

Brede, Marius; Gerstel, Hannes; Wöhrmann, Arnt; Bausch, Andreas

Article — Published Version

Mind the gap: the effect of cultural distance on mergers and acquisitions—evidence from glassdoor reviews

Review of Managerial Science

Provided in Cooperation with:

Springer Nature

Suggested Citation: Brede, Marius; Gerstel, Hannes; Wöhrmann, Arnt; Bausch, Andreas (2024) : Mind the gap: the effect of cultural distance on mergers and acquisitions—evidence from glassdoor reviews, Review of Managerial Science, ISSN 1863-6691, Springer, Berlin, Heidelberg, Vol. 19, Iss. 8, pp. 2279-2326,
<https://doi.org/10.1007/s11846-024-00811-8>

This Version is available at:

<https://hdl.handle.net/10419/323708>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<http://creativecommons.org/licenses/by-nc-nd/4.0/>



Mind the gap: the effect of cultural distance on mergers and acquisitions—evidence from glassdoor reviews

Marius Brede¹ · Hannes Gerstel¹ · Arnt Wöhrmann¹ · Andreas Bausch¹

Received: 4 August 2023 / Accepted: 10 September 2024 / Published online: 5 October 2024
© The Author(s) 2024, corrected publication 2025

Abstract

This paper investigates the impact of differences in organizational culture on M&A outcomes during the transaction and post-merger integration phase. Using a state-of-the-art large language model, we construct a novel measure of organizational cultural distance based on employee reviews from Glassdoor.com covering 243 M&A deals from 2008 to 2021. First, we hypothesize and find that organizational cultural distance between acquirer and target firms lead to cultural frictions during the transaction and post-merger integration phases of the deal, which negatively affect short-term capital market reactions and long-term synergy gains. Second, our results suggest that cultural differences are positively related to the acquisition premium paid by the acquirer, supporting the hypothesis that cultural distance reduces the acquirer's ability to accurately assess the true value of the target, leading to an overestimation of the realizable synergy potential. Third, we show that cultural distance is negatively related to the long-term innovativeness of the acquiring firm. Specifically, our results suggest that patent growth and new product development, measured two years after the deal, are significantly lower for firms that acquire a culturally distant target. We then examine the underlying cultural dimensions that drive these effects. Consistent with previous studies, we find that performance effects are driven by differences in market orientation, while innovation effects are driven by differences in hierarchy or adhocracy orientation, depending on whether innovation is measured in terms of tangible or intangible assets. Our findings contribute to the broad M&A literature and have practical relevance for firms engaged in M&A transactions.

Keywords Organizational culture · Cultural distance · Mergers and acquisitions · M&A performance · Innovation · Natural language processing

JEL Classification M140 · G340 · C450

1 Introduction

Mergers and Acquisitions (M&A) have become one of the most significant strategic initiatives for firms, with global transaction volumes reaching \$3.7 trillion in 2017 (Cho and Chung 2022). However, despite their importance, nearly half of all M&A deals fail to meet their objectives (Cartwright and Cooper 1993). A major factor contributing to this high failure rate is the cultural differences between acquiring and target firms (Stahl and Voigt 2008). For example, a survey of senior executives found that almost 50% would avoid pursuing an acquisition if the target company's culture did not align with their own. This reluctance to engage with culturally incompatible partners reflects well-documented cases where cultural clashes were cited as reasons for the failure of high-profile deals, such as HP's acquisition of Compaq and Amazon's purchase of Whole Foods (Oberoi 2020). These findings suggest that cultural misalignment significantly reduces M&A success, underscoring the critical role of cultural fit.

Management literature typically distinguishes between national culture and organizational culture (Rottig 2017). Both are considered distinct phenomena, each with unique manifestations and different implications for an organization's actions (Kirkman et al. 2006). While numerous studies have empirically examined the impact of national cultural distance on M&A outcomes (e.g., Ahern et al. 2015; Lee 2018; Lim et al. 2016), research on the impact of organizational culture is scarce and largely inconclusive, primarily due to limitations in measuring organizational culture (Renneboog and Vansteenkiste 2019; Rottig 2017).

To fill this gap, we analyze the impact of organizational cultural distance between firms involved in an M&A transaction on economically important outcomes such as M&A success, acquisition premiums, and post-deal innovation of the acquiring firm. We derive our proxy for organizational cultural distance directly from Glassdoor.com, where employees anonymously rate their employers and provide textual feedback about their workplace experiences. This method allows us to overcome some of the limitations of previous studies that often rely on subjective measures such as self-reported surveys, which reduce the comparability and objectivity of the results.

Using this novel approach, we hypothesize that the capital market reacts negatively to announcements of M&A transactions between firms with high organizational cultural distance (H1a) and that organizational cultural distance leads to lower post-merger synergy realization (H1b). Previous research has provided mixed evidence on the impact of cultural differences on M&A success (Rottig 2017; Stahl and Voigt 2008). On the one hand, the cultural learning hypothesis suggests that different cultures offer learning potential and opportunities for resource recombination (Pesch and Bouncken 2017; Sørensen 2002). On the other hand, the cultural friction hypothesis (Hofstede 1980) argues that cultural differences between acquirers and targets increase integration and coordination costs, thereby reducing M&A performance (Vaara 2002; Weber 1996). We expect that the frictions associated with cultural differences will outweigh the potential learning benefits, leading to lower capital market reactions and reduced post-merger synergies.

Second, we hypothesize that organizational cultural differences lead to higher acquisition premiums (H2). Similar to the relationship between cultural distance and M&A success, the link between organizational cultural distance and acquisition premiums remains underexplored and contradictory (Lim et al. 2016). We argue that differences in processes, structures, and strategies resulting from organizational culture differences hinder the acquirer's ability to accurately assess the target's value, leading to overpayment and higher premiums.

Third, as one of the first studies to examine organizational cultural distance and long-term innovation outcomes in M&A, we hypothesize that cultural differences negatively affect the acquirer's long-term innovativeness. Following the cultural friction hypothesis, we propose that organizational cultural differences hinder knowledge sharing, collaboration, and coordination during the innovation process, ultimately reducing the acquirer's post-acquisition patent growth (H3a) and the rate of new product development (H3b).

Past research, including Rottig's (2017) meta-analysis, has highlighted the complexity of the culture construct and attributed conflicting findings to the methodological weaknesses of previous studies, which often rely on small-scale surveys of high-level employees to assess organizational culture. Other methods, such as analyzing corporate values on company websites, have demonstrated low internal validity (Graham et al. 2022) and predictive power (Guiso et al. 2015). To overcome these limitations, we apply deep-learning-based natural language processing to approximately 400,000 employee reviews from 437 firms (243 M&A deals) on Glassdoor, spanning the years 2008–2021. This approach leverages individual employee experiences to provide a more granular view of organizational culture (Corritore et al. 2020; Ji et al. 2022).

In the literature, organizational culture is primarily studied using the Competing Values Framework (CVF, Cameron et al. 2006; Quinn and Rohrbaugh 1983), which conceptualizes culture along four dimensions: Adhocracy, Clan, Market, and Hierarchy. These dimensions are arranged along two continuums, reflecting the organization's preference for flexibility or control, and its internal or external focus. Using state-of-the-art language models (Bochkay et al. 2023; Vaswani et al. 2017), we apply Culture-BERT (Koch and Pasch 2022) to Glassdoor reviews to measure the salience of each cultural dimension. We then adapt Kogut and Singh's (1988) popular measure of cultural distance to compute the organizational cultural distance between acquirers and targets. This measure of organizational cultural distance serves as the key variable for explaining M&A outcomes.

Our analyses offer several important insights. First, in line with the cultural friction hypothesis, we find that organizational cultural distance is negatively associated with both capital market reactions and long-term synergies. Further analysis shows that differences in market orientation between acquirers and targets primarily drive this negative performance effect, aligning with previous findings by Deshpandé and Farley (2004) and Eisend et al. (2016) that emphasize market orientation as a key driver of firm performance. Second, our results suggest that organizational cultural distance leads to higher acquisition premiums by impairing the acquirer's ability to accurately value the target and assess synergy potential. Third, we find that cultural differences negatively affect the acquirer's post-deal innovativeness, with reduced

patent growth and new product development two years after the acquisition. Additional analyses indicate that this effect is mainly driven by differences in adhocracy and hierarchy orientation for patent growth and new product development. These results suggest that target firms that place significantly less emphasis on values such as innovativeness or agility may hinder the acquirer's post-deal inventiveness, whereas target firms that place greater emphasis on values such as efficiency or timeliness (i.e., hierarchy culture) may hinder new product development. Finally, we perform several robustness checks to validate our results.

To our knowledge, our study is the first to use transformer-based natural language processing on a large sample of Glassdoor reviews to infer the impact of organizational cultural distance on M&A outcomes. In doing so, we contribute to the broader M&A literature in several ways: First, we address a notable criticism of the widespread reliance on small-scale surveys that use subjective measures (e.g., self-reported surveys and interviews) to assess organizational culture and its impact on M&A outcomes (Rottig 2017; Teerikangas and Very 2006). To mitigate the risk of methodological bias, increase objectivity, and improve the comparability of results, we derive our cultural distance proxy from thousands of voluntarily written employee reviews. This approach provides a more representative and nuanced understanding of organizational culture (Campbell and Shang 2021). By doing so, we contribute to the management literature that analyzes organizational culture using rich textual data from sources such as annual reports and employee reviews (e.g., Campbell and Shang 2021; Corritore 2018; Li et al. 2021). Additionally, we utilize a state-of-the-art transformer model that has shown up to 28% higher accuracy in inferring organizational culture compared to previous methods (Koch and Pasch 2022), addressing several limitations of earlier analytical methods.

Second, we address the previously inconclusive findings on the impact of organizational cultural differences on short- and long-term M&A performance (Rottig 2017; Stahl and Voigt 2008). Our results indicate that the cultural friction hypothesis outweighs the cultural learning hypothesis, with differences in market orientation between acquirers and targets emerging as the main driver of performance effects. Unlike recent studies examining cultural differences in M&A outcomes (e.g., Alexandridis et al. 2022; Bereskin et al. 2018), our study does not focus on specific aspects of organizational culture (e.g., CSR orientation). Instead, we use a widely accepted framework for assessing corporate culture, drawing insights from a diverse and complex set of employee reviews. Additionally, our methodology avoids subjective third-party assessments, resulting in more nuanced and representative findings.

Third, our study contributes to the literature on acquisition premiums and their role in the success or failure of M&As (King et al. 2021). To our knowledge, there is limited evidence on the effect of national cultural differences on acquisition premiums (Lim et al. 2016) and no evidence regarding the effect of organizational cultural distance. Our results suggest that organizational cultural distance may contribute to the misvaluation of target firms, providing a possible explanation for the inconsistent empirical findings on M&A success in the existing literature.

Finally, we are among the first to explore the long-term consequences of organizational cultural distance on the acquirer's post-deal innovativeness. Consistent with previous studies on the effects of national cultural distance (e.g., Bauer et al. 2016),

we find that organizational cultural distance between the acquirer and the target has a detrimental effect on the acquirer's post-deal innovativeness. This effect holds true for both patent growth and new product development, demonstrating the robustness of our findings across different measures of innovation. However, a more detailed analysis reveals that specific cultural dimensions shape these outcomes: differences in adhocracy culture drive the negative effect on patent growth, while differences in hierarchy culture explain the negative effect on new product development.

In conclusion, our research extends the managerial literature by deepening the understanding of the impact of organizational cultural distance on M&A success.

2 Hypotheses development

2.1 Organizational cultural distance, capital market reactions, and post-deal synergies

Culture is generally defined as “the collective programming of the mind which distinguishes the member of one group or category of people from another” (Hofstede 2001, p. 9). It is often conceptualized as an informal institution that consists primarily of unwritten social rules, values and norms that are shaped by the shared history and experiences of its members (Louis 1981; Schein 1985). As such, culture significantly influences social interactions by shaping expectations and determining acceptable social behavior (Hofstede 1980). Moreover, culture serves as an organizational mechanism for coordinating the activities of a large number of individuals by providing a control system for setting goals, evaluating deviations, and providing feedback to individuals. These social control mechanisms can effectively ensure predictable behavior among organizational members through norms or social expectations (Chatman and O'Reilly 2016). Culture is generally viewed as a multi-level construct that operates at both the national and firm levels, with variations in organizational culture often reflecting differences in national culture (Chakrabarti et al. 2009; Schneider 1988). However, Dauber (2012) suggests that because M&A transactions involve firms rather than countries, differences in organizational culture may be a more accurate predictor of M&A performance than differences in national culture. Research generally supports this idea, showing that organizational culture affects various organizational practices, including behavioral norms, decision making, and strategic initiatives such as outsourcing (e.g., Dahlgrün and Bausch 2019), CSR (e.g., Chen and Liu 2022), innovation (e.g., Büschgens et al. 2013) and M&A (e.g., Bhagat and McQuaid 1982; Kirkman et al. 2006).

Regarding the impact of culture on M&A performance, numerous studies and several meta-analyses conducted over the past decades have failed to reach a consensus on whether cultural differences between the acquirer and target have a positive or negative effect on M&A performance (e.g., King et al. 2021; Rottig 2017; Stahl and Voigt 2008). However, there is general agreement that the cultural fit between acquirer and target influences M&A performance, independent of other strategic considerations (Bauer and Matzler 2014). In an attempt to disentangle the complex dynamics of M&A transactions, the literature often

differentiates between short-term performance effects, typically measured by market reactions around deal announcements (Aktas et al. 2011), and long-term performance effects, usually measured using accounting-based metrics (Zollo and Meier 2008). Following this convention, we separately hypothesize the effects of organizational cultural distance on short-term market reactions (H1a) and long-term synergies (H1b).

Theoretical arguments for the positive impact of cultural differences on M&A performance are primarily based on the theory of interorganizational learning (Sørensen 2002), according to which M&As involving culturally distant firms provide significant learning opportunities that enable the profitable recombination of resources. Acquiring a firm with a different culture facilitates knowledge transfer and provides access to new practices and techniques (Chakrabarti et al. 2009; Morosini et al. 1998; Sarala and Vaara 2010), creating a sustainable source of value creation (Bouwman 2013; Haspeslagh and Jemison 1991). This view is shared by the information processing hypothesis, which argues that both acquiring and target firms can benefit from the multiple perspectives associated with greater cultural distance (Kogut and Singh 1988; Watson et al. 1993), leading to enhanced problem solving, creativity, innovation, adaptability, and ultimately improved performance (Chakrabarti et al. 2009; Morosini et al. 1998). For example, Krishnan et al. (1997) find that differences in the skills and competencies of the acquiring and target management teams positively affect M&A performance, as the weaknesses of one firm can be offset by the strengths of the other.

However, contrary to the cultural learning hypothesis, organizational cultural distance between acquirers and targets may be a source of friction in the post-merger integration phase (Vaara 2002; Weber 1996). These frictions can arise from personality clashes among senior executives, incompatible organizational structures and processes, or challenges in transferring core competencies and knowledge between firms (Ahammad et al. 2016; Rottig 2017). For example, Datta (1991), in a study of domestic M&A transactions in the United States, shows that incompatible management styles of acquiring and target firms can lead to reduced market performance and realized synergies. Drawing on social identity theory (Tajfel 1981; Turner 1982), Stahl and Voigt (2008) further suggest that organizational members are biased towards in-group members and tend to evaluate out-group members negatively in order to enhance the relative status of their own group. This negative impact on the internal cohesion of the workforce can reduce intergroup trust (Sitkin and Stickel 1996), thereby increasing the potential for conflict (e.g., Ahern et al. 2015; Jehn et al. 1999; Martin 1992). In addition, internal tensions within the workforce can negatively affect the flow of information between members of the acquirer and the target. As a result, employee and stakeholder resistance can escalate and impede efficient decision-making (Akerlof 1997; Arrow 1974; Renneboog and Vansteenkiste 2019), resulting in higher coordination costs and ultimately reduced firm performance (Barkema et al. 1996; Rahahleh and Wei 2013; Weber and Camerer 2003). For example, Cartwright and Cooper (1993) show that administrative conflicts can arise from the acquisition of a culturally distant firm. Moreover, Buono et al. (1985) show that the acquisition of a culturally distant target can lead to hostilities between employees of the acquirer and the target during the post-merger integration phase.

In addition to studies that measure acquisition performance primarily through accounting metrics, there is evidence that culture affects investor expectations and behavior (Fang et al. 2023). Capital markets have been shown to view M&A transactions between firms with high cultural distance negatively, anticipating frictions from low cultural fit. For example, a meta-analysis by King et al. (2021) finds a negative effect of national cultural distance on the acquirer's short-term stock performance. Moreover, studies that analyze the combined stock performance of the acquirer and target, such as Ahern et al. (2015) and Aybar and Ficici (2009), also find a negative effect, as do studies that analyze the effect of organizational cultural distance on stock performance (e.g., Chatterjee et al. 1992). These findings are further supported by studies that measure organizational culture using alternative measures of organizational cultural distance. For example, Alexandridis et al. (2022) and Bereskin et al. (2018) find that differing CSR orientations of the acquirer and target lead to lower announcement returns and lower long-term operating growth, while culturally similar firms earn higher abnormal returns around the deal announcement date. Taken together, these findings suggest that investors expect the organizational cultural distance between the acquirer and the target to reduce the likelihood of realizing synergies, resulting in negative announcement day returns.

Overall, the empirical evidence on the relationship between cultural distance and M&A performance is mixed. However, cultural differences seem to be a particularly important contributor to social conflict between acquiring and target employees (Vaara et al. 2012). Moreover, this effect appears to be stronger than the positive impact on knowledge sharing between the two firms, which is crucial for the positive outcomes predicted by the information processing and interorganizational learning hypotheses, suggesting that cultural frictions may outweigh the benefits of knowledge sharing. Consistent with these findings, the results of numerous studies (e.g., Ahern et al. 2015; Alexandridis et al. 2022; Bereskin et al. 2018; Chatterjee et al.) and meta-analyses examining short- and long-term M&A performance reflect this relationship (King et al.; Rottig 2017; Stahl and Voigt 2008). For example, the meta-analysis by Homberg et al. (2009) finds that several measures for cultural distance, are negatively associated with synergy realization in both the short and long term. Consequently, we argue that the friction between culturally distant acquirers and targets during the (post-) merger phase outweighs the potential benefits of learning and resource recombination. As a result, we propose a negative impact of organizational culture differences on both short-term stock market reactions and long-term synergy gains. This leads to the following hypotheses:

H1a Organizational cultural distance between acquirer and target firms is negatively associated with capital market reactions to M&A announcements.

H1b Organizational cultural distance between acquirer and target is negatively associated with long-term synergy gains.

2.2 Organizational cultural distance and acquisition premiums

Cultural differences not only affect post-merger outcomes, but also have a significant impact during the pre-transaction and transaction phases (Renneboog and Vansteenkiste 2019). Specifically, this is reflected in the acquisition premium that the acquirer is willing to pay for the target. The acquisition premium represents the additional amount paid by the acquirer over and above the pre-transaction value of the target. It is the result of negotiations between the acquirer and the target, with the acquirer seeking to minimize the purchase price and the target seeking to maximize it. The premium therefore plays a key role in the success of the transaction, as it is directly related to the synergies that the acquirer must achieve for the transaction to be considered successful (Schweiger 2002; Sirower 1997). Therefore, studies suggest that high premiums may negatively affect the post-acquisition performance of acquirers (King et al. 2021).

The acquisition premium is affected not only by tangible valuation factors, but also by various intangible factors (Aktas et al. 2011; Chatterjee and Hambrick 2011; Jentner and Lew-ellen 2015). For example, increased growth pressure can increase the acquirer's reservation price and positively affect the acquisition premium (Kim et al. 2011). In addition, an overconfident management of the acquirer positively affects the premium (Hayward and Hambrick 1997). Furthermore, positive CSR involvement of target firms increases the deal premium (Ozdemir et al. 2022). Conversely, strategies that increase the bargaining power of the acquirer, such as earnings management, negatively affect the premium (Baik et al. 2015). Studies also show the influence of the acquirer's network partners in determining the premium (Haunschild 1994). In addition to these acquirer characteristics, various aspects and behaviors of the target also influence the acquisition premium. For example, resistance from target management or the withholding of negative information can lead to an inflated target price (Akerlof 1970; Bange and Mazzeo 2004). Targets may also use certain observable signals to increase their value, such as an increase in alliance activity, the selection of a high-profile investment bank, and the backing of prominent venture capitalists. These strategies may be particularly useful in situations where the target is acquired by firms from different industries or countries (Reuer et al. 2012). In such cases, acquirers must use all available information to fill the information gap and properly assess target quality and deal synergy potential (Connelly et al. 2011).

Culture has been shown to play an important role in shaping the acquisition premium by exerting normative pressure on firms. Rossi and Volpin (2004) find systematic differences in the level of acquisition premiums for UK and US targets. Hope et al. (2011) observe that non-US acquirers often bid higher for US targets than US acquirers. Li and Haleblan (2022) find that acquirers with low uncertainty tolerance tend to pay lower premiums, while acquirers from countries with high future orientation tend to pay higher premiums, as managers take a long-term view on synergy realization. Lim et al. (2016) find asymmetric effects between national cultural distance and the size of the acquisition premium, attributing these effects to higher information costs and systematic differences in structural uncertainty across countries. According to the authors, cultural distance hinders the ability to accurately

evaluate target firms and properly assess the challenges of target integration, such as acculturative stress and differences in routines, structures, and strategies (Mukherji et al. 2013; Roth and O'Donnell 1996). Angwin (2001) also argues that national cultural differences influence acquirers' due diligence activities and shape perceptions of the target. Baik et al. (2015) further note that this effect is due to the relatively higher cost of information gathering, while Giannetti and Yafeh (2012) argue that cultural differences increase contracting costs.

We expect that differences in organizational culture will also affect the acquisition premium. This assumption is based on the idea that organizational cultural distance leads to differences in the strategies, structures, and behaviors of the acquirer and the target (Zheng et al. 2010), which imposes higher information-gathering and contracting costs on the acquirer (Bell et al. 2012; Wang et al. 2020), thereby increasing uncertainty in estimating the true value of the target firm. Uncertainty, in turn, is associated with overpayments and higher acquisition premiums (Moeller et al. 2007). Consistent with our argument, empirical research shows that acquiring firms that operate in related industries or that have more information about the target firm are associated with lower levels of overpayment (Carow et al. 2004; Martin and Shalev 2017). For example, premiums are generally significantly lower for acquirers that have reduced existing information asymmetries through a prior relationship with the target (Smeulders et al. 2023). This effect is due to the acquirer's better assessment of the target's true value as a result of prior contact. It is also observed in transactions where the acquirer's and target's management share the same political ideology, which is important for organizational culture as it affects factors such as the openness of the firm (Gupta and Briscoe 2020). According to these findings, shared political identity increases trust and commitment, improving information sharing and reducing uncertainty (Alnahedh and Alhashel 2021). Language is another crucial antecedent of organizational culture (Srivastava et al. 2018). Pan and Zhang (2022), in their study of M&A transactions between Chinese firms, show that acquirers and targets who speak the same dialect have lower premiums. The authors also attribute this effect to improved information sharing, reduced transaction uncertainty, and greater acceptance by both firms. Based on these observations, we posit that M&A deals characterized by high cultural distance increase uncertainty in target valuation. As a result, we expect acquirers to overestimate the synergy potential of targets with high cultural distance, leading to higher acquisition premiums. We propose the following hypothesis:

H2 Organizational cultural distance between acquirer and target firms is positively associated with acquisition premiums.

2.3 Organizational cultural distance and post-deal innovativeness

One of the primary motivations for M&A transactions is to gain access to the target firm's complementary resources (Grimpe 2007), thereby enhancing the acquirer's innovation capability, which refers to the firm's ability to develop, produce, market, and drive customer acceptance of new products (Garcia and Calantone 2002).

However, research suggests that certain characteristics of M&A transactions can negatively impact the implementation and performance of the acquiring firm's innovation strategies, such as research and development (R&D) activities (Haucap et al. 2019; Hitt et al. 1991, 1996) or new product development (Cheng and Yang 2017; Hitt et al. 1996). First, M&A transactions often consume significant resources, which may otherwise be allocated to R&D (Hitt et al. 1990). Second, integrating the target firm can disrupt existing structures and processes within the acquiring firm (Pritchett 1985). Third, M&A transactions are often executed more quickly and with less uncertainty than internal R&D efforts (Hitt et al. 1991). Based on these observations, some authors argue that internal R&D activities and M&A transactions can serve as complementary strategies (Burgelman 1986). This view is supported by the findings of (Blonigen and Taylor 2000), who found that firms with higher R&D intensities tend to engage in acquisitions less frequently than firms with lower R&D intensities.

Grimpe (2007) points out that the need to integrate the people, structures, and processes of the target firms during the post-merger integration period may also partly explain the negative relationship between M&A and firm innovativeness, highlighting that a shared organizational culture may be a critical success factor for sustaining innovativeness during this period. Moreover, these findings suggest that a heterogeneous organizational culture may be a significant barrier to successful integration and sustained innovation on the part of the acquirer. In support of this idea, the literature shows that the negative impact of national cultural distance on M&As is reduced when the target is only partially integrated (Slangen 2006). The acceptance of new ideas and the willingness to change vary from one culture to another, as is well known from the existing scientific literature, and have different effects on the ability to innovate, to generate ideas and to create new products (Buck and Shahrim 2005; Hofstede 1980). The same is true for organizational culture. Using the CVF, Büschgens et al. (2013) find in their meta-analysis a significant positive relationship between adhocracy culture and innovation capability. At the same time, their results indicate that hierarchy culture has a significant negative relationship with innovation capability, while clan culture and market culture each have a moderately significant positive influence. These results are supported by findings from Martínez-Azúa et al. (2024) which indicate that market orientation has a significant positive effect on firm innovativeness. Another meta-analysis by Eisend et al. (2016) on the relationship between organizational culture and NPD shows that different dimensions of CVF affect this relationship differently, with hierarchy having the smallest effect. Based on this evidence, we argue that cultural differences may negatively affect the long-term innovativeness of acquirers by increasing the challenges of successful post-merger integration:

First, cultural distance complicates integration because it increases the required complexity of organizational change. For example, organizations with highly hierarchical cultures tend to be highly formalized, rigidly hierarchical, and standardized (Cameron et al. 2006). Integrating such a culture into a clan culture with loose structures and open knowledge sharing (Long and Fahey 2000) is likely to require a higher degree of structural adaptation than integration into a firm with an identical culture (Cherchem 2017). Moreover, rigid structures and high levels of formalization

increase the risk of negative long-term effects on the acquirer's innovativeness, as they are negatively correlated with a firm's ability to innovate (Covin and Slevin 1988).

Second, according to social identity theory (Tajfel 1981; Turner 1982), high organizational cultural distance is expected to lead to ingroup bias among members of the acquiring firm, which reduces trust, communication, and knowledge sharing with members of the target firm (Christoffersen et al. 2013) and negatively affects the discovery of new solutions and innovation (Zaheer et al. 1998).

Third, acquiring a culturally distant target reduces the likelihood of effective coordination of R&D and NPD activities. Organizational practices (Child et al. 2003; Kogut and Singh 1988), decision-making styles (Schneider and Meyer 1991), and codes of ethics (Langlois and Schlegelmilch 1990) are highly culturally specific. This increases the likelihood of tensions in collaboration. It also increases the risk of having different and sometimes incompatible ways of working and different points of view. Consequently, M&A transactions between culturally distant firms are associated with increased management costs (Kogut and Singh 1988). Based on the above, we propose the following hypotheses:

H3a Organizational cultural distance between acquirer and target firms is negatively associated with the acquirer's post-deal innovativeness, as measured by patent growth.

H3b Organizational cultural distance between acquirer and target firms is negatively associated with the acquirer's post-deal innovativeness, as measured by NPD.

3 Sample selection

We obtain deal-specific data from the Securities Data Company (SDC), firm-specific data from Thomson Reuters Refinitiv, and data for our cultural distance measure is inferred from the text sections of firms' Glassdoor.com reviews. Glassdoor enables employees to anonymously review their employers by providing 5-star ratings for the categories *Overall Rating*, *Career Opportunities*, *Compensation & Benefits*, *Work/Life Balance*, *Diversity & Inclusion*, *Senior Management*, and *Culture & Values*. In addition, reviewers are required to provide pros and cons about their employer as text input ("Share some of the best reasons [downsides] to work at ..."). To ensure high quality reviews, Glassdoor has a "give to get" policy, requiring new users to provide a review or salary information in order to access other users' reviews. In addition, Glassdoor's 5-star ratings are approximately normally distributed, indicating that reviews are not susceptible to response bias (Chemmanur et al. 2019).

To obtain our final deal sample, we first collect an initial sample of 32,330 deals from the SDC. Consistent with recent M&A literature (e.g., Ahmed et al. 2023; Bena and Li 2014; Bereskin et al. 2018), we require that 1) the deal status is closed, 2) the deal value exceeds \$1 million, 3) both firms are publicly traded before the deal and the acquirer is publicly traded after the deal, 4) the acquirer owns less than

50% of the target's shares before the deal and more than 90% after the deal, and 5) the acquirer is not in the investment banking and investment services industry. To ensure a sufficient number of English-language reviews on Glassdoor, we also restrict our sample to deals between companies headquartered in the US, Canada, Australia, or the UK. These requirements reduce the initial sample to 4,558 deals.

To determine whether a deal has its acquirer and target listed on Glassdoor, we automatically extract potentially matching Glassdoor links from three search engines. We then match the Glassdoor and SDC deal data using fuzzy string matching between company names in the SDC data and the extracted Glassdoor links. For cosine similarity values below 0.8, we manually verify that the correct Glassdoor link was extracted by comparing information on the company's industry, year founded, location, name changes, and company website. For our final sample, we require at least 10 Glassdoor reviews for both the acquirer and the target in the years prior to the deal announcement (similar to Campbell and Shang 2021). After removing observations with missing values, our final sample contains 243 deals with 347,279 acquirer and 68,069 target reviews from 437 unique firms.

4 Identification strategy

The following cross-sectional two-way fixed effects regression models test our hypotheses:

$$\begin{aligned} DealOutcome_m = & \alpha + \beta_1 OrgCulturalDistance_{ij} + \sum \beta_m DealControls_m \\ & + \sum \beta_i AcquirerControls_i + \sum \beta_j TargetControls_j + \gamma_i + \delta_i + \epsilon_m \end{aligned} \quad (1)$$

where $DealOutcome_m$ represents the respective dependent variable of deal m , $OrgCulturalDistance$ between firm i and j represents our main independent variable, and $Controls$ are three vectors containing several control variables of deal m , acquirer firm i , and target firm j . All variables are described in detail below, and Appendix B provides a summary of the variables. To reduce potential endogeneity concerns, we introduce acquirer industry fixed effects (γ_i) to control for time-invariant industry characteristics (similar to Bereskin et al. 2018; Suk and Wang 2021). We also apply time fixed effects (δ_i) to control for merger waves and macroeconomic trends.¹ Standard errors are robust to heteroskedasticity and serial correlations within 2-digit SIC industry clusters.

¹ In models analyzing effects around the announcement date (e.g., announcement cumulative abnormal returns and acquisition premiums), we use the year when the deal was publicly announced for the first time by an involved party. In all other deal outcome models, the year fixed effects refer to the year in which the entire deal was completed.

4.1 Organizational cultural distance measure

Previous research has mostly relied on small-scale survey designs to examine the organizational cultural distance between the acquirer and the target (Rottig 2017). More recently, scholars have begun to use machine learning techniques to measure corporate culture (e.g., Corritore et al. 2020; Li et al. 2021). For example, Latent Dirichlet Allocation (LDA) is often used for unsupervised topic modeling (Blei et al. 2001). LDA assigns topic probability scores to each document based on word co-occurrences. However, due to its unsupervised approach, a caveat of using LDA is that the number of topics to be discovered must be set a priori (Bochkay et al. 2023). Thus, topic categories must be determined manually after running the model, leaving leeway for topic overlap and potential misinterpretation. Another (more advanced) approach to measuring organizational culture is based on the word2vec algorithm (Mikolov et al. 2013). Li et al. (2021) use word2vec as a semi-supervised word embedding model to generate a context-specific dictionary to measure corporate culture. Nevertheless, LDA and word2vec underperform in natural language processing tasks compared to state-of-the-art transformer models (Bochkay et al. 2023; Koch and Pasch 2022; von der Mosel et al. 2023). These large language models outperform LDA and word2vec for several reasons. First, transformer models use the principle of attention (Vaswani et al. 2017), which enables transformer models to learn contextual representations. Thus, they better understand short, nuanced, or colloquial expressions because they recognize the context of whole sentences or statements. In contrast, LDA's bag-of-words approach ignores the immediate context of words. word2vec is also not able to fully reflect the context of a document. Second, transformers can handle ironic expressions. Third, they can handle statements that have opposite meanings, even in the absence of a negation. Due to these advantages, we use the pre-trained CultureBERT large language model developed by (Koch and Pasch 2022) as the basis for our cultural distance scores. CultureBERT builds on the widely used RoBERTa large language model (Liu et al. 2019). To adequately classify cultural dimensions, CultureBERT was manually fine-tuned for the four culture dimensions of the CVF (CVF; Cameron et al. 2006; Quinn and Rohrbaugh 1983). Fine-tuning involved manually labeling 2,000 Glassdoor reviews on the four culture dimensions (clan, adhocracy, market, hierarchy) that best fit the overall tone of the review (see Appendix A for Glassdoor review examples related to each of the four dimensions).

To determine the organizational culture scores for each CVF dimension for each Glassdoor review, we first merged the pro and con text sections of each review into a single, coherent corpus of text. We then tokenized each corpus. Because RoBERTa's performance declines as token length increases (Koch and Pasch 2022), we limited the number of tokens per review to 300, with the median length of our reviews being 128 tokens. After tokenization, the CultureBERT transformer model was applied to each corpus, resulting in four probability scores corresponding to each CVF cultural dimension. These scores, which range from 0 to 1, indicate the extent to which a particular review is consistent with each cultural dimension. Then, for each firm involved in a particular M&A deal, we calculated the cumulative mean for

each of the four organizational culture scores for all reviews published prior to the announcement of the deal (see online supplement for code examples). Finally, we determine the organizational cultural distance between the acquirer and the target by calculating Kogut and Singh's (1988) cultural distance index. We applied the correction proposed by Konara and Mohr (2019) to address the criticisms of the original measure found in the literature, as follows:

$$CulturalDistance_{i,j} = \sqrt{\sum_{c=1}^4 \frac{(acq_dimension_culture_c - tar_dimension_culture_c)^2}{V_c}} \quad (2)$$

where i is the acquirer, j is the target, c is the cultural dimension of the CVF, and v is the variance of the cultural component c . In addition to using *deal_culturaldistance* as the main independent variable, we also run models with the four absolute differences of the organizational culture dimensions as separate independent variables. This allows us to observe the direct impact of each dimension on the respective M&A outcome.

4.2 Dependent measures

4.2.1 Capital market reactions and post-acquisition synergies

Short-term event studies are by far the most popular approach to assess M&A success (Renneboog and Vansteenkiste 2019). Thus, we use acquirer and combined (market value-weighted acquirer and target) announcement cumulative abnormal returns (CARs) to measure capital market reactions to deal announcements. We follow the established event study methodology to estimate daily abnormal returns using the market model (e.g., Brown and Warner 1985; Suk and Wang 2021):

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{M,t}) \quad (3)$$

where $R_{i,t}$ equals the actual stock return of firm i on day t , and R_m equals the market return on day t . The firm's alpha and beta are estimated using the market model from -250 to -50 days prior to the deal announcement. Market model returns are estimated using the SP500 index. Next, the firm's expected return on day t is predicted using the estimated alpha and beta combined with the return on day t , which is then subtracted from the firm's actual return. Finally, we aggregate acquirers' daily abnormal returns over the $[-5, 5]$ and $[-10, 10]$ days around the announcement date (*acq_car5*, *acq_car10*). Table 1 shows the statistics for daily abnormal returns for the acquirer. Mean abnormal returns are negative and statistically significant (-0.54% ; Patell $z = -3.032$; $p < 0.01$) over the period of $[-5, 5]$ with the lowest mean return on the days of M&A announcement (-0.25% , $p < 0.05$). The mean cumulative abnormal return for the $[-10, 10]$ event window is -0.65% (Patell $z = -3.458$; $p < 0.001$). To calculate the combined CAR of the acquirer and target (*deal_car_weighted*), we first multiply the CAR of both firms by their relative market capitalization and then sum their weighted abnormal returns.

Table 1 Daily abnormal returns to M&A announcement

Day	Mean abnormal return (%)	Standardized t-statistic	p-value	Patell Z	p-value
-10	0.20	1.605	0.110	0.816	0.414
-9	0.12	0.972	0.332	0.014	0.989
-8	-0.11	-0.915	0.361	-1.538	0.124
-7	-0.02	-0.168	0.867	-0.872	0.383
-6	0.08	0.672	0.502	0.109	0.913
-5	0.09	0.721	0.471	0.275	0.783
-4	-0.11	-0.893	0.373	-1.322	0.186
-3	0.15	1.231	0.219	1.234	0.217
-2	0.07	0.573	0.567	-0.186	0.852
-1	-0.10	-0.827	0.409	-0.884	0.377
0	-0.25	-10.984	0.049	-2.175	0.029
1	-0.11	-0.924	0.357	-0.994	0.320
2	-0.10	-0.816	0.415	-0.959	0.337
3	0.04	0.300	0.764	-0.279	0.780
4	-0.11	-0.871	0.385	-0.217	0.829
5	-0.07	-0.627	0.532	0.144	0.885
6	0.05	0.413	0.680	0.134	0.893
7	-0.05	-0.432	0.666	-0.836	0.403
8	0.10	0.805	0.421	1.076	0.282
9	-0.12	-0.989	0.324	-1.410	0.158
10	-0.05	-0.390	0.697	0.378	0.705

This table presents the mean abnormal daily returns of acquiring firms for the ten-day event window around the M&A announcement date. The descriptive statistics are based on the daily abnormal returns of 243 deal observations for the years 2008–2021

However, as CARs represent the ex-ante expectations of investors and not the ex-post synergies realized, there is no guarantee that they correspond to the actual synergies. Therefore, we use an accounting proxy to measure long-term synergy benefits (Barraclough et al. 2013; Renneboog and Vansteenkiste 2019). Consistent with previous studies on post-acquisition performance (e.g., Morosini et al. 1998; Suk and Wang 2021; Woo et al. 1992), we use sales growth (*acq_2yr_sales_growth*, *acq_4yr_sales_growth*) as a proxy for long-term synergistic gains. We measure long-term performance as the sales growth two and four years after the M&A announcement compared to sales in the year before the announcement. Our choice of two- and four-year intervals is based on the understanding that while most integration efforts are completed within two years (Jemison and Sitkin 1986), cultural integration in particular can take considerably longer (Homburg and Bucerius 2006). By including both time frames, we can effectively capture longer-term effects.

4.2.2 Acquisition premiums

As a proxy for transaction phase outcomes, we use acquisition premiums, which we measure as the difference between the acquirer's payment and the target's market value, divided by the target's market value (*deal_premium_1day*; Lee et al. 2019). Prior research uses extended time periods to mitigate the potential impact of information leakage immediately prior to the announcement (Reuer et al. 2012). Therefore, we assess the target's market value at three consecutive points in time (one day, one week, one month) prior to the deal announcement.

4.2.3 Post-acquisition innovation

To examine the impact of cultural distance on the post-M&A innovativeness of acquiring firms, we employ two widely accepted measures that have been associated with firms' innovation performance: patenting and new product development (Cordero 1990). Patents serve as a popular indicator of a firm's inventiveness (Galini 2002) and have been extensively used to assess the effect of acquisitions on the subsequent innovation performance of acquirers (e.g., Ahuja and Katila 2001; Hauscap et al. 2019; Hitt et al. 1991), as they reflect the firms' technical knowledge base (Prabhu et al. 2005). Therefore, our first measure is the patent growth, measured as patents filed two years after an M&A announcement compared to the number of patents filed in the year before the announcement (*acq_2yr_patent_growth*).

However, we recognize that patents may not capture all forms of innovation, as certain innovations may not be patentable, and firms may choose not to patent ideas for strategic reasons (Hall et al. 2005). Therefore, we consider an alternative measure of firm innovativeness that captures the marketable output of the innovation process and has been used in previous studies examining the effects of M&A on firm innovation (e.g., Grimpe 2007; Hitt et al. 1996). Our second measure captures product innovation by assessing new product growth by comparing the number of product launches two years after the M&A announcement to the number of product launches in the year before the announcement (*acq_2yr_npd_growth*).

4.3 Control variables

Similar to Ahmed et al. (2023), Bereskin et al. (2018), and Suk and Wang (2021), we add a set of control variables to our regression models that capture deal, acquirer, and target characteristics that may affect M&A outcomes (for a detailed variable description, see Appendix B).

4.3.1 Deal controls

Bereskin et al. (2018) find that larger deals are associated with lower acquirer CARs. In addition, larger deal values are associated with higher deal complexity, which increases deal duration (Lawrence et al. 2021). Therefore, we include the natural logarithm (to mitigate skewness) of the deal value (*deal_value_ln*) as a

control. Next, we include two dummy variables indicating whether the deal was all cash (*deal_all_cash_dummy*) or all equity financed (*deal_all_stock_dummy*), as Loughran and Vijh (1997) find that equity-financed acquisitions generate lower returns than cash-financed ones. In addition, deal financing affects acquisition premiums (Ghosh and Ruland 1998). As Chen et al. (2018) find that tender offers are positively associated with acquisition synergies, we control for whether the deal involves a tender offer (*deal_tenderoffer_dummy*). However, tender offers may also lead to higher acquisition premiums as the target may initially resist the offer (Raghavendra and Vermaelen 1998). Moreover, Schwert (2000) finds that acquirers earn lower abnormal returns in hostile deals. Thus, we include the *deal_friendly_dummy*. The *deal_relatedness_dummy* captures whether the acquirer and the target are active in the same two-digit SIC code. Industry familiarity may reduce deal uncertainty (Morck et al. 1990). As our sample includes international deals, we control for national cultural differences between the acquirers and the targets (*deal_hofstede_distance*) using the cultural distance measure developed by Kogut and Singh (1988), which is based on Hofstede's (2001) six cultural dimensions of individualism, power distance, uncertainty avoidance, femininity, indulgence, and long-term orientation (Lawrence et al. 2021).

4.3.2 Acquirer and target controls

Moeller et al. (2004) find that firm size of the acquirer has a negative impact on its announcement returns due to an increased likelihood of engaging in value-destroying mergers induced by managerial entrenchment. Therefore, we control for the natural logarithm of the size of the acquirer (*acq_assets_lastyear_ln*). Similarly, we also include the target's size (*tar_assets_lastyear_ln*), which directly affects the target's attractiveness and deal outcomes (Chen et al. 2018; Lee et al. 2019). We also include the operating performance of the acquirer (*acq_roa_lastyear*) because Morck et al. (1990) find that firms with higher operating performance are more successful acquirers. Similarly, we also control for the operating performance of the target (*tar_roa_lastyear*) because of its potential positive impact on post-merger synergies. Higher target profitability also increases the attractiveness of the target, potentially increasing acquisition premiums (Hayward and Hambrick 1997). We also include the acquirer's R&D intensity (*acq_rd_intensity*), which captures the size of the acquirer's knowledge base as well as its innovativeness. The research literature has shown that there is a direct relationship between the acquirer's R&D intensity and its acquisition intensity (Hitt et al. 1996) as well as its innovative performance (Hitt et al. 1991). To control for the acquirer's general industry performance, we add the acquirer's industry growth in the 12 months prior to the deal announcement (*acq_industrygrowth*) in addition to the industry fixed effects (Ellis et al. 2011). Additionally, we control for the target's market-to-book ratio (*tar_mbratio*) because a high market valuation makes it more difficult to realize growth opportunities after deal completion (Laamanen 2007). Finally, Zollo and Singh (2004) find that the acquirer's prior deal experience has a positive impact on M&A performance. Therefore, we include the acquirer's prior deal

experience in the last three years as control (*acq_dealexperience*). Since older firms may have more M&A experience, we also include the age of the acquirer and the target as controls (Naranjo-Valencia et al. 2011).

5 Empirical results

5.1 Descriptive statistics

Table 2 shows the number of deals by year of announcement. Most of the deals in our sample occurred after 2011, as Glassdoor launched in 2008 and firms were slow to receive reviews.

Table 3 shows the descriptive statistics for all the variables used in our specified models. The four cultural affiliations of the firms (represented by probability scores between 0 and 1) have their minimum (maximum) values for each dimension below the threshold of 0.08 (above the threshold of 0.51). The means of each dimension are comparable for acquirers and targets. However, the standard deviation is lower for the acquirer dimensions because there are approximately five times more acquirer Glassdoor reviews available than target reviews. The average absolute difference between the acquirer's and the target's cultural dimensions is around 0.08. In 57% of the deals, the dominant culture (the culture with the highest probability value) differs between the acquirer and target. In 34% (41%) of the deals, the acquirers' (targets') most dominant culture is reflected by the market dimension. Our main independent variable *deal_culturaldistance*, which represents the Kogut

Table 2 Deals by announcement year

Announcement year	Deals	Percentage	Total percentage
2008	2	0.82	0.82
2009	5	2.06	2.88
2010	3	1.23	4.12
2011	4	1.65	5.76
2012	11	4.53	10.29
2013	10	4.12	14.40
2014	15	6.17	20.58
2015	36	14.81	35.39
2016	36	14.81	50.21
2017	22	9.05	59.26
2018	22	9.05	68.31
2019	23	9.47	77.78
2020	21	8.64	86.42
2021	33	13.58	100.00
Total	243	100.00	100.00

This table presents the number of deals per year. The descriptive statistics are based on 243 deal observations for the years 2008–2021

Table 3 Descriptive statistics

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Acquiring firms culture affiliation					
acq_clan_culture	243	0.259	0.084	0.036	0.511
acq_adhocracy_culture	243	0.203	0.104	0.013	0.626
acq_market_culture	243	0.276	0.098	0.077	0.580
acq_hierarchy_culture	243	0.262	0.083	0.051	0.516
Target firms culture affiliation					
tar_clan_culture	243	0.257	0.100	0.025	0.570
tar_adhocracy_culture	243	0.220	0.117	0.036	0.691
tar_market_culture	243	0.293	0.117	0.038	0.603
tar_hierarchy_culture	243	0.230	0.097	0.027	0.570
Deal cultural distance					
deal_culturaldistance	243	0.201	0.103	0.029	0.580
deal_culturaldistance_js	243	0.144	0.072	0.023	0.401
deal_clan_culture_abs	243	0.083	0.068	0.001	0.404
deal_adhocracy_culture_abs	243	0.079	0.075	0.0002	0.433
deal_market_culture_abs	243	0.093	0.075	0.0001	0.419
deal_hierarchy_culture_abs	243	0.091	0.069	0.001	0.333
Dependent variables					
acq_car5	243	−0.035	0.313	−3.598	0.705
acq_car10	243	−0.051	0.563	−6.463	1.324
deal_car_weighted	243	−0.016	0.135	−1.634	0.318
acq_2yr_sales_growth	182	0.227	0.298	−0.214	1.856
acq_4yr_sales_growth	131	0.128	0.154	−0.117	0.653
deal_premium_1day	226	0.328	0.306	−0.312	2.367
deal_premium_1week	226	0.356	0.313	−0.307	2.438
deal_premium_1month	226	0.380	0.306	−0.341	2.625
acq_2yr_patent_growth	189	3.573	8.458	0.000	101.187
acq_2yr_npd_growth	154	0.136	0.153	0.000	0.913
Deal controls					
deal_value_ln	243	21.568	1.672	17.272	25.156
deal_hofstede_distance	243	0.031	0.081	0.000	0.345
deal_all_cash_dummy	243	0.473	0.500	0	1
deal_all_stock_dummy	243	0.152	0.360	0	1
deal_tenderoffer_dummy	243	0.181	0.386	0	1
deal_friendly_dummy	243	0.992	0.091	0	1
deal_relatedness_dummy	243	0.687	0.465	0	1
Acquirer controls					
acq_age	243	69.984	49.831	6	232
acq_assets_lastyear_ln	243	23.081	1.773	18.594	27.496
acq_roa_lastyear	243	0.419	0.946	−0.330	10.077
acq_industrygrowth	243	0.009	0.051	−0.037	0.551
acq_dealexperience	243	1.535	0.937	1	6

Table 3 (continued)

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
acq_rd_intensity	243	0.059	0.097	0.000	0.642
Target controls					
tar_age	243	52.119	40.360	7	191
tar_assets_lastyear_ln	243	21.209	1.847	16.507	27.386
tar_roa_lastyear	243	0.017	0.163	−0.511	2.028
tar_mbratio	243	2.363	4.503	0.000	59.870

The descriptive statistics are based on 243 deal observations for the years 2008–2021. A detailed variable description can be found in Appendix B

N = 243. *M* = Mean. *SD* = Standard Deviation. *Min* = Minimum. *Max* = Maximum

and Singh (1988) adapted organizational cultural index, ranges from *Min* = 0.029 to *Max* = 0.58, with a mean of *M* = 0.201.

Table 4 shows the Pearson product moment correlation coefficients for all dependent and independent variables in our analysis. Since none of our independent or control variables show very high linear dependence ($r > 0.8$), we conclude that multicollinearity is unlikely to affect the results of our regression analysis (Sheth et al. 2011).

5.2 Results of H1—organizational cultural distance, capital market reactions, and post-deal synergies

For H1a, we argue that for acquirers and targets with high organizational cultural distance, the anticipation of cultural frictions leads to negative capital market reactions in the form of lower announcement returns. Models 1–3 of Table 5 use our organizational cultural index adapted from Kogut and Singh (1988) between the acquirer's and target's four CVF culture dimensions (clan, adhocracy, market, hierarchy) as our main independent variable (*deal_culturaldistance*). In Model 1 (2), we center the acquirer's CAR [−10, 10] (−5, 5) days around the deal announcement. For both event windows, the results show a significant negative relationship between the cultural distance between the acquirer and the target and the acquirer's respective CAR ($t = -2.278$, $p < 0.05$), indicating that the capital market expects lower synergies for culturally distant firms, lending support to hypothesis H1a. We also use the [−5, 5] combined (value-weighted) CAR of the acquirer and target as an additional measure of capital market reactions (Model 3). The coefficient of *deal_car_weighted* ($t = -1.718$, $p < 0.1$) confirms that the capital market expects greater synergy gains from acquirers and targets that are more similar in organizational culture. The coefficients of the control variables are generally consistent with the expected directions suggested by the literature. For example, *deal_value_ln* has a positive coefficient (Suk and Wang 2021), *deal_all_cash_dummy* has a positive coefficient (Alexandridis et al. 2022; Bereskin et al. 2018; Chakrabarti et al. 2009), and *deal_relatedness_dummy* has a positive coefficient (Ahmed et al. 2023; Alexandridis et al. 2022; Conn et al. 2005).

Table 4 Correlation matrix

#	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	deal_culturaldistance	1																												
2	acq_car2	0.03	1																											
3	acq_car5	0.02	0.96	1																										
4	acq_car10	0.01	0.94	0.98	1																									
5	deal_car_weighted	0.04	0.98	0.95	0.92	1																								
6	acq_sales_2yr_growth	-0.17	-0.11	-0.09	-0.09	-0.10	1																							
7	acq_sales_4yr_growth	-0.21	-0.14	-0.13	-0.12	-0.12	0.89	1																						
8	deal_premium_1day	0.14	-0.07	-0.04	-0.002	-0.08	-0.08	-0.09	1																					
9	deal_premium_1week	0.15	-0.09	-0.05	-0.01	-0.11	-0.03	-0.03	0.97	1																				
10	deal_premium_1month	0.17	-0.06	-0.03	-0.01	-0.08	-0.11	-0.15	0.85	0.87	1																			
11	acq_2yr_patent_growth	0.04	-0.01	-0.03	-0.03	-0.01	0.01	0.06	0.04	0.09	0.08	1																		
12	acq_2yr_npd_growth	0.06	-0.11	-0.06	-0.05	-0.10	0.04	0.02	-0.12	-0.11	-0.11	-0.08	1																	
13	deal_value_ln	-0.19	0.08	0.07	0.05	0.06	0.11	0.06	-0.08	-0.08	-0.09	0.06	-0.17	1																
14	deal_hofstede_distance	-0.02	-0.02	0.05	0.06	-0.03	0.004	-0.01	0.05	0.04	0.04	-0.05	-0.04	-0.01	1															
15	deal_all_cash_dummy	0.26	0.03	0.04	0.05	0.04	-0.25	-0.20	0.28	0.30	0.30	0.12	-0.12	-0.31	0.12	1														
16	deal_all_stock_dummy	-0.21	-0.06	-0.07	-0.08	-0.07	0.24	0.28	-0.22	-0.22	-0.22	-0.05	0.01	0.004	-0.12	-0.40	1													
17	deal_tenderoffer_dummy	0.21	0.02	0.02	0.02	0.03	-0.13	-0.13	0.13	0.12	0.17	-0.06	0.07	-0.14	-0.02	0.35	-0.20	1												
18	deal_friendly_dummy	-0.16	0.005	0.01	0.02	-0.02	0.04	0.01	0.11	0.11	0.12	-0.04	0.05	-0.03	0.04	-0.005	0.04	0.04	1											
19	deal_relatedness_dummy	-0.01	0.03	0.03	0.04	0.02	-0.07	-0.005	0.09	0.07	0.11	-0.13	-0.06	-0.005	-0.08	-0.09	0.14	0.13	0.04	1										
20	acq_age	-0.06	-0.03	-0.03	-0.03	-0.05	-0.26	-0.37	-0.01	-0.05	-0.06	-0.08	-0.05	0.15	0.08	-0.12	-0.002	-0.18	-0.05	0.005	1									
21	acq_assets_lastyear_ln	-0.07	0.05	0.04	0.02	0.04	-0.30	-0.39	0.03	0.02	0.04	0.08	-0.15	0.62	-0.03	0.02	0.004	-0.06	0.01	-0.09	0.27	1								
22	acq_roa_lastyear	0.08	-0.07	-0.06	-0.06	-0.08	0.53	0.45	-0.06	-0.02	-0.04	-0.04	0.02	0.10	-0.02	-0.17	0.05	-0.06	0.02	-0.05	-0.13	-0.23	1							
23	acq_industrygrowth	0.15	0.08	0.09	0.09	0.09	0.01	0.01	-0.06	-0.06	-0.06	0.004	0.07	0.03	0.15	0.15	-0.06	-0.02	0.04	-0.17	-0.08	0.18	0.001	1						
24	acq_dealexperience	-0.06	0.13	0.10	0.10	0.13	-0.12	-0.12	0.03	0.03	0.06	-0.06	-0.17	0.26	-0.08	0.16	-0.08	0.20	0.05	0.09	-0.05	0.41	-0.12	0.22	1					
25	acq_rd_intensity	0.04	-0.04	-0.06	-0.05	-0.03	0.19	0.23	0.03	0.07	0.09	0.08	-0.07	0.05	-0.09	0.09	0.02	0.19	0.06	0.13	-0.29	-0.21	0.24	-0.05	0.17	1				
26	tar_age	-0.17	-0.10	-0.10	-0.09	-0.11	-0.03	-0.02	-0.03	-0.06	-0.05	-0.07	-0.12	0.15	0.05	-0.17	-0.002	-0.22	0.07	0.05	0.39	0.13	-0.05	0.06	0.06	-0.28	1			

Table 4 (continued)

#	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
27	tar_assets_lastyear_ln	-0.26	-0.05	-0.06	-0.08	-0.07	0.14	0.10	-0.12	-0.14	-0.17	0.04	-0.19	0.77	-0.01	-0.37	0.22	-0.28	-0.03	0.08	0.29	0.63	-0.01	0.08	0.16	-0.21	0.36	1		
28	tar_roa_lastyear	-0.13	-0.05	-0.07	-0.05	-0.06	-0.01	-0.03	-0.14	-0.13	-0.16	0.01	-0.02	0.13	-0.01	-0.08	-0.08	-0.12	-0.05	-0.14	0.20	0.06	-0.04	0.01	-0.03	-0.18	0.17	0.13	1	
29	tar_mbratio	0.10	0.04	0.05	0.04	0.04	-0.02	-0.02	-0.02	0.001	0.01	-0.01	0.10	0.12	-0.02	0.11	-0.10	0.08	0.02	0.02	-0.12	0.05	0.10	0.03	0.10	0.21	-0.16	-0.20	-0.07	1

This table presents correlation coefficients for the variables used in the main part of our analysis. Correlations are based on 243 deal observations for the years 2008–2021. A detailed variable description can be found in Appendix B

Table 5 H1a: Capital market reactions (CARs)

	(1)	(2)	(3)	(4)	(5)	(6)
	acq_car [-10, 10]	acq_car [-5, 5]	deal_car_weighted [-5, 5]	acq_car [-10, 10]	acq_car [-5, 5]	deal_car_weighted [-5, 5]
deal_culturaldistance	-0.900** (-2.278)	-0.436** (-2.081)	-0.138* (-1.718)	-0.380 (-0.687)	-0.199 (-0.715)	-0.033 (-0.300)
deal_clan_culture_abs				0.195 (0.516)	0.029 (0.138)	-0.006 (-0.069)
deal_adhocracy_culture_abs				-1.536*** (-4.346)	-0.796*** (-3.947)	-0.342*** (-3.684)
deal_market_culture_abs				0.037 (0.088)	0.172 (0.796)	0.178 (1.577)
deal_hierarchy_culture_abs				0.153*** (2.654)	0.086** (2.626)	0.037** (2.338)
deal_value_In	0.139** (2.425)	0.079** (2.406)	0.034** (2.116)	0.169 (0.539)	0.032 (0.220)	-0.045 (-0.606)
deal_hofstede_distance	0.221 (0.619)	0.051 (0.293)	-0.042 (-0.467)	0.012 (0.141)	0.018 (0.356)	0.001 (0.064)
deal_all_cash_dummy	0.030 (0.336)	0.029 (0.548)	0.007 (0.326)	-0.113 (-0.911)	-0.061 (-0.971)	-0.024 (-0.934)
deal_all_stock_dummy	-0.121 (-0.991)	-0.068 (-0.998)	-0.028 (-1.114)	-0.069 (-0.785)	-0.031 (-0.605)	-0.017 (-0.717)
deal_tenderoffer_dummy	-0.071 (-0.866)	-0.033 (-0.672)	-0.018 (-0.798)	-0.099 (-0.483)	0.002 (0.002)	0.027 (0.539)
deal_friendly_dummy	-0.186 (-0.926)	-0.081 (-0.672)	-0.028 (-0.597)	0.037 (0.37)	0.010 (0.10)	0.001 (0.073)
deal_relatedness_dummy	0.020 (0.240)	0.001 (0.023)	-0.003 (-0.167)	0.001 (0.001)	0.224 (1.343)	0.003 (1.442)
acq_age	0.001 (1.371)	0.001 (1.421)	0.0003 (1.507)	-0.006 (-0.230)	-0.003 (-0.220)	-0.006 (-0.997)
acq_assets_lastyear_In	-0.001 (-0.031)	-0.001 (-0.044)	-0.005 (-0.748)			

Table 5 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	acq_car [-10, 10]	acq_car [-5, 5]	deal_car_weighted [-5, 5]	acq_car [-10, 10]	acq_car [-5, 5]	deal_car_weighted [-5, 5]
acq_roa_lastyear	-0.078 (-1.366)	-0.043 (-1.307)	-0.020 (-1.343)	-0.078 (-1.336)	-0.042 (-1.241)	-0.018 (-1.253)
acq_industrygrowth	2.717** (2.330)	1.623** (2.632)	0.729** (2.644)	2.838** (2.370)	1.710*** (2.743)	0.764*** (2.815)
acq_dealexp	-0.0003 (-0.008)	-0.006 (-0.252)	0.005 (0.524)	-0.008 (-0.206)	-0.012 (-0.483)	0.002 (0.262)
acq_rd_intensity	-0.580* (-1.783)	-0.336** (-2.188)	-0.149*** (-2.875)	-0.835*** (-3.093)	-0.485*** (-3.706)	-0.225*** (-4.164)
tar_age	-0.002* (-1.912)	-0.001** (-2.012)	-0.001** (-2.036)	-0.002* (-1.841)	-0.001** (-2.017)	-0.001** (-2.148)
tar_assets_lastyear_ln	-0.148* (-1.786)	-0.079* (-1.708)	-0.031 (-1.436)	-0.147* (-1.764)	-0.079* (-1.708)	-0.031 (-1.442)
tar_roa_lastyear	-0.377 (-1.216)	-0.245 (-1.376)	-0.108 (-1.425)	-0.336 (-1.110)	-0.229 (-1.332)	-0.105 (-1.452)
tar_mratio	-0.008 (-1.376)	-0.005 (-1.237)	-0.002 (-1.239)	-0.011 (-1.567)	-0.006 (-1.461)	-0.003 (-1.529)
Observations	243	243	243	243	243	243
Adj R2	0.179	0.191	0.207	0.187	0.199	0.222
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effects linear OLS regression results predicting the effect of organizational cultural distance between acquirers and targets on deal announcement cumulative abnormal returns (CARs). The dependent variable for Models 1, 2, 4 and 5 is the acquirer's cumulative abnormal return, with the day range being centered around announcement given in brackets. The dependent variable for Models 3 and 6 is the market value-weighted cumulative abnormal return of the acquirer and target. The main independent variable in Models 1–3 is *deal_culturaldistance*, with higher values indicating higher cultural dissimilarities between the acquirer and target. The main independent variables in Model 4–6 are the absolute cultural differences (in the four Competing Values Framework categories: clan, adhocracy, market, hierarchy) between the acquirer and target. A detailed variable description can be found in Appendix B. Constant terms are estimated but not reported. We include the acquirer's industry and year fixed effects in all models. We cluster standard errors at the 2-digit SIC industry level. t-statistics are reported in parentheses below the coefficients. *, **, *** denote statistical significance at the 0.10, 0.05, and 0.01 levels (using two-tailed tests).

To explain which dimensions of CVF culture drive the expected capital market synergy gains, we conduct additional analyses by replacing the *deal_cultural-distance* variable with four separate variables (Models 4–6). Each variable captures the absolute difference between the acquirer's and target's attitude towards the respective CVF culture dimension. Results of Models 4–6 in Table 5 indicate that the expected synergistic losses are caused by acquirers and targets that have large differences in their market orientations ($t < -4.346$, $p < 0.01$). These findings are consistent with previous studies that highlight the relative influence of market culture on firm performance (e.g., Deshpandé and Farley 2004; Eisend et al. 2016). We reason that differences in firms' attitudes toward market orientation may be more readily observable to investors, as this dimension is reflected in publicly available information such as market share and profitability (Cameron et al. 2006). In contrast, the other three dimensions are more nuanced and thus more difficult for market participants to observe.

For H1b, we analyze whether the synergistic benefits expected by the capital market from culturally similar acquirers and targets are realized by measuring the growth in operating performance following the deal (Table 6). Therefore, we replace the dependent variable CAR with the acquirer's sales growth in the two and four years following the deal. The negative coefficients of *acq_sales_2yr_growth* ($t = -1.892$, $p < 0.1$) and *acq_sales_4yr_growth* ($t = -2.972$, $p < 0.001$) indicate that M&As of culturally distant firms lead to significantly lower sales growth in the two and four years following the deal. This result supports H1b and is consistent with the a priori expectations of the capital market tested in H1a. While the results of Model 3 show no significant effect of individual cultural dimensions, Model 4 attributes differences in market orientation ($t = -2.682$, $p < 0.01$) or the negative impact on post-merger sales growth four years after the transaction (*acq_sales_4yr_growth*).

5.3 Results of H2—organizational cultural distance and acquisition premiums

H2 argues that organizational cultural distance between the acquirer and the target reduces the ability of the acquirer to accurately assess the true value of the target, thereby increasing the likelihood that the acquirer will overpay for the target. Table 7 shows the regression results with acquisition premiums as the dependent variable. Similar to previous research (Lee et al. 2019; Reuer et al. 2012), we use multiple pre-announcement periods to measure the target's market value. By doing so, we increase robustness by mitigating the potential impact of information leakage immediately prior to the announcement. The average premium paid for these periods ranges from 33 to 38%, which is comparable to the figures reported in the literature (Eckbo 2009). Regardless of whether a 1-day, 1-week, or 1-month pre-announcement period is used, Models 1–3 show a significant positive relationship between organizational cultural distance and acquisition premiums ($t = 2.009$, $p < 0.05$). Thus, firms that acquire culturally distant targets systematically misjudge the true value of the target and pay higher premiums,

Table 6 H1b: Long-term operating synergies

	(1) acq_sales_2yr_growth	(2) acq_sales_4yr_growth	(3) acq_sales_2yr_growth	(4) acq_sales_4yr_growth
deal_culturaldistance	-0.321* (-1.892)	-0.349*** (-2.972)	-0.092 (-0.296)	-0.053 (-0.221)
deal_clan_culture_abs			0.245 (0.938)	0.050 (0.228)
deal_adhocracy_culture_abs			-0.254 (-1.014)	-0.424** (-2.682)
deal_market_culture_abs			-0.482 (-1.464)	-0.251 (-1.370)
deal_hierarchy_culture_abs			-0.041 (-1.094)	-0.015 (-0.646)
deal_value_ln	-0.037 (-1.052)	-0.017 (-0.716)	-0.128 (-0.574)	-0.157 (-0.655)
deal_hofstede_distance	-0.065 (-0.305)	-0.152 (-0.657)	-0.020 (-0.394)	-0.072* (-1.968)
deal_all_cash_dummy	-0.019 (-0.360)	-0.069** (-2.042)	0.006 (0.046)	-0.008 (-0.105)
deal_all_stock_dummy	0.009 (0.071)	-0.010 (-0.131)	-0.043 (-0.679)	0.006 (0.154)
deal_tenderoffer_dummy	-0.037 (-0.625)	0.007 (0.188)	0.082 (0.578)	0.000 (0.000)
deal_friendly_dummy	0.174* (1.886)	0.000 (0.000)	-0.173*** (-2.846)	-0.089** (-2.073)
deal_relatedness_dummy	-0.168*** (-2.879)	-0.090** (-2.243)	-0.001* (-1.756)	-0.001* (-1.719)
acq_age	-0.001** (-2.317)	-0.001* (-1.756)	-0.051*** (-3.355)	-0.053*** (-2.796)
acq_assets_lastyear_ln	-0.078*** (-3.355)	-0.051*** (-2.756)	-0.082*** (-3.306)	-0.053*** (-2.796)

Table 6 (continued)

	(1)	(2)	(3)	(4)
	acq_sales_2yr_growth	acq_sales_4yr_growth	acq_sales_2yr_growth	acq_sales_4yr_growth
acq_roa_lastyear	0.091 (1.313)	0.004 (0.109)	0.084 (1.231)	0.001 (0.025)
acq_industrygrowth	0.823** (2.025)	0.711** (2.216)	0.792* (1.676)	0.695* (1.778)
acq_dealexperience	-0.001 (-0.028)	-0.002 (-0.122)	0.005 (0.184)	0.0003 (0.015)
acq_rd_intensity	0.439** (2.054)	0.073 (0.253)	0.453** (2.548)	0.080 (0.264)
tar_age	-0.0002 (-0.326)	-0.0002 (-0.284)	-0.0002 (-0.224)	-0.0002 (-0.266)
tar_assets_lastyear_ln	0.100*** (2.853)	0.049* (1.821)	0.108*** (2.837)	0.053* (1.938)
tar_roa_lastyear	-0.018 (-0.341)	-0.049 (-1.276)	0.007 (0.108)	-0.026 (-0.605)
tar_mbratio	0.005 (1.563)	0.002* (1.859)	0.005 (1.628)	0.002* (1.787)
Observations	182	131	182	131
Adj R2	0.411	0.255	0.402	0.226
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

This table reports fixed effects linear OLS regression results predicting the effect of organizational cultural distance between acquirers and targets on long-term synergy gains. The dependent variable for Models 1 and 3 is the acquirer's growth in return on sales two years after deal completion. The dependent variable for Models 2 and 4 is the acquirer's growth in return on sales four years after deal completion. The main independent variable in Model 1 and 2 is *deal_culturaldistance*, with higher values indicating higher cultural dissimilarities between the acquirer and target. The main independent variables in Models 3 and 4 are the absolute cultural differences (in the four Competing Values Framework categories clan, adhocracy, market, hierarchy) between the acquirer and target. A detailed variable description can be found in Appendix B. Constant terms are estimated but not reported. We include the acquirer's industry and year fixed effects in all models. We cluster standard errors at the 2-digit SIC industry level. t-statistics are reported in parentheses below the coefficients

*, **, *** denote statistical significance at the 0.10, 0.05, and 0.01 levels (using two-tailed tests)

Table 7 H2: Acquisition premiums

	(1)	(2)	(3)	(4)	(5)	(6)
	deal_premium_1day	deal_premium_1week	deal_premium_1month	deal_premium_1day	deal_premium_1week	deal_premium_1month
deal_culturaldistance	0.465** (2.009)	0.491** (2.012)	0.503* (1.983)			
deal_clan_culture_abs				0.003 (0.007)	-0.010 (-0.021)	0.022 (0.046)
deal_adhocracy_culture_abs				0.337 (0.980)	0.243 (0.681)	0.106 (0.342)
deal_market_culture_abs				0.844*** (2.944)	0.959*** (3.497)	0.906*** (2.992)
deal_hierarchy_culture_abs				-0.264 (-0.674)	-0.267 (-0.709)	-0.077 (-0.205)
deal_value_ln	-0.012 (-0.482)	-0.025 (-1.050)	-0.010 (-0.479)	-0.007 (-0.263)	-0.021 (-0.813)	-0.007 (-0.271)
deal_hofstede_distance	0.175 (1.083)	-0.060 (-0.293)	0.071 (0.286)	0.151 (0.836)	-0.079 (-0.361)	0.068 (0.299)
deal_all_cash_dummy	0.090* (1.657)	0.111* (1.975)	0.088 (1.527)	0.108* (1.944)	0.131** (2.362)	0.105* (1.871)
deal_all_stock_dummy	-0.119* (-1.711)	-0.122* (-1.900)	-0.109 (-1.551)	-0.117 (-1.553)	-0.119* (-1.755)	-0.104 (-1.361)
deal_tenderoffer_dummy	-0.057 (-0.881)	-0.088 (-1.257)	-0.084 (-1.212)	-0.059 (-0.823)	-0.089 (-1.152)	-0.085 (-1.100)
deal_friendly_dummy	0.387*** (3.039)	0.349** (2.430)	0.352*** (2.888)	0.280* (1.701)	0.245 (1.425)	0.294* (1.917)
deal_relatedness_dummy	0.084 (1.340)	0.074 (1.249)	0.120** (2.145)	0.080 (1.335)	0.067 (1.213)	0.114** (2.129)
acq_age	-0.0001 (-0.259)	-0.0004 (-0.766)	-0.0003 (-0.707)	-0.0001 (-0.174)	-0.0003 (-0.694)	-0.0003 (-0.647)
acq_assets_lastyear_ln	0.017 (0.497)	0.024 (0.772)	0.045 (1.203)	0.015 (0.402)	0.023 (0.665)	0.044 (1.100)

Table 7 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	deal_premium_1day	deal_premium_1week	deal_premium_1month	deal_premium_1day	deal_premium_1week	deal_premium_1month
acq_roa_lastyear	0.015 (0.715)	0.030* (1.847)	0.030* (1.919)	0.011 (0.582)	0.026 (1.572)	0.029 (1.592)
acq_industrygrowth	-1.608** (-2.430)	-1.686*** (-2.735)	-1.912*** (-2.770)	-1.751*** (-2.433)	-1.861*** (-2.810)	-2.062*** (-2.718)
acq_dealexperience	-0.038 (-0.907)	-0.039 (-1.076)	-0.037 (-0.987)	-0.033 (-0.871)	-0.034 (-1.034)	-0.033 (-0.991)
acq_rd_intensity	-0.532*** (-7.378)	-0.422*** (-4.094)	-0.365 (-1.155)	-0.375*** (-3.772)	-0.248** (-2.016)	-0.223 (-0.620)
tar_age	-0.00001 (-0.008)	-0.0001 (-0.072)	0.0002 (0.343)	0.00004 (0.046)	-0.00004 (-0.056)	0.0002 (0.350)
tar_assets_lastyear_In	0.027 (0.676)	0.035 (0.894)	-0.015 (-0.476)	0.019 (0.544)	0.026 (0.759)	-0.023 (-0.754)
tar_roa_lastyear	-0.488* (-1.907)	-0.397 (-1.594)	-0.245 (-1.016)	-0.433* (-1.685)	-0.351 (-1.371)	-0.225 (-0.856)
tar_mbratio	-0.007*** (-5.446)	-0.006*** (-4.164)	-0.006*** (-3.431)	-0.006*** (-4.872)	-0.004*** (-3.431)	-0.005*** (-3.268)
Observations	226	226	226	226	226	226
Adj R ²	0.070	0.080	0.066	0.077	0.090	0.069
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effects linear OLS regression results predicting the effect of organizational cultural distance between acquirers and targets on acquisition premiums. The dependent variable for all Models is the acquisition premium paid in relation to the target's market value, which is measured 1 day, 1 week and 1-month prior to deal announcement. The main independent variable in Models 1–3 is *deal_culturaldistance*, with higher values indicating higher cultural dissimilarities between the acquirer and target. The main independent variables in Models 4–6 are the absolute cultural differences (in the four Competing Values Framework categories: clan, adhocracy, market, hierarchy) between the acquirer and target. A detailed variable description can be found in Appendix B. Constant terms are estimated but not reported. We include the acquirer's industry and year fixed effects in all models. We cluster standard errors at the 2-digit SIC industry level. t-statistics are reported in parentheses below the coefficients

*, **, *** denote statistical significance at the 0.10, 0.05, and 0.01 levels (using two-tailed tests)

supporting hypothesis H2. To determine which cultural dimensions specifically cause these overpayments, we replicate the analysis using the four separate CVF cultural difference variables. Using 1-week and 1-month premiums, Models 4–6 show that acquisition premiums increase significantly for acquirers and targets with different market orientations ($t > 2.94$, $p < 0.01$).

5.4 Results of H3—organizational cultural distance and post-deal innovativeness

In H3, we propose that cultural differences between the acquirer and the target may harm the acquirer's long-term innovativeness, measured by patents and new product development (NPD). This is because M&A transactions can disrupt the acquirer's R&D and NPD processes due to the necessity to integrate the target firm. The cultural friction hypothesis (Hofstede 1980) also suggests that acquisitions may lead to reduced communication, collaboration, and trust, further hampering the acquirer's innovation processes.

For Model 1, we find that organizational cultural distance has a significant negative effect on the acquirer's patent activity in the two years following the acquisition, supporting H3a ($t = -2.573$, $p < 0.05$). This effect is primarily driven by differences in the adhocracy culture dimension, as indicated by the results of Model 3 ($t = -1.959$, $p < 0.1$). This aligns with the CVF's assertion that adhocracy culture is associated with creativity and the generation of new ideas (Cameron et al. 2006).

For Model 2, we find a significant negative effect of organizational cultural distance on NPD, supporting H3b ($t = -1.827$, $p < 0.1$). Unlike the effect on patent activity, the negative impact on NPD is driven by differences in hierarchy culture rather than adhocracy culture ($t = -3.085$, $p < 0.001$). This may be because product innovation often tends to be more incremental in nature, requiring well-established structures and processes to ensure consistent quality and continuous improvement (Table 8).

5.5 Robustness checks

To validate our primary analyses, we conducted several additional robustness checks (see the online supplement for detailed code results). First, we replaced our main independent variable, *deal_culturaldistance*, with the Jensen-Shannon (JS) divergence measure used by Corritore et al. (2020) to capture the cultural homogeneity of Glassdoor reviews. JS divergence measures the difference between the probability distributions of the organizational cultural dimensions of the acquirer and the target. The variable *deal_culturaldistance_js* remained statistically significant in all analyses, except for long-term synergies (*acq_sales_4yr_growth*).

Second, our sample includes five observations where the acquirer held between 0 and 50% of the target's shares prior to the deal announcement. We excluded these toehold deals from our main analyses to ensure that the acquirer had not already influenced the target's culture. With the exception of long-term synergy

Table 8 H3: Innovation

	(1) acq_2yr_patent_growth	(2) acq_2yr_npd_growth	(3) acq_2yr_patent_growth	(4) acq_2yr_npd_growth
deal_culturaldistance	-0.051** (-2.573)	-0.028* (-1.827)		
deal_clan_culture_abs			-1.117 (-0.967)	0.218 (0.184)
deal_adhocracy_culture_abs			-5.036* (-1.959)	-0.621 (-0.782)
deal_market_culture_abs			-0.100 (-0.085)	-1.128 (-1.526)
deal_hierarchy_culture_abs			-0.232 (-0.192)	-2.008*** (-3.085)
deal_value_ln	-0.057 (-0.508)	0.034 (0.261)	-0.102 (-0.830)	0.021 (0.157)
deal_hofstede_distance	-0.109 (-0.082)	-0.679 (-1.267)	0.468 (0.368)	-0.627 (-1.330)
deal_all_cash_dummy	0.099 (0.400)	-0.253* (-1.666)	0.045 (0.250)	-0.258 (-1.590)
deal_all_stock_dummy	-0.159 (-0.413)	-0.178 (-0.642)	-0.136 (-0.381)	-0.182 (-0.681)
deal_tenderoffer_dummy	-0.081 (-0.288)	0.480*** (2.812)	-0.048 (-0.185)	0.472*** (2.623)
deal_friendly_dummy	-4.371*** (-5.665)	0.000 (0.000)	-3.844*** (-5.098)	0.000 (0.000)
deal_relatedness_dummy	-0.115 (-0.570)	-0.133 (-0.907)	-0.206 (-1.031)	-0.143 (-0.930)
acq_age	0.001 (0.429)	-0.001 (-0.789)	0.002 (0.864)	-0.001 (-0.777)
acq_assets_lastyear_ln	0.182* (1.859)	-0.021 (-0.369)	0.231** (2.364)	-0.017 (-0.284)
acq_roa_lastyear	0.319*** (3.096)	0.010 (0.217)	0.351*** (3.437)	0.007 (0.146)

Table 8 (continued)

	(1)	(2)	(3)	(4)
acq_industrygrowth	-29.689** (-2.281)	8.346 (1.241)	-37.101*** (-3.068)	8.285 (1.329)
acq_dealexperience	-0.251* (-1.929)	0.055 (1.598)	-0.304*** (-2.176)	0.078* (1.953)
acq_rd_intensity	0.460 (0.445)	-1.163 (-1.181)	0.548 (0.419)	-1.042 (-1.163)
tar_age	-0.001 (-0.314)	-0.003 (-1.225)	-0.003 (-1.139)	-0.002 (-1.083)
tar_assets_lastyear_ln	0.036 (0.330)	0.006 (0.067)	0.008 (0.069)	0.002 (0.022)
tar_roa_lastyear	-0.110 (-0.345)	0.165 (0.488)	-0.388 (-1.072)	0.153 (0.444)
tar_mbratio	0.019*** (2.733)	-0.010*** (-2.115)	0.027*** (5.762)	-0.010*** (-2.174)
Observations	187	148	0.185	0.072
Adj R ²	0.176	0.069	0.231	0.142
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

This table reports fixed effects negative binomial regression results predicting the effect of organizational cultural distance between acquirers and targets on innovation. The dependent variable for Models 1 and 3 is the acquirer's patent growth two years after deal completion compared to one year prior the deal. The dependent variable for Models 2 and 4 is the acquirer's new product development growth two years after deal completion compared to one year prior the deal. The main independent variables in Model 1 and 2 is *deal_culturaldistance*, with higher values indicating higher cultural dissimilarities between the acquirer and target. The main independent variables in Model 3 and 4 are the absolute cultural differences (in the four Competing Values Framework categories clan, adhocracy, market, hierarchy) between the acquirer and target. A detailed variable description can be found in Appendix B. Constant terms are estimated but not reported. We include the acquirer's industry and year fixed effects in all models. We cluster standard errors at the 2-digit SIC industry level. t-statistics are reported in parentheses below the coefficients

*, **, *** denote statistical significance at the 0.10, 0.05, and 0.01 levels (using two-tailed tests)

gains (*acq_sales_4yr_growth*) and combined acquirer-target performance (*deal_car_weighted*), the results remained statistically significant across all analyses.

Third, although we controlled for national cultural distance between acquirer and target countries (*deal_hofstede_distance*), we additionally removed 34 cross-border deals from our sample to account for potential international effects, such as regulatory or country-level institutional confounders. The main analyses using *deal_culturaldistance* remained robust, except again for long-term synergies (*acq_sales_4yr_growth*), even after excluding these cross-border deals.

Fourth, we explored the possibility of a nonlinear relationship between *deal_culturaldistance* and our main dependent variables by including a quadratic term (*deal_culturaldistance_quad*) in all models. After thoroughly examining the results, we found no evidence of a nonlinear relationship, suggesting that the linear model adequately captures the relationship.

Fifth, we included the acquisition premium (*deal_premium_1week*) as a predictor in all models where it was not already included as a dependent variable. This ensured that the observed effects were not driven by an omitted variable not previously included in our analysis.

Sixth, we re-examined the hypothesized negative relationship between organizational cultural distance and long-term synergy gains (H1b) using propensity score matching, a method designed to minimize differences between treatment and control groups based on specific covariates, making inferences about treatment effects more robust and unbiased (Rubin 2006). Matching ensures that differences in the dependent variable are due to the treatment variable, not to pre-existing sample differences (Connelly et al. 2013). Building on previous research on organizational cultural distance and M&A (Bereskin et al. 2018) and following established guidelines (Narita et al. 2023; Stuart 2010), we first operationalized our treatment variable by creating an indicator variable (*deal_high_culturaldistance*), which denotes significant organizational cultural distance between acquirers and targets. M&A pairs with a cultural distance above the 80th percentile were assigned a value of 1, while those below were assigned a value of 0. We then computed relevant covariates for each M&A transaction, drawing on variables known to influence both synergy realization and organizational cultural differences (Andrade et al. 2001; Arian and Stulz 2016; Bauer and Matzler 2014; Kumar 1985; Ramaswamy 1997). These covariates, selected for their stability over time or collected prior to the transaction year (Rosenbaum and Rubin 1983, 1984), include *deal_size_difference*, *deal_roa_difference*, *deal_age_difference*, *deal_sic_difference*, and *deal_hofstede_distance* (see Appendix B for detailed descriptions). Propensity scores were derived through logistic regression using absolute differences in size, age, performance, industry, and national cultural distance. Given the significantly larger number of non-high cultural distance deals, a three-to-one nearest neighbor matching approach was applied (Stuart 2010). This matched all high cultural distance M&A deals (N=38) with similar non-high cultural distance deals. Standardized mean differences below 0.1 and variance ratios below two after matching confirmed that the propensity scores of the control group closely resembled those of the treatment group.

To measure the effect of high organizational cultural distance on long-term synergies, we conducted a linear regression with *acq_2yr_sales_growth* as the outcome

and *deal_high_culturaldistance* as the exposure. Using cluster-robust variance to estimate standard errors, our analysis revealed that high cultural distance reduced long-term synergies by -0.089 points (95% CI $[-0.157, -0.021]$, $p < 0.05$), consistent with the results of our primary analysis. Notably, the inclusion of additional controls in the regression did not significantly reduce bias or increase significance.

Finally, we conducted a synthetic counterfactual analysis to further support our hypothesis regarding H1b. Following the approach used by Bereskin et al. (2018), we created a synthetic dataset of pseudo-M&A deals by assigning all possible targets to each acquirer for each year. From this, we took a random sample to test our hypothesis on a larger set of unrealized M&A deals, examining whether combined sales growth (*comb_2yr_sales_growth*) is lower for M&A deals with high cultural distance. Using propensity score matching with a one-to-one nearest neighbor matching strategy, we achieved a very high balance between the high and low cultural distance groups ($N=600$), with all post-match standardized mean differences below 0.05. Using linear regression with combined long-term synergies as the outcome and high organizational cultural distance as the exposure, we observed a reduction in long-term synergy gains of -0.122 points (95% CI $[-0.3729, -0.0209]$, $p < 0.01$) associated with *deal_high_culturaldistance*. As in our previous analyses, the inclusion of additional controls did not significantly reduce bias or increase power. Moreover, the results remained consistent across different sample sizes, further reinforcing the robustness of our findings.

6 Conclusion

Using a novel sample of 243 M&As between 2008 and 2021, this study provides evidence on the impact of organizational cultural differences between acquirers and target firms on M&A outcomes. We applied state-of-the-art deep learning techniques, specifically the large language model Culture-BERT (Koch and Pasch 2022), to analyze over 400,000 Glassdoor employee reviews and infer an organizational cultural distance score. This approach addresses the methodological weaknesses of prior studies, which often relied on subjective measures to assess organizational cultural distance and M&A success, thus limiting the comparability and objectivity of results (Rottig 2017).

Our study provides several key insights. First, we confirm that organizational cultural distance negatively affects both announcement day market returns (H1a) and post-merger synergy realization (H1b). These findings align with the cultural friction hypothesis (Hofstede 1980), which posits that cultural distance increases coordination and integration costs, thereby hindering M&A performance. The negative relationship between organizational cultural distance and short-term market reactions (H1a) remains robust across various alternative explanations and analytical methods, as demonstrated by numerous robustness tests. Consistent with the cultural friction hypothesis, this negative effect is mainly driven by differences in market cultures, which emphasize autonomy, profitability, and key value drivers such as goal attainment and market share (Cameron et al. 2006). Shareholders tend to evaluate M&A transactions based on the compatibility of firms' competitive and

performance cultures, responding negatively when the target is unlikely to enhance profitability. Further examination of the relationship between organizational cultural distance and long-term synergies at two- and four-years post-transaction (H1b) supports our initial findings, again showing a negative impact driven by market culture differences. Notably, the results for the four-year period show a slight reduction in robustness, suggesting that cultural differences may diminish after two years, likely due to full cultural integration (Jemison and Sitkin 1986). However, the two-year post-transaction results remain clear, showing a significant negative effect of organizational cultural distance on long-term synergies. Additionally, a quasi-experiment conducted during robustness tests further supports these conclusions. Using propensity score analysis, we find that deals with high organizational cultural distance yield lower long-term synergies compared to those with lower cultural distance, even when deal partners are randomly assigned. Moreover, these high cultural distance deals show significantly lower combined acquirer-target sales growth (e.g., Bereskin et al. 2018).

Second, our study offers insight into why organizational cultural distance negatively impacts M&A performance. We show that acquirers dealing with targets exhibiting high cultural distance tend to pay a premium for the target (H2). High premiums, widely recognized in the literature as a potential driver of value-destroying acquisitions (King et al. 2021), are primarily influenced by differences in market culture. This suggests that acquirers with specific cultural values, such as those discussed earlier, struggle to accurately value targets that do not share these values. In such cases, acquirers incur additional costs for information gathering and contracting, which increases uncertainty and leads to the mispricing of the target's true value (Giannetti and Yafeh 2012). High organizational cultural distance during the pre-deal phase may also contribute to an information gap caused by poor communication and lack of trust—factors central to our findings in H1a and H1b. This gap further increases uncertainty and ultimately leads to overpayment and inflated acquisition premiums (e.g., Alnahedh and Alhashel 2021; Smeulders et al. 2023).

Third, we examine the relationship between organizational cultural distance and the acquirer's post-deal innovativeness. Our findings reveal a negative impact of organizational cultural distance on the acquirer's long-term innovativeness, consistent across various measures of innovation. The cultural differences driving these effects vary: differences in adhocracy culture primarily influence patent growth, while differences in hierarchy culture affect new product development. This distinction stems from the differing nature of innovation processes: patenting requires creativity and vision, traits associated with adhocracy culture, whereas new product development demands coordination, timeliness, and consistency, which are aligned with hierarchy culture (Cameron et al. 2006; Child et al. 2003).

Future research could explore whether the effects of organizational cultural distance between acquirers and targets vary depending on the level of target integration. Previous studies on national cultural differences have shown that integration levels can lead to different outcomes (Slangen 2006). However, an examination of this relationship in the context of organizational cultural distance is still missing. Therefore, future research should investigate the conditional factors that influence how organizational cultural differences affect M&A outcomes.

Our study contributes to the M&A literature by providing evidence on the relationship between organizational cultural distance, M&A success, acquisition premiums, and innovation. However, certain limitations must be acknowledged. First, our analysis of short-term M&A success assumes near-instantaneous, complete, and unbiased market reactions, which rely on the semi-strong form of the efficient market hypothesis (Fama 1970). While there is evidence that markets account for cultural differences when evaluating transactions (e.g., Aktas et al. 2011), it is possible that this information could be misinterpreted or influenced by other confounding factors. Second, our study focuses on M&A transactions between firms in major English-speaking economies, which limits the generalizability of our findings to other contexts. Future research could address this limitation by expanding the geographic scope and incorporating more representative data sources, such as employee reviews from local platforms. Third, our research is confined to completed transactions. Future studies could explore whether acquirers and targets with high organizational cultural distance are more likely to withdraw from announced deals or examine self-selection issues in the relationship between cultural distance and acquisition outcomes. Lastly, while data from Glassdoor.com provide valuable insights into organizational culture, there are potential shortcomings. Employee reviews are voluntary and may not fully represent the entire workforce, introducing possible biases. Additionally, employees who choose to submit reviews may have particularly strong positive or negative opinions, which could skew the data. Moreover, the textual nature of these reviews may not always capture the full complexity of organizational culture. Future research could consider triangulating these findings with additional data sources to provide a more comprehensive view of organizational culture.

Our findings have significant economic implications for practitioners involved in M&A transactions. First, our analysis underscores the importance of considering both national and organizational cultural differences. These differences can negatively impact M&A performance and reduce the acquiring firm's innovativeness. To mitigate these risks, acquiring firms must thoroughly analyze the target firm's organizational culture and compare it to their own. In particular, our research reveals that differences in market culture can have a detrimental effect on the acquiring firm's performance. Second, our results emphasize that cultural differences should align with the goals of the acquiring firm. Not all cultural differences have the same impact: for instance, market culture discrepancies are linked to negative effects on both short- and long-term performance, while differences in adhocracy culture hinder patent growth, and hierarchy culture disparities impede new product development. Third, our analysis highlights the critical need for a comprehensive evaluation of organizational culture, offering insight into why these effects occur. Acquiring firms often overvalue targets with high cultural distance, resulting in an inflated acquisition premium. To address this, practitioners should focus on closing information gaps between the firms involved in the transaction. These efforts can improve the accuracy of the target firm's valuation and increase the likelihood of realizing positive synergies in the post-acquisition phase.

Appendix

Appendix A—glassdoor review examples associated with the four dimensions of the competing values framework

Culture	Score	Sample review text
Adhocracy (create)		An adhocracy culture focuses on adaptability and flexibility to achieve growth and innovation within the organization
	0.0003	This review is for the office 365/outlook team.. * great people and management. * family friendly (great work-life balance). * great benefits. * great facilities (medical facilities, sports fields, i hear they even have a treehouse now). * free drinks cooler i've heard nightmares in certain teams, so ymmv depending on the team.. no free food
	0.9956	Fast paced, new products and technology, exciting opportunities and ability to try new and different things, support from management and colleagues constant re orgs. inconsistent messaging at times. travel. difficult/laborious to get someone promoted. too many systems and logins. holiday schedule
Clan (collaborate)		The clan culture emphasizes collaboration, teamwork, and employee development
	0.0003	Discounts on services. decent pay. the company has changed a lot, they are only interested in pushing sales and not disclosing the proper information to the customer. providing good customer service is not a concern for them anymore. the information the call center gives customers is not the same as the stores. they are eliminating the need for full time employees. they are eliminating many jobs in the united states. sadly, you deal with a lot of angry and frustrated people. retail hours
	0.9979	Amazing work life balance, 1 on 1 sales training, friendly work environment, and opportunity to move up. the people here are very nice and the ages of everyone varies from mid twenties and up in a balanced matter. everyone here wants to succeed and that energy is passed on to all employees. The only thing i wish we had were nicer bathrooms, but i can deal with that! commission structure could be better as well. not the best, but modest
Market (compete)		A market culture tries to maximize business or production performance by focusing on task completion and goal achievement
	0.0003	culture management good learning compensation and benefits policies flexibility cafe vaccination drive well equipped gym inhouse doctors, nurses, nutrition, gym coach and clinic nothing major i can think of. enjoyed working in the company and a great place to learn. inter-department teams work together
	0.9970	Nothing is worth the stress and aggregation they put you through. stay away if you can. salary is competitive. 401 k is ok. large company so easy to stay close to home if they permit. Overworked as if they are legally breaking labor laws. horrible management too down. management pushes you to fake numbers to improve metrics. questionable patient safety practices in pharmacy. hazardous work conditions many times on the sale floor as there is not enough hours/work ratio to finish work

Culture	Score	Sample review text
Hierarchy (control)		The hierarchical culture emphasizes clear rules, explicit instructions, and strict controls
	0.0005	The managers are great people, and very kind. i love all of my coworkers, and i love the work. copy center is fast paced and always different. love getting to know the products and learning as i went. the company makes cuts in the wrong places. cutting part time hours to under 25 a week, to save \$4 million a year. but sending the higher ups on vacations. not enough hours. obviously, no benefits
	0.9931	Great benefits for full time employees. it's corporate retail, so long periods of standing, and micro managing everything you do. but the biggest problem is stagnant wages, and when you do get a yearly raise it's in the 1–3% range. not somewhere for a career, unless you want to give up most of your personal time and become a salary slave. then your still going to get small raises, your able to compensate somewhat with the store bonus, depending on your store sales

Score represents the probability score inferred from the CultureBERT transformer model, which was manually pre-trained on 2000 Glassdoor reviews (Koch and Pasch 2022). Higher values indicate a high affiliation to the respective Competing Values Framework (Cameron et al. 2006) culture dimension. Since the dimensions are not mutually exclusive, a firm's review can have high affiliations with multiple dimensions.

Appendix B—variable definitions

Variable	Definition
Independent variables	
<i>acq_clan_culture</i>	Probability score is determined by applying the CultureBERT transformer (Koch & Pasch 2022) to firms' Glassdoor textual reviews. Bound between 0 and 1, with values close to 1 indicating a high clan affiliation. Firms' culture scores are first averaged by year and then averaged over all years until deal announcement Analogously for the other three competing value framework dimensions (adhocracy, market, hierarchy). Examples for the four dimensions are provided in Appendix A
<i>deal_clan_culture_abs</i>	Absolute difference between the acquirer's and target's clan culture. Analogously for the other three competing value framework dimensions (adhocracy, market, hierarchy)
<i>deal_culturaldistance</i>	Organizational cultural index, adapted from Kogut and Singh (1988) and corrected for quadratic influences according to recommendations from Konara and Mohr (2019). It measures the distance between the acquirer's and target's four cultural Competing Values Framework dimensions. Higher values indicate a higher organizational cultural distance between the acquirer and target

Variable	Definition
<i>deal_culturaldistance_js</i>	Jensen–Shannon (JS) divergence between the acquirers and targets CVF probability distributions. The measure was adapted from Corritore et al. (2020). Higher values indicate a higher cultural divergence between the acquirer and target
<i>deal_culturaldistance_eucl</i>	Euclidean distance between the acquirers and targets. It is defined as $deal_culturaldistance_eucl_{i,j} = \sqrt{\sum_{i=1}^k (a_i - a_j)^2}$ and measures the distance between the four cultural dimensions of the CFV of the acquirer and target. Higher values indicate greater organizational cultural distance between the acquirer and the target
<i>deal_culturaldistance_maha</i>	Mahanalobis distance measures the distance between the four cultural dimensions of the Competing Values Framework of the acquirer and the target. It was introduced to the cultural distance literature by Berry et al. (2010) and corrects for potential correlation among the CVF dimensions. Higher values indicate greater organizational cultural distance between the acquirer and the target
<i>deal_culturaldistance_quad</i>	This variable is the squared value of the <i>deal_culturaldistance</i> variable. It is used to test for nonlinear relationships in our robustness checks
<i>deal_high_culturaldistance</i>	This binary indicator variable indicates whether the organizational cultural distance between acquirer and target is greater than the 0.8 percentile as measured by <i>deal_culturaldistance</i>
Dependent variables	
<i>acq_car5</i> , <i>acq_car10</i>	Acquirer's cumulative abnormal returns based on market-adjusted returns measured over 10 (20) days around the acquisition announcement. The daily abnormal return is calculated as: $AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{M,t})$ where R equals the actual stock return of firm <i>i</i> on day <i>t</i> and R_m equals the market value-weighted return on day <i>t</i> . The firm's alpha and beta are estimated using the market model from -250 to -50 days before deal announcement. Next, the firm's expected return on day <i>t</i> is predicted using the estimated alpha and beta in combination with the remarket turn on day <i>t</i> , which is then subtracted from the firm's actual return. Lastly, the daily abnormal returns are aggregated over [-5, 5] and [-10, 10] days around the announcement date Information on stock market reactions was obtained from S&P Global Inc.'s Capital IQ database
<i>deal_car_weighted</i>	Market value-weighted combination of the cumulative abnormal returns of the acquirer and the target [-5, 5] days around the announcement date, using relative market values as weights
<i>deal_premium_1day</i> , <i>deal_premium_1week</i> , <i>deal_premium_1month</i>	Difference between the acquirer's payment and the target's market value, divided by the target's market value, measured one day (one week; one month) prior to the deal announcement Information on M&A payments was obtained from S&P Global Inc.'s Capital IQ database
<i>acq_2yr_sales_growth</i> , <i>acq_4yr_sales_growth</i>	Growth rate of sales two years after an M&A announcement compared to sales in the year before the announcement. Financial information was obtained from S&P Global Inc.'s Capital IQ database
<i>comb_2yr_sales_growth</i>	Growth rate of average sales two years after an M&A announcement compared to average sales of acquirer and target in the year before the announcement. Financial information was obtained from S&P Global Inc.'s Capital IQ database

Variable	Definition
<i>acq_2yr_patent_growth</i>	Growth rate of patents filed two years after an M&A announcement compared to the number of patents filed in the year before the announcement Patent filing data were obtained from the USPTO, the Canadian Intellectual Property Office, AusPat, and the UK Patent Document and Information Service
<i>acq_2yr_npd_growth</i>	Growth rate of new product launches two years after an M&A announcement versus the number of product launches in the year prior to the announcement Information on new product launches by the acquirer was obtained from S&P Global Inc.'s Capital IQ database
Deal controls	
<i>deal_value_ln</i>	Natural logarithm of the total value of consideration paid by the acquirer, excluding fees and reported expenses
<i>deal_all_cash_dummy</i>	Dummy variable that equals one if the deal was fully paid in cash
<i>deal_all_stock_dummy</i>	Dummy variable that equals one if the deal was fully paid in stocks
<i>deal_tenderoffer_dummy</i>	Dummy variable that equals one when a tender offer is launched for the target
<i>deal_friendly_dummy</i>	Dummy variable that equals one if the deal is marked as friendly
<i>deal_hofstede_distance</i>	National cultural distance between the acquirer's and target's nations, computed as the Euclidean distance of Hofstede's six cultural dimensions (Individualism, Power Distance, Uncertainty Avoidance, Femininity, Indulgence, Long-term orientation). Each distance is bound between 0 and 1
<i>deal_age_difference</i>	Absolute difference of <i>firm_age</i> between acquirer and target
<i>deal_size_difference</i>	Absolute difference of <i>firm_assets_lastyear_ln</i> between acquirer and target
<i>deal_roa_difference</i>	Absolute difference of <i>firm_roa_lastyear</i> between acquirer and target
<i>deal_sic_difference</i>	Absolute difference in 4-digit SIC industry codes between acquirer and target
Acquirer/target controls (<i>acq_ / tar_ prefixes</i>)	
<i>firm_age</i>	Difference between the year when the transaction was completed and the year when the firm was founded
<i>firm_assets_lastyear_ln</i>	Logarithm of the total assets of the firm in the last 12 months before the deal announcement
<i>firm_roa_lastyear</i>	Ratio of the firm's net income to total assets, measured 12 months before the deal announcement
<i>firm_mbratio</i>	Ratio of firm's market capitalization to book value of total assets at the end of the fiscal year prior to deal announcement
<i>acq_industrygrowth</i>	Average percentage change in revenue for the acquirer's 2-digit SIC industry sector, divided by the revenue reported in the year prior to deal announcement
<i>acq_dealexperience</i>	Number of deals successfully completed by the acquirer in the last three years prior to the announcement date, including the current deal
<i>acq_rd_intensity</i>	Ratio of the firm's research and development (R&D) expenditures to revenues in the year of the deal announcement

Acknowledgements We would like to thank Glassdoor for generously allowing us to use the data as part of this study.

Data availability The data that support the findings of this study are available from the corresponding author upon request.

Declarations

Conflict of interest Authors have no relevant financial or non-financial interests to disclose.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

- Ahammad MF, Tarba SY, Liu Y, Glaister KW (2016) Knowledge transfer and cross-border acquisition performance: the impact of cultural distance and employee retention. *Int Bus Rev* 25:66–75. <https://doi.org/10.1016/j.ibusrev.2014.06.015>
- Ahern KR, Daminelli D, Fracassi C (2015) Lost in translation? The effect of cultural values on mergers around the world. *J Financ Econ* 117:165–189. <https://doi.org/10.1016/j.jfineco.2012.08.006>
- Ahmed AS, Chen LH, Duellman S, Sun Y (2023) Targets' accounting conservatism and the gains from acquisition. *Contemporary Accounting Res* 40:7–40. <https://doi.org/10.1111/1911-3846.12814>
- Ahuja G, Katila R (2001) Technological acquisitions and the innovation performance of acquiring firms: a longitudinal study. *Strat Mgmt J* 22:197–220. <https://doi.org/10.1002/smj.157>
- Akerlof GA (1970) The market for, "lemons": quality uncertainty and the market mechanism. *Quart J Econ* 84:488. <https://doi.org/10.2307/1879431>
- Akerlof GA (1997) Social distance and social decisions. *Econometrica* 65:1005. <https://doi.org/10.2307/2171877>
- Aktas N, de Bodt E, Cousin J-G (2011) Do financial markets care about SRI? Evidence from mergers and acquisitions. *J Bank Finance* 35:1753–1761. <https://doi.org/10.1016/j.jbankfin.2010.12.006>
- Alexandridis G, Hoepner AG, Huang Z, Oikonomou I (2022) Corporate social responsibility culture and international M&As. *Br Account Rev* 54:101035. <https://doi.org/10.1016/j.bar.2021.101035>
- Alnahedh S, Alhashel B (2021) Political ideology in M&A. *J Bus Fin & Acc* 48:1711–1746. <https://doi.org/10.1111/jbfa.12531>
- Andrade G, Mitchell M, Stafford E (2001) New evidence and perspectives on mergers. *J Econ Perspect* 15:103–120. <https://doi.org/10.1257/jep.15.2.103>
- Angwin D (2001) Mergers and acquisitions across European borders: National perspectives on preacquisition due diligence and the use of professional advisers. *J World Bus* 36:32–57. [https://doi.org/10.1016/S1090-9516\(00\)00053-5](https://doi.org/10.1016/S1090-9516(00)00053-5)
- Arikan AM, Stulz RM (2016) Corporate acquisitions, diversification, and the firm's life cycle. *J Financ* 71:139–194. <https://doi.org/10.1111/jofi.12362>
- Arrow KJ (1974) *The limits of organization*. Norton, New York
- Aybar B, Ficici A (2009) Cross-border acquisitions and firm value: an analysis of emerging-market multinationals. *J Int Bus Stud* 40:1317–1338. <https://doi.org/10.1057/jibs.2009.15>

- Baik B, Cho K, Choi W, Kang J (2015) The role of institutional environments in cross-border mergers: a perspective from bidders' earnings management behavior. *Manag Int Rev* 55:615–646. <https://doi.org/10.1007/s11575-015-0249-4>
- Bange MM, Mazzeo MA (2004) Board composition, board effectiveness, and the observed form of takeover bids. *Rev Financ Stud* 17:1185–1215. <https://doi.org/10.1093/rfs/hhh001>
- Barkema H, Bell J, Pennings J (1996) Foreign entry, cultural barriers, and learning. *Strat Mgmt J* 17:151–166
- Barracrough K, Robinson DT, Smith T, Whaley RE (2013) Using option prices to infer overpayments and synergies in M&A transactions. *Rev Financ Stud* 26:695–722. <https://doi.org/10.1093/rfs/hhs119>
- Bauer F, Matzler K (2014) Antecedents of M&A success: the role of strategic complementarity, cultural fit, and degree and speed of integration. *Strat Mgmt J* 35:269–291. <https://doi.org/10.1002/smj.2091>
- Bauer F, Matzler K, Wolf S (2016) M&A and innovation: the role of integration and cultural differences—a central European targets perspective. *Int Bus Rev* 25:76–86. <https://doi.org/10.1016/j.ibusrev.2014.07.010>
- Bell RG, Filatotchev I, Rasheed AA (2012) The liability of foreignness in capital markets: sources and remedies. *J Int Bus Stud* 43:107–122. <https://doi.org/10.1057/jibs.2011.55>
- Bena J, Li K (2014) Corporate innovations and mergers and acquisitions. *J Financ* 69:1923–1960. <https://doi.org/10.1111/jofi.12059>
- Bereskin F, Byun SK, Officer MS, Oh J-M (2018) The effect of cultural similarity on mergers and acquisitions: evidence from corporate social responsibility. *J Financ Quant Anal* 53:1995–2039. <https://doi.org/10.1017/S0022109018000716>
- Berry H, Guillén MF, Zhou N (2010) An institutional approach to cross-national distance. *J Int Bus Stud* 41:1460–1480. <https://doi.org/10.1057/jibs.2010.28>
- Bhagat RS, McQuaid SJ (1982) Role of subjective culture in organizations: a review and directions for future research. *J Appl Psychol* 67:653–685. <https://doi.org/10.1037/0021-9010.67.5.653>
- Blei DM, Ng AY, Jordan MI (2001) Latent dirichlet allocation. *Adv Neural Inf Process Syst* 14(3):601–608
- Blonigen BA, Taylor CT (2000) R&D intensity and acquisitions in high-technology industries: evidence from the US electronic and electrical equipment industries. *J Ind Econ* 48:47–70. <https://doi.org/10.1111/1467-6451.00112>
- Bochkay K, Brown SV, Leone AJ, Tucker JW (2023) Textual analysis in accounting: what's next? *Contemporary Accounting Res* 40:765–805. <https://doi.org/10.1111/1911-3846.12825>
- Bouwman CHS (2013) The role of corporate culture in mergers & acquisitions
- Brown SJ, Warner JB (1985) Using daily stock returns: the case of event studies. *J Financ Econ* 14:3–31. [https://doi.org/10.1016/0304-405X\(85\)90042-X](https://doi.org/10.1016/0304-405X(85)90042-X)
- Buck T, Shahrim A (2005) The translation of corporate governance changes across national cultures: the case of Germany. *J Int Bus Stud* 36:42–61. <https://doi.org/10.1057/palgrave.jibs.8400109>
- Buono AF, Bowditch JL, Lewis JW (1985) When cultures collide: the anatomy of a merger. *Hum Relat* 38:477–500. <https://doi.org/10.1177/001872678503800506>
- Burgelman RA (1986) Managing corporate entrepreneurship. *Technology in the modern corporation*. Elsevier, Amsterdam, pp 1–13
- Büschgens T, Bausch A, Balkin DB (2013) Organizational culture and innovation: a meta-analytic review. *J Prod Innov Manag* 30:763–781. <https://doi.org/10.1111/jpim.12021>
- Cameron K, Quinn R, DeGraff J, Thakor A (2006) *Competing values leadership: Creating value in organizations*. Edward Elgar, Cheltenham
- Campbell DW, Shang R (2021) Tone at the bottom: measuring corporate misconduct risk from the text of employee reviews. *Manage Sci*. <https://doi.org/10.1287/mnsc.2021.4211>
- Carow K, Heron R, Saxton T (2004) Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions. *Strat Mgmt J* 25:563–585. <https://doi.org/10.1002/smj.404>
- Cartwright S, Cooper CL (1993) The role of culture compatibility in successful organizational marriage. *AMP* 7:57–70. <https://doi.org/10.5465/ame.1993.9411302324>
- Chakrabarti R, Gupta-Mukherjee S, Jayaraman N (2009) Mars-venus marriages: culture and cross-border M&A. *J Int Bus Stud* 40:216–236. <https://doi.org/10.1057/jibs.2008.58>
- Chatman JA, O'Reilly CA (2016) Paradigm lost: reinvigorating the study of organizational culture. *Res Organ Behavior* 36:199–224. <https://doi.org/10.1016/j.riob.2016.11.004>

- Chatterjee S, Lubatkin MH, Schweiger DM, Weber Y (1992) Cultural differences and shareholder value in related mergers: linking equity and human capital. *Strat Mgmt J* 13:319–334. <https://doi.org/10.1002/smj.4250130502>
- Chatterjee A, Hambrick DC (2011) Executive personality, capability cues, and risk taking. *Adm Sci Q* 56:202–237. <https://doi.org/10.1177/0001839211427534>
- Chemmanur TJ, Rajaiya H, Sheng J (2019) How does soft information affect external firm financing? Evidence from online employee ratings. *SSRN Electron J*. <https://doi.org/10.2139/ssrn.3507695>
- Chen C-W, Collins DW, Kravet TD, Mergenthaler RD (2018) Financial statement comparability and the efficiency of acquisition decisions. *Contemp Account Res* 35:164–202. <https://doi.org/10.1111/1911-3846.12380>
- Chen J, Liu L (2022) Family firms, national culture and corporate social performance: a meta-analysis. *CCSM* 29:379–402. <https://doi.org/10.1108/CCSM-09-2020-0178>
- Cheng C, Yang M (2017) Enhancing performance of cross-border mergers and acquisitions in developed markets: the role of business ties and technological innovation capability. *J Bus Res* 81:107–117. <https://doi.org/10.1016/j.jbusres.2017.08.019>
- Cherchem N (2017) The relationship between organizational culture and entrepreneurial orientation in family firms: does generational involvement matter? *J Fam Bus Strat* 8:87–98. <https://doi.org/10.1016/j.jfbs.2017.04.001>
- Child J, Faulkner D, Pitkethly R (2003) *The management of international acquisitions*. Oxford University Press, Oxford
- Cho S, Chung CY (2022) Review of the literature on merger waves. *JRFM* 15:432. <https://doi.org/10.3390/jrfm15100432>
- Christoffersen J, Globberman S, Nielsen BB (2013) Cultural distance and the performance of international joint ventures: a critical assessment of model specifications and variable measurement. *IJSBA* 3:93. <https://doi.org/10.1504/IJSBA.2013.058299>
- Conn RL, Cosh A, Guest PM, Hughes A (2005) The impact on UK acquirers of domestic, cross-border, public and private acquisitions. *J Bus Financ Acc* 32:815–870. <https://doi.org/10.1111/j.0306-686X.2005.00615.x>
- Connelly BL, Certo ST, Ireland RD, Reutzel CR (2011) Signaling theory: a review and assessment. *J Manag* 37:39–67. <https://doi.org/10.1177/0149206310388419>
- Connelly BS, Sackett PR, Waters SD (2013) Balancing treatment and control groups in quasi-experiments: an introduction to propensity scoring. *Pers Psychol* 66:407–442. <https://doi.org/10.1111/peps.12020>
- Cordero R (1990) The measurement of innovation performance in the firm: an overview. *Res Policy* 19:185–192. [https://doi.org/10.1016/0048-7333\(90\)90048-B](https://doi.org/10.1016/0048-7333(90)90048-B)
- Corritore M (2018) Weakening cultural strength: firm performance volatility's impact on norm consensus. *SSRN Electron J*. <https://doi.org/10.2139/ssrn.3152747>
- Corritore M, Goldberg A, Srivastava SB (2020) Duality in diversity: how intrapersonal and interpersonal cultural heterogeneity relate to firm performance. *Adm Sci Q* 65:359–394. <https://doi.org/10.1177/0001839219844175>
- Covin JG, Slevin DP (1988) The influence of organization structure on the utility of an entrepreneurial top management style. *Jour of Manage Stud* 25:217–234. <https://doi.org/10.1111/j.1467-6486.1988.tb00033.x>
- Dahlgren PW, Bausch A (2019) How opportunistic culture affects financial performance in outsourcing relationships: a meta-analysis. *J Int Manag* 25:81–100. <https://doi.org/10.1016/j.intman.2018.08.001>
- Datta DK (1991) Organizational fit and acquisition performance: effects of post-acquisition integration. *Strat Mgmt J* 12:281–297. <https://doi.org/10.1002/smj.4250120404>
- Dauber D (2012) Opposing positions in M&A research: culture, integration and performance. *Cross Cult Manage* 19:375–398. <https://doi.org/10.1108/13527601211247107>
- de Long DW, Fahey L (2000) Diagnosing cultural barriers to knowledge management. *AMP* 14:113–127. <https://doi.org/10.5465/AME.2000.3979820>
- Deshpandé R, Farley JU (2004) Organizational culture, market orientation, innovativeness, and firm performance: an international research odyssey. *Int J Res Mark* 21:3–22. <https://doi.org/10.1016/j.ijresmar.2003.04.002>
- Eckbo BE (2009) Bidding strategies and takeover premiums: a review. *J Corp Finan* 15:149–178. <https://doi.org/10.1016/j.jcorpfin.2008.09.016>

- Eisend M, Evanschitzky H, Gilliland DI (2016) The influence of organizational and national culture on new product performance. *J Prod Innov Manag* 33:260–276. <https://doi.org/10.1111/jpim.12268>
- Ellis KM, Reus TH, Lamont BT, Ranft AL (2011) Transfer effects in large acquisitions: how size-specific experience matters. *Acad Manag J* 54:1261–1276. <https://doi.org/10.5465/amj.2009.0122>
- Fama EF (1970) Efficient capital markets: a review of theory and empirical work. *J Financ* 25:383. <https://doi.org/10.2307/2325486>
- Fang Y, Fiordelisi F, Hasan I, Leung WS, Wong G (2023) Corporate culture and firm value: evidence from crisis. *J Bank Finance* 146:106710. <https://doi.org/10.1016/j.jbankfin.2022.106710>
- Gallini NT (2002) The economics of patents: lessons from recent US patent reform. *J Econ Perspect* 16(2):131–54. <https://doi.org/10.1257/0895330027292>
- Garcia R, Calantone R (2002) A critical look at technological innovation typology and innovativeness terminology: a literature review. *J Prod Innov Man* 19:110–132. <https://doi.org/10.1111/1540-5885.1920110>
- Ghosh A, Ruland W (1998) Managerial ownership, the method of payment for acquisitions, and executive job retention. *J Financ* 53:785–798. <https://doi.org/10.1111/0022-1082.325125>
- Giannetti M, Yafeh Y (2012) Do cultural differences between contracting parties matter? Evidence from syndicated bank loans. *Manage Sci* 58:365–383. <https://doi.org/10.1287/mnsc.1110.1378>
- Graham JR, Grennan J, Harvey CR, Rajgopal S (2022) Corporate culture: evidence from the field. *J Financ Econ* 146:552–593. <https://doi.org/10.1016/j.jfineco.2022.07.008>
- Grimpe C (2007) Successful product development after firm acquisitions: the role of research and development. *J Prod Innov Man* 24:614–628. <https://doi.org/10.1111/j.1540-5885.2007.00275.x>
- Guiso L, Sapienza P, Zingales L (2015) The value of corporate culture. *J Financ Econ* 117:60–76. <https://doi.org/10.1016/j.jfineco.2014.05.010>
- Gupta A, Briscoe F (2020) Organizational political ideology and corporate openness to social activism. *Adm Sci Q* 65:524–563. <https://doi.org/10.1177/0001839219852954>
- Hall BH, Jaffe A, Trajtenberg M (2005) Market value and patent citations. *RAND Journal of economics*, p 16–38
- Haspeslagh PC, Jemison DB (1991) The challenge of renewal through acquisitions. *Plan Rev* 19:27–30. <https://doi.org/10.1108/eb054320>
- Haucap J, Rasch A, Stiebale J (2019) How mergers affect innovation: theory and evidence. *Int J Ind Organ* 63:283–325. <https://doi.org/10.1016/j.ijindorg.2018.10.003>
- Haunschild PR (1994) How much is that company worth?: Interorganizational relationships, uncertainty, and acquisition premiums. *Adm Sci Q* 39:391. <https://doi.org/10.2307/2393296>
- Hayward MLA, Hambrick DC (1997) Explaining the premiums paid for large acquisitions: evidence of CEO hubris. *Adm Sci Q* 42:103. <https://doi.org/10.2307/2393810>
- Hitt MA, Hoskisson RE, Ireland RD (1990) Mergers and acquisitions and managerial commitment to innovation in M-Form firms. *Strateg Manage J* 11:29–47
- Hitt MA, Ireland RD, Harrison JS, Hoskisson RE (1991) Effects of acquisitions on R&D inputs and outputs. *Acad Manag J* 34:693–706. <https://doi.org/10.2307/256412>
- Hitt MA, Hoskisson RE, Johnson RA, Moesel DD (1996) The market for corporate control and firm innovation. *Acad Manag J* 39:1084–1119. <https://doi.org/10.2307/256993>
- Hofstede G (1980) Culture and organizations. *Int Stud Manag Organ* 10:15–41. <https://doi.org/10.1080/00208825.1980.11656300>
- Hofstede GH (2001) Culture's consequences: comparing values, behaviors, institutions, and organizations across nations, 2nd edn. SAGE, Thousand Oaks
- Homburg F, Rost K, Osterloh M (2009) Do synergies exist in related acquisitions? A meta-analysis of acquisition studies. *RMS* 3:75–116
- Homburg C, Bucerius M (2006) Is speed of integration really a success factor of mergers and acquisitions? An analysis of the role of internal and external relatedness. *Strat Mgmt J* 27:347–367. <https://doi.org/10.1002/smj.520>
- Hope O-K, Thomas WB, Vyas D (2011) Financial credibility, ownership, and financing constraints in private firms. *SSRN J*. <https://doi.org/10.2139/ssrn.1264730>
- Jehn KA, Northcraft GB, Neale MA (1999) Why differences make a difference: a field study of diversity, conflict and performance in workgroups. *Adm Sci Q* 44:741–763. <https://doi.org/10.2307/2667054>
- Jemison DB, Sitkin SB (1986) Corporate acquisitions: a process perspective. *Acad Manag Rev* 11:145. <https://doi.org/10.2307/258337>
- Jentner D, Lewellen K (2015) CEO preferences and acquisitions. *J Financ* 70:2813–2852. <https://doi.org/10.1111/jofi.12283>

- Ji Y, Rozenbaum O, Welch KT (2022) Corporate culture and financial reporting risk: looking through the glassdoor
- Kim J-Y, Halebian J, Finkelstein S (2011) When firms are desperate to grow via acquisition: the effect of growth patterns and acquisition experience on acquisition premiums. *Adm Sci Q* 56:26–60. <https://doi.org/10.2189/asqu.2011.56.1.026>
- King DR, Wang G, Samimi M, Cortes AF (2021) A meta-analytic integration of acquisition performance prediction. *Jour of Manage Stud* 58:1198–1236. <https://doi.org/10.1111/joms.12636>
- Kirkman BL, Lowe KB, Gibson CB (2006) A quarter century of culture's Consequences: a review of empirical research incorporating Hofstede's cultural values framework. *J Int Bus Stud* 37:285–320. <https://doi.org/10.1057/palgrave.jibs.8400202>
- Koch S, Pasch S (2022) CultureBERT: fine-tuning transformer-based language models for corporate culture
- Kogut B, Singh H (1988) The effect of national culture on the choice of entry mode. *J Int Bus Stud* 19:411–432. <https://doi.org/10.1057/palgrave.jibs.8490394>
- Konara P, Mohr A (2019) Why we should stop using the Kogut and Singh index. *Manag Int Rev* 59:335–354. <https://doi.org/10.1007/s11575-019-00378-7>
- Krishnan HA, Miller A, Judge WQ (1997) Diversification and top management team complementarity: is performance improved by merging similar or dissimilar teams? *Strat Mgmt J* 18:361–374. [https://doi.org/10.1002/\(SICI\)1097-0266\(199705\)18:5%3c361::AID-SMJ866%3e3.0.CO;2-L](https://doi.org/10.1002/(SICI)1097-0266(199705)18:5%3c361::AID-SMJ866%3e3.0.CO;2-L)
- Kumar MS (1985) Growth, acquisition activity and firm size: evidence from the United Kingdom. *J Ind Econ* 33:327. <https://doi.org/10.2307/2098540>
- Laamanen T (2007) On the role of acquisition premium in acquisition research. *Strat Mgmt J* 28:1359–1369. <https://doi.org/10.1002/smj.639>
- Langlois CC, Schlegelmilch BB (1990) Do Corporate codes of ethics reflect national character? Evidence from Europe and the United States. *J Int Bus Stud* 21:519–539. <https://doi.org/10.1057/palgrave.jibs.8490340>
- Lawrence ER, Raithatha M, Rodriguez I (2021) The effect of cultural and institutional factors on initiation, completion, and duration of cross-border acquisitions. *J Corp Finan* 68:101950. <https://doi.org/10.1016/j.jcorpfin.2021.101950>
- Lee G, Cho SY, Arthurs J, Lee EK (2019) CEO pay inequity, CEO-TMT pay gap, and acquisition premiums. *J Bus Res* 98:105–116. <https://doi.org/10.1016/j.jbusres.2019.01.023>
- Lee KH (2018) Cross-border mergers and acquisitions amid political uncertainty: a bargaining perspective. *Strat Mgmt J* 39:2992–3005. <https://doi.org/10.1002/smj.2944>
- Li K, Mai F, Shen R, Yan X (2021) Measuring corporate culture using machine learning. *Rev Financ Stud* 34:3265–3315. <https://doi.org/10.1093/rfs/hhaa079>
- Li C, Halebian J (2022) The influence of nation-level institutions on acquisition premiums: a cross-country comparative study. *J Manag* 48:878–904. <https://doi.org/10.1177/01492063211010219>
- Lim J, Makhija AK, Shenkar O (2016) The asymmetric relationship between national cultural distance and target premiums in cross-border M&A. *J Corp Finan* 41:542–571. <https://doi.org/10.1016/j.jcorpfin.2016.07.007>
- Liu Y, Ott M, Goyal N, Du J, Joshi M, Chen D, Levy O, Lewis M, Zettlemoyer L, Stoyanov V (2019) RoBERTa: a robustly optimized BERT pretraining approach. [arXiv:1907.11692](https://arxiv.org/abs/1907.11692)
- Loughran T, Vijh AM (1997) Do long-term shareholders benefit from corporate acquisitions? *J Financ* 52:1765. <https://doi.org/10.2307/2329464>
- Louis MR (1981) A cultural perspective on organizations: the need for and consequences of viewing organizations as culture-bearing milieux. *HSM* 2:246–258. <https://doi.org/10.3233/HSM-1981-2403>
- Martin J (1992) *Cultures in organizations—three perspectives*. Oxford University Press
- Martin X, Shalev P (2017) Target firm-specific information and acquisition efficiency. *Manage Sci* 63:672–690. <https://doi.org/10.1287/mnsc.2015.2371>
- Martínez-Azúa B, Dias Á, Sama-Berrolcal C (2024) The key role of market orientation in innovation ambidexterity in agribusiness firms. *Rev Manage Sci*. <https://doi.org/10.1007/s11846-024-00732-6>
- Mikolov T, Sutskever I, Chen K, Corrado GS, Dean J (2013) Distributed representations of words and phrases and their compositionality. In: *Advances in neural information processing systems*, vol 26
- Moeller SB, Schlingemann FP, Stulz RM (2004) Firm size and the gains from acquisitions. *J Financ Econ* 73:201–228. <https://doi.org/10.1016/j.jfineco.2003.07.002>


- Moeller SB, Schlingemann FP, Stulz RM (2007) How do diversity of opinion and information asymmetry affect acquirer returns? *Rev Financ Stud* 20:2047–2078. <https://doi.org/10.1093/rfs/hhm040>
- Morck R, Shleifer A, Vishny RW (1990) Do managerial objectives drive bad acquisitions? *J Financ* 45:31. <https://doi.org/10.2307/2328808>
- Morosini P, Shane S, Singh H (1998) National cultural distance and cross-border acquisition performance. *J Int Bus Stud* 29:137–158. <https://doi.org/10.1057/palgrave.jibs.8490029>
- Mukherji A, Mukherji J, Dibrell C, Francis JD (2013) Overbidding in cross-border acquisitions: misperceptions in assessing and valuing knowledge. *J World Bus* 48:39–46. <https://doi.org/10.1016/j.jwb.2012.06.005>
- Naranjo-Valencia JC, Jiménez-Jiménez D, Sanz-Valle R (2011) Innovation or imitation? The role of organizational culture. *Manag Decis* 49:55–72. <https://doi.org/10.1108/0025174111094437>
- Narita K, Tena JD, Detotto C (2023) Causal inference with observational data: a tutorial on propensity score analysis. *Leadersh Q* 34:101678. <https://doi.org/10.1016/j.leaqua.2023.101678>
- Oberoi S (2020) 6 Examples of merger failures owing to cultural incompatibility
- Ozdemir O, Binesh F, Erkmén E (2022) The effect of target's CSR performance on M&A deal premiums: a case for service firms. *RMS* 16(4):1001–1034. <https://doi.org/10.1007/s11846-021-00471-y>
- Pan X, Zhang J (2024) Language similarity and M&A transactions. *Eur Account Rev* 33(3):741–70. <https://doi.org/10.1080/09638180.2022.2117221>
- Pesch R, Bouncken RB (2017) The double-edged sword of cultural distance in international alliances. *CCSM* 24:33–54. <https://doi.org/10.1108/CCSM-03-2016-0065>
- Prabhu JC, Chandy RK, Ellis ME (2005) The impact of acquisitions on innovation: poison pill, placebo, or tonic? *J Mark* 69:114–130. <https://doi.org/10.1509/jmkg.69.1.114.55514>
- Pritchett P (1985) After the merger: managing the shockwaves. Dow Jones-Irwin, Dallas/Tex.
- Quinn RE, Rohrbaugh J (1983) A spatial model of effectiveness criteria: towards a competing values approach to organizational analysis. *Manage Sci* 29:363–377. <https://doi.org/10.1287/mnsc.29.3.363>
- Raghavendra R, Vermaelen T (1998) Glamour, value and the post-acquisition performance of acquiring firms. *J Financ Econ* 49:223–253. [https://doi.org/10.1016/S0304-405X\(98\)00023-3](https://doi.org/10.1016/S0304-405X(98)00023-3)
- Rahallah NA, Wei PP (2013) Frequent cross-border acquirers from emerging countries and cultural distance: does the cultural difference of the initial deal matter? *J Multinatl Financ Manag* 23:356–373. <https://doi.org/10.1016/j.mulfin.2013.06.001>
- Ramaswamy K (1997) The performance impact of strategic similarity in horizontal mergers: evidence from the U.S. *Bank Indus Acad Manage J* 40:697–715. <https://doi.org/10.2307/257059>
- Renneboog L, Vansteenkiste C (2019) Failure and success in mergers and acquisitions. *J Corp Finan* 58:650–699. <https://doi.org/10.1016/j.jcorpfin.2019.07.010>
- Reuer JJ, Tong TW, Wu C-W (2012) A signaling theory of acquisition premiums: evidence from IPO targets. *Acad Manag J* 55:667–683. <https://doi.org/10.5465/amj.2010.0259>
- Rosenbaum PR, Rubin DB (1983) The central role of the propensity score in observational studies for causal effects. *Biometrika* 70:41. <https://doi.org/10.2307/2335942>
- Rosenbaum PR, Rubin DB (1984) Reducing bias in observational studies using subclassification on the propensity score. *J Am Stat Assoc* 79:516. <https://doi.org/10.2307/2288398>
- Rossi S, Volpin PF (2004) Cross-country determinants of mergers and acquisitions. *J Financ Econ* 74:277–304. <https://doi.org/10.1016/j.jfineco.2003.10.001>
- Roth K, O'Donnell S (1996) Foreign subsidiary compensation strategy: an agency theory perspective. *Acad Manag J* 39:678–703. <https://doi.org/10.2307/256659>
- Rottig D (2017) Meta-analyses of culture's consequences for acquisition performance. *IJOEM* 12:8–37. <https://doi.org/10.1108/IJOEM-01-2015-0003>
- Rubin DB (2006) Matched sampling for causal effects. Cambridge University Press
- Sarala RM, Vaara E (2010) Cultural differences, convergence, and crossvergence as explanations of knowledge transfer in international acquisitions. *J Int Bus Stud* 41:1365–1390. <https://doi.org/10.1057/jibs.2009.89>
- Schein EH (1985) Organizational culture and leadership. Wiley, Hoboken
- Schneider SC (1988) National versus corporate culture: implications for human resource management. *Hum Resour Manage* 27:231–246. <https://doi.org/10.1002/hrm.3930270207>
- Schneider SC, de Meyer A (1991) Interpreting and responding to strategic issues: the impact of national culture. *Strat Mgmt J* 12:307–320. <https://doi.org/10.1002/smj.4250120406>

- Schweiger DM (2002) M&A integration—a framework for executives & manager. McGraw-Hill Book Co, New York
- Schwert GW (2000) Hostility in takeovers: in the eyes of the beholder? *J Financ* 55:2599–2640
- Sheth J, Malhotra N, Sheth JN, Malhotra NK (eds) (2011) Wiley international encyclopedia of marketing. Wiley-Blackwell, Chichester
- Sirower ML (1997) The synergy trap: how companies lose the acquisition game. Free Press, Mankato
- Sitkin SB, Stickel D (1996) The Road to Hell: The Dynamics of Distrust in an Era of Quality. In: Kramer R, Tyler T (eds) *Trust in Organizations: Frontiers of Theory and Research*. SAGE Publications, Inc, Thousand Oaks, pp 196–215
- Slangen AH (2006) National cultural distance and initial foreign acquisition performance: the moderating effect of integration. *J World Bus* 41:161–170. <https://doi.org/10.1016/j.jwb.2006.01.003>
- Smeulders D, Dekker HC, van den Abbeele A (2023) Post-acquisition integration: managing cultural differences and employee resistance using integration controls. *Account Organ Soci*. <https://doi.org/10.1016/j.aos.2022.101427>
- Sørensen JB (2002) The strength of corporate culture and the reliability of firm performance. *Adm Sci Q* 47:70–91. <https://doi.org/10.2307/3094891>
- Srivastava SB, Goldberg A, Manian VG, Potts C (2018) Enculturation trajectories: language, cultural adaptation, and individual outcomes in organizations. *Manage Sci* 64:1348–1364. <https://doi.org/10.1287/mnsc.2016.2671>
- Stahl GK, Voigt A (2008) Do cultural differences matter in mergers and acquisitions? A tentative model and examination. *Organ Sci* 19:160–176. <https://doi.org/10.1287/orsc.1070.0270>
- Stuart EA (2010) Matching methods for causal inference: a review and a look forward. *Stat Sci* 25:1–21. <https://doi.org/10.1214/09-STS313>
- Suk I, Wang M (2021) Does target firm insider trading signal the target's synergy potential in mergers and acquisitions? *J Financ Econ* 142:1155–1185
- Tajfel H (1981) *Human groups and social categories—studies in social psychology*. Cambridge University Press, Cambridge
- Teerikangas S, Very P (2006) The culture-performance relationship in M&A: from Yes/No to how. *Br J Management* 17:S31–S48. <https://doi.org/10.1111/j.1467-8551.2006.00477.x>
- Turner J (1982) Toward a cognitive definition of the group. In: Tajfel H (ed) *Social identity and inter-group relations*. Cambridge University Press, Cambridge
- Vaara E (2002) On the discursive construction of success/failure in narratives of post-merger integration. *Organ Stud* 23:211–248. <https://doi.org/10.1177/0170840602232003>
- Vaara E, Sarala R, Stahl GK, Björkman I (2012) The impact of organizational and national cultural differences on social conflict and knowledge transfer in international acquisitions. *Jour of Manage Stud* 49:1–27. <https://doi.org/10.1111/j.1467-6486.2010.00975.x>
- Vaswani A et al (2017) Attention is all you need. In: *Advances in neural information processing systems*
- von der Mosel J, Trautsch A, Herbold S (2023) On the validity of pre-trained transformers for natural language processing in the software engineering domain. *IEEE Trans Software Eng* 49:1487–1507. <https://doi.org/10.1109/TSE.2022.3178469>
- Wang D, Hain DS, Larimo J, Dao LT (2020) Cultural differences and synergy realization in cross-border acquisitions. *Int Bus Rev* 29:101675. <https://doi.org/10.1016/j.ibusrev.2020.101675>
- Watson WE, Kumar K, Michaelsen LK (1993) Cultural diversity's impact on interaction process and performance: comparing homogeneous and diverse task groups. *Acad Manag J* 36:590–602. <https://doi.org/10.2307/256593>
- Weber Y (1996) Corporate cultural fit and performance in mergers and acquisitions. *Hum Relat* 49:1181–1202. <https://doi.org/10.1177/001872679604900903>
- Weber RA, Camerer CF (2003) Cultural conflict and merger failure: an experimental approach. *Manage Sci* 49:400–415. <https://doi.org/10.1287/mnsc.49.4.400.14430>
- Woo CY, Willard GE, Daellenbach US (1992) Spin-off performance: a case of overstated expectations? *Strat Mgmt J* 13:433–447. <https://doi.org/10.1002/smj.4250130604>
- Zaheer A, McEvily B, Perrone V (1998) Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organ Sci* 9:141–159. <https://doi.org/10.1287/orsc.9.2.141>
- Zheng W, Yang B, McLean GN (2010) Linking organizational culture, structure, strategy, and organizational effectiveness: mediating role of knowledge management. *J Bus Res* 63:763–771. <https://doi.org/10.1016/j.jbusres.2009.06.005>

- Zollo M, Meier D (2008) What is M&A performance? *AMP* 22:55–77. <https://doi.org/10.5465/amp.2008.34587995>
- Zollo M, Singh H (2004) Deliberate learning in corporate acquisitions: post-acquisition strategies and integration capability in U.S. bank mergers. *Strat Mgmt J* 25:1233–1256. <https://doi.org/10.1002/smj.426>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Authors and Affiliations

Marius Brede¹  · Hannes Gerstel¹ · Arnt Wöhrmann¹ · Andreas Bausch¹

✉ Marius Brede
Marius.Brede@wirtschaft.uni-giessen.de

Hannes Gerstel
Hannes.Gerstel@wirtschaft.uni-giessen.de

Arnt Wöhrmann
Arnt.Woehrmann@wirtschaft.uni-giessen.de

Andreas Bausch
Andreas.Bausch@wirtschaft.uni-giessen.de

¹ Giessen University, Licher Str. 62, 35394 Giessen, Germany