, insurance, bonuses, perks, stock, wellness, coverage, retirement, leave, incentives	148	16789
7	Tech & Innovation	technology, innovation, automation, tools, systems, integration, modernization, development, efficiency, agility	151	16503
8	Leadership & Management	leadership, management, alignment, feedback, direction, support, communication, trust, recognition, structure	151	13560
9	Performance & Recognition	performance, recognition, feedback, goals, evaluation, rewards, metrics, targets, achievement, appraisal	145	13062
10	Company Culture	culture, values, identity, inclusion, respect, openness, collaboration, diversity, belonging, atmosphere	148	11905

Table IA3 Topic Analysis of Employee Reviews Before and After the Merger – Low Innovation Similarity

Table IA3 reports the results of a topic analysis of employee reviews submitted prior to mergers between firms with low innovation similarity. We apply Latent Dirichlet Allocation (LDA), an unsupervised machine learning algorithm, to identify ten dominant topics that emerge consistently across employee narratives. Each topic is labeled with an intuitive descriptor and accompanied by a set of representative keywords that capture its underlying content. The columns "Covered Firms" and "Review Count" indicate the number of distinct firms contributing to each topic and the total number of reviews in which the topic appears, respectively.

Panel A: Before Merger

Sequence	Topic Name	Keywords	Covered Firms	Review Count
1	Leadership & Management	leadership, management, communication, trust, alignment, direction, guidance, team, supervisor, structure	102	24779
2	Work-Life Balance	balance, flexibility, hours, satisfaction, autonomy, stress, wellbeing, rest, time, workday	101	24514
3	Career Growth	growth, development, skills, training, mobility, learning, goals, coaching, potential, experience	104	23395
4	Company Culture	culture, identity, environment, inclusion, respect, collaboration, atmosphere, misalignment, values, belonging	97	18957
5	Compensation & Benefits	salary, bonus, benefits, insurance, stock, perks, retirement, compensation, coverage, incentives	81	17282
6	Performance & Recognition	performance, goals, recognition, feedback, results, effort, contribution, appraisal, hardwork, achievement	90	17132
7	Tech & Innovation	technology, systems, tools, automation, engineering, improvement, operations, internal, integration, scalability	92	16575
8	Collaboration	trust, communication, conflict resolution, team roles, psychological safety, shared goals, synergy, accountability, feedback, diversity of thought	96	12412
9	Organizational Transformation	change, reorganization, digital transformation, agility, redesign, systems, modernization, adaptation, renewal, restructuring	82	11199
10	Growth Strategy	scaling, targets, expansion, optimization, value creation, goal-setting, productivity, growth metrics, planning, execution	91	8929

Panel B: After Merger

Sequence	Topic Name	Keywords	Covered Firms	Review Count
1	Leadership & Management	leadership, communication, management, alignment, direction, feedback, trust, recognition, team, guidance	122	25322
2	Work-Life Balance	flexibility, balance, time, autonomy, rest, wellness, satisfaction, fatigue, hours, workday	117	25218
3	Compensation & Benefits	salary, insurance, bonus, perks, stock, retirement, leave, coverage, incentives, wellness	126	24317
4	Company Culture	culture, identity, respect, inclusion, values, collaboration, morale, environment, voice, atmosphere	122	24188
5	Performance & Recognition	performance, feedback, recognition, goals, achievement, metrics, targets, results, effort, rewards	124	19422
6	Tech & Innovation	technology, innovation, systems, automation, tools, engineering, integration, modernization, efficiency, processes	123	17761
7	Career Growth	growth, development, skills, learning, coaching, progression, potential, ambition, training, experience	124	17653
8	Growth Strategy	scaling, systems thinking, growth engines, expansion, efficiency, resource planning, market entry, team growth	124	16892
9	Job Security & Change	job security, layoffs, risk, trust, restructuring, continuity, reorganization, transition, fear, stability	121	16726
10	Workplace Uncertainty	ambiguity, instability, structure, change, miscommunication, doubt, inconsistency, transition, fear, confusion	119	11697

Table IA4 Innovation Similarity and Employee Satisfaction: Alternative Sample Evidence

This table reports the regression results examining the relationship between innovation similarity and employee satisfaction using an alternative sample. Panel A reports the regression results for former employees, i.e., those who had already left the company when giving their satisfaction rating. Panel B focuses on employee satisfaction ratings from the regions where target companies of mergers and acquisitions are located. Panel C uses ratings provided by senior and middle management employees in firms involved in mergers and acquisitions. Panel D relies on reviews provided by research and development (R&D) staff in firms involved in mergers and acquisitions. Employee satisfaction is measured across multiple dimensions, including Overall, Career, Benefits, Cultures, Senior, and Balance. The regressions include standard control variables such as firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). In addition, we control for Innovation_Target and Innovation_Acquirer, following Li et al. (2021), to capture the pre-existing innovation culture of the target and acquirer firms. Definitions of all variables are provided in the Appendix. All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. Statistical significance is denoted by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

Panel A	(1)	(2)	(3)	(4)	(5)	(6)
			Former employee satisfaction			
	Overall	Career	Benefits	Cultures	Senior	Balance
Similarity_Post	-0.469***	-0.562***	-0.522***	-0.673***	-0.439***	-0.545***
	(0.094)	(0.204)	(0.185)	(0.189)	(0.132)	(0.184)
Similarity	0.023	-0.004	-0.057	-0.029	-0.009	-0.024
	(0.054)	(0.045)	(0.059)	(0.052)	(0.047)	(0.055)
Post	0.012	0.002	0.024	0.066	-0.010	-0.001
	(0.068)	(0.065)	(0.073)	(0.057)	(0.063)	(0.069)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.242	0.182	0.233	0.266	0.178	0.212
Panel B			Target Regions			
	Overall	Career	Benefits	Cultures	Senior	Balance
Similarity_Post	-0.326***	-0.270***	-0.247***	-0.298***	-0.234***	-0.206***
	(0.105)	(0.092)	(0.088)	(0.094)	(0.079)	(0.063)
Similarity	-0.115**	-0.137	-0.250*	-0.128	-0.200**	-0.277*
	(0.047)	(0.126)	(0.150)	(0.114)	(0.094)	(0.145)
Post	-0.102**	-0.173	-0.196	-0.139**	-0.165	-0.177
	(0.045)	(0.127)	(0.149)	(0.062)	(0.115)	(0.132)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.316	0.313	0.326	0.305	0.382	0.398
Panel C			Senior and Middle Management Ratings			
	Overall	Career	Benefits	Cultures	Senior	Balance
Similarity_Post	-0.314***	-0.282***	-0.293***	-0.229***	-0.266***	-0.291***
	(0.101)	(0.095)	(0.107)	(0.053)	(0.074)	(0.085)
Similarity	-0.274	-0.164**	-0.367	-0.104*	-0.129	-0.095
	(0.187)	(0.067)	(0.381)	(0.056)	(0.287)	(0.365)
Post	-0.055	-0.124	-0.072	-0.124	-0.094	-0.087
	(0.127)	(0.122)	(0.139)	(0.102)	(0.112)	(0.126)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.332	0.395	0.320	0.354	0.355	0.395
Panel D			Research Staff Ratings			
	Overall	Career	Benefits	Cultures	Senior	Balance
Similarity_Post	-0.316***	-0.264***	-0.226***	-0.255***	-0.198***	-0.237***
	(0.102)	(0.087)	(0.063)	(0.076)	(0.056)	(0.075)
Similarity	-0.124	-0.192**	-0.083	-0.156**	-0.123	-0.104
	(0.092)	(0.086)	(0.233)	(0.066)	(0.166)	(0.221)
Post	-0.044	-0.048	-0.040	-0.100	-0.103	-0.040
	(0.130)	(0.123)	(0.141)	(0.105)	(0.116)	(0.129)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.325	0.300	0.313	0.350	0.368	0.388

Table IA5 Innovation Similarity and Corporate Innovation: An Alternative Measure

The table presents the results of panel regression analyses investigating how different merger characteristics—specifically the interplay between product and technological similarity—relate to corporate innovation outputs. The dependent variables in Columns (1) to (4) represent different dimensions of corporate innovation: *lnpatent*, *lncitation*, *lnvalue*, and *Obsolescence*. *lnpatent* reflects the average number of new patent applications filed within three years following the mergers and acquisitions (log-transformed +1), while the remaining columns capture measures of patent citation impact (*lncitation*), patent value (*lnvalue*), and innovation obsolescence (*Obsolescence*). The primary independent variable of interest is Lowproduct_HP_Hightech_BL_Post, which tests the innovation outcomes of mergers with varying levels of product and technology overlap. Product similarity is measured based on Hoberg and Phillips (2016), while technology similarity is based on Bena and Li (2014). Control variables include Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) lnpatent	(2) lncitation	(3) lnvalue	(4) Obsolescence
Lowproduct_HP_Hightech_BL_Post	-0.627**	-0.002	-0.592*	0.007
	(0.315)	(0.246)	(0.349)	(0.012)
Lowproduct_HP_Hightech_BL	0.171	-0.572**	-0.059	-0.006
	(0.330)	(0.285)	(0.444)	(0.012)
Post	0.297**	0.535**	0.638**	0.012
	(0.128)	(0.208)	(0.255)	(0.008)
Similarity_Bena_Post	0.016	-0.272	0.154	-0.010
	(0.176)	(0.236)	(0.275)	(0.009)
Similarity_Bena	-0.499	-0.467	-0.870	-0.011
	(0.422)	(0.464)	(0.854)	(0.010)
Innovation_Target	-0.013	-0.051	-0.055	0.006
	(0.022)	(0.055)	(0.042)	(0.006)
Innovation_Acquirer	-0.005	-0.061	0.038	0.001
	(0.020)	(0.055)	(0.034)	(0.002)
Size	0.085***	0.089***	0.113***	0.000
	(0.028)	(0.033)	(0.043)	(0.001)
Capex	0.207	0.680	-0.724	0.071
	(1.250)	(1.733)	(1.551)	(0.064)
NWC	-0.608**	-0.609**	-0.863**	-0.016
	(0.242)	(0.271)	(0.388)	(0.010)
OCF	0.236	-0.185	0.268	-0.005
	(0.390)	(0.497)	(0.608)	(0.018)
Roe	0.142	0.081	0.212	0.001
	(0.135)	(0.092)	(0.140)	(0.006)
Cash	0.414**	0.492***	0.615**	-0.003
	(0.184)	(0.185)	(0.254)	(0.006)
Roa	0.481	1.397**	1.476	0.006
	(0.636)	(0.664)	(1.116)	(0.039)
MtB	-0.049	0.013	0.150	0.009**
	(0.080)	(0.091)	(0.131)	(0.004)
Lev	0.024	0.022	0.062***	0.002*
	(0.022)	(0.014)	(0.023)	(0.001)
PPE	-0.159	-0.192	-0.222	-0.006
	(0.137)	(0.180)	(0.189)	(0.007)
RD	0.213***	0.147***	0.294***	0.005***
	(0.031)	(0.045)	(0.052)	(0.002)
Constant	0.584***	0.804***	1.083***	0.011
	(0.201)	(0.244)	(0.389)	(0.011)
Observations	2,191	2,191	2,191	2,191
Adjusted R^2	0.367	0.335	0.311	0.255

Table IA6 Innovation Similarity and Employees Satisfaction: An Alternative Measure

The table presents the results of panel regression analyses investigating how different merger characteristics - specifically the interplay between product and technological - relate to employee satisfaction. Satisfaction is measured across seven dimensions: Overall, Career, Benefits, Cultures, Senior, and Balance. The primary independent variable of interest is Lowproduct_HP_Hightech_BL_Post, which tests the employee satisfaction of mergers with varying levels of product and technology overlap. Product similarity is measured based on Hoberg and Phillips (2016), while technology similarity is based on Bena and Li (2014). Control variables include firm size (Size), capital expenditures (Capex), net working capital (NWC), operating cash flow (OCF), return on equity (Roe), cash holdings (Cash), return on assets (Roa), market-to-book ratio (MtB), leverage (Lev), property, plant, and equipment (PPE), and R&D expenditure (RD). We incorporate two additional control variables, *Innovation_Target* and *Innovation_Acquirer*, to account for the innovation culture of the target and acquirer firms, following the methodology of Li et al., (2021). All models incorporate industry-by-year fixed effects, and state fixed effects, and robust standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Overall	(2) Career	(3) Benefit	(4) Culture	(5) Senior	(6) Balance
Lowproduct_HP_Hightech_BL_Post	-0.094	-0.124	-0.104	-0.144	-0.160*	-0.164
	(0.090)	(0.097)	(0.125)	(0.108)	(0.096)	(0.120)
Lowproduct_HP_Hightech_BL	0.080	0.198**	-0.019	0.178*	0.166*	0.108
	(0.101)	(0.090)	(0.114)	(0.106)	(0.085)	(0.097)
Post	0.117	0.065	0.035	0.178***	0.133*	-0.000
	(0.078)	(0.083)	(0.070)	(0.069)	(0.073)	(0.086)
Similarity_Bena_Post	-0.096	0.081	0.066	-0.073	-0.049	0.147
	(0.079)	(0.090)	(0.090)	(0.087)	(0.087)	(0.100)
Similarity_Bena	0.069	-0.081	-0.113	0.017	0.030	-0.175**
	(0.082)	(0.082)	(0.087)	(0.083)	(0.075)	(0.086)
Innovation_Target	0.013	0.012	0.018	0.039**	0.025	0.013
	(0.017)	(0.017)	(0.016)	(0.017)	(0.016)	(0.014)
Innovation_Acquirer	-0.016	-0.003	-0.024*	-0.016	-0.020	-0.019
	(0.014)	(0.012)	(0.014)	(0.013)	(0.013)	(0.014)
Size	-0.005	-0.009	0.016	-0.013	-0.017**	-0.006
	(0.008)	(0.008)	(0.011)	(0.008)	(0.008)	(0.009)
Capex	0.745	0.281	0.697*	0.621	0.333	0.641
	(0.465)	(0.489)	(0.394)	(0.546)	(0.528)	(0.522)
NWC	-0.242***	-0.220**	-0.068	-0.104	-0.079	-0.170*
	(0.088)	(0.089)	(0.091)	(0.132)	(0.135)	(0.100)
OCF	-0.051	-0.086	-0.058	-0.044	-0.000	-0.163
	(0.152)	(0.176)	(0.182)	(0.157)	(0.167)	(0.169)
Roe	-0.046	-0.049	-0.012	-0.121**	-0.041	-0.027
	(0.030)	(0.031)	(0.032)	(0.052)	(0.037)	(0.043)
Cash	0.244***	0.198***	0.029	0.118	0.098	0.112
	(0.066)	(0.065)	(0.063)	(0.111)	(0.116)	(0.075)
Roa	-0.234	-0.190	-0.056	-0.065	-0.183	0.302
	(0.272)	(0.265)	(0.297)	(0.423)	(0.292)	(0.344)
MtB	0.096***	0.074***	0.034	0.079***	0.093***	0.011
	(0.021)	(0.022)	(0.027)	(0.026)	(0.023)	(0.027)
Lev	0.004	-0.010**	-0.007	0.001	0.001	0.007
	(0.007)	(0.005)	(0.007)	(0.009)	(0.008)	(0.008)
PPE	-0.113*	-0.083	0.010	-0.108	-0.018	-0.057
	(0.060)	(0.071)	(0.071)	(0.082)	(0.062)	(0.077)
RD	0.030***	0.024***	0.015*	0.020**	0.017**	0.001
	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Constant	2.925***	2.673***	2.898***	2.123***	2.349***	2.952***
	(0.091)	(0.104)	(0.097)	(0.082)	(0.084)	(0.103)
Observations	2,191	2,191	2,191	2,191	2,191	2,191
Adjusted R²	0.216	0.163	0.227	0.250	0.195	0.187