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A Tale of Two Signals: Partner CSR versus CSI and Alliance Formation

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A Tale of Two Signals: Partner CSR versus CSI and Alliance Formation

ABSTRACT

This study outlines two signaling mechanisms—trust and spillover—through which a potential partner’s corporate social responsibility (CSR) and corporate social irresponsibility (CSI) affect alliance formation. Extending a key insight in signaling theory that positive and negative signals are conceptually distinct, we propose that which mechanism is dominant in explaining alliance formation varies between CSR and CSI. Specifically, we argue that the dominant signaling mechanism for CSR is the trust mechanism, through which CSR signals the moral character of a potential partner, which is used by the focal firm to infer the partner’s trustworthiness. In contrast, CSI negatively affects alliance formation primarily through a spillover mechanism: CSI signals a potential partner’s moral character to a firm’s external stakeholders. Stakeholders’ negative assessments based on this signal might then spill over to the focal firm if it forms an alliance with that partner. We further identify two contingency factors—namely, proximity and media coverage—that help verify the dominant signaling roles of partner CSR and CSI. Using a sample of alliances formed by high-tech firms between 1995 and 2016, we find support for our predictions.

INTRODUCTION

The formation of alliances is critical for firms to access external resources and sustain competitiveness (Lavie, 2006; Mowery, Oxley, & Silverman, 1998; Sampson, 2007). One critical decision in alliance formation is selecting partners, which can significantly impact firm performance in at least two ways (Diestre & Rajagopalan, 2012; Reuer & Lahiri, 2014; Ryu, Reuer, & Brush, 2020). First, the partner's attributes have a direct impact on the alliance outcomes. For instance, transacting with a trustworthy partner can smoothen coordination, reduce opportunism concerns, and enhance cooperation efficiency (e.g., Cuypers, Hennart, Silverman, & Ertug, 2021; Dyer & Chu, 2003; Zaheer, McEvily, & Perrone, 1998). Second, the focal firm may experience spillover effects from the partner, as the external stakeholders' perceptions of the focal firm are susceptible to influence by its partner's behavior and character (Boone & Ivanov, 2012; Bourdeau, Cronin Jr, & Voorhees, 2007; Gulati & Higgins, 2003; Stuart, Hoang, & Hybels, 1999).

One of the key challenges firms face in forming alliances is that they typically have imperfect information regarding a potential partner's quality, behavior and character (Ozmel, Reuer, & Gulati, 2013; Pollock & Gulati, 2007; Reuer & Ragozzino, 2014). Thus, firms seeking to form alliances are motivated to look for information cues or signals that help reduce such information asymmetries (Connelly, Certo, Ireland, & Reutzel, 2011; Spence, 1973, 2002). Extant work in the alliance literature has identified a variety of characteristics of potential partners that may function as effective signals, including patent activities (Caner, Bruyaka, & Prescott, 2018), the presence of scientists (Luo, Koput, & Powell, 2009; Stern, Dukerich, & Zajac, 2014), corporate and technological diversification (Krammer, 2016), board interlocks (Ni Sullivan & Tang, 2013), network structure (Ozmel et al., 2013), public funding (Bianchi, Murtinu, & Scalera, 2019), initial public offerings (Pollock & Gulati, 2007) and the prominence of its affiliation (Lee, Pollock, & Jin, 2011; Pollock & Gulati, 2007; Reuer & Ragozzino, 2014). A closer look at this literature reveals

that the focus has mainly been on signals with positive valence. Negative signals, in contrast, have been typically implied or explicitly considered as the flip side of positive signals—that is, a lack of positive information on a firm’s quality would send signals of poor quality of a potential partner to the focal firm (e.g., Folta & Janney, 2004; Sanders & Boivie, 2004; Stern et al., 2014).

A limited but growing body of work in the broader management literature has started to consider positive and negative signals as different concepts that merit separate consideration (Connelly et al., 2011), not solely as opposing ends of a single continuum (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Kahneman & Tversky, 1979; Rozin & Royzman, 2001). These works suggest that positive and negative signals receive distinct attention, interpretations and could lead to different outcomes. Hence, it is important to further develop an in-depth understanding of how positive and negative signals conceptually differ and how they might have varying impacts on important strategic choices such as alliance formation.

This study aims to advance this line of inquiry by examining one aspect of potential alliance partners that has substantial information value – their corporate social activities. The role of corporate social activities is increasingly recognized in the context of strategic alliances by scholars (e.g., Madsen & Rodgers, 2015; Norheim-Hansen, 2015, 2018) and practitioners alike. Building on a rapidly growing body of work that has explored the signaling role of corporate social activities (e.g., Flammer, 2018; Godfrey, Merrill, & Hansen, 2009; Jones, Willness, & Madey, 2014; Su, Peng, Tan, & Cheung, 2016), we examine their unique signaling effects in the context of alliance formation. Furthermore and of particular importance for our purpose, corporate social activities can be decomposed into two distinct concepts, namely corporate social responsibility (CSR) and corporate social irresponsibility (CSI) (Campbell, 2007; Shea & Hawn, 2019; Strike, Gao, &

Bansal, 2006; Tang, Qian, Chen, & Shen, 2015), which offer us an opportunity to discern and contrast the distinct impacts of positive and negative signals on alliance formation.

Extending the signaling literature and work on CSR and CSI, we argue that, conceptually, both partner CSR and CSI may affect alliance formation through the same two signaling mechanisms. The first is what we term as the *trust mechanism* in our theoretical framework because partner CSR and CSI signal the moral character of a potential partner, which will be used by the focal firm to infer the partner's trustworthiness. The second mechanism we refer to as the *spillover mechanism* because partner CSR and CSI signal a potential partner's moral character to a firm's external stakeholders. This signal can then provide information to the focal firm on whether stakeholders' assessment might spill over from the potential partner when an alliance is formed. Jointly considering these two theoretically distinct mechanisms, we derive two baseline predictions: a positive association between partner CSR and the likelihood of alliance formation, and a negative association for partner CSI. More importantly, while both signaling mechanisms may influence the effects of partner CSR and CSI on alliance formation, we posit that the dominant mechanism for CSR differs from that for CSI. Specifically, we will argue that the two mechanisms speak to conceptually distinct types of uncertainty partners encounter in alliance formation, and the valence of the signal—that is, whether it is CSR or CSI, determines the specific mechanism that the firm is likely to focus on in addressing issues arising from uncertainty.

To further distinguish and empirically verify the effects of partner CSR and CSI driven by different dominant mechanisms, we introduce two moderators – *proximity* (i.e., whether the alliance partners are in the *same location*) and *media coverage* (i.e., the extent of potential partners' media exposure). These contingency factors are selected because they are expected to have opposing moderating effects on these two signaling mechanisms, allowing us to establish the

prevalence of different dominant mechanisms underlying the role of partner CSR and CSI. We test our predictions using a sample of alliances formed by U.S. listed high-tech firms between 1995 and 2016, and we consistently find evidence in line with our predictions.

Our study contributes to two streams of research. First, we respond to Connelly and his coauthors' (2011) call for more theoretical and empirical work on the impact of negative signals and how they conceptually differ from positive signals. By contrasting the effects of CSR and CSI and by identifying that different mechanisms dominate for partner CSR and CSI, we contribute to the signaling literature by adding more nuances to how positive and negative signals conceptually differ and how this influences critical strategic decisions such as alliance formation. Second, by integrating the CSR literature into alliance work, we examine a novel antecedent – partners' social activities – of alliance formation. In addition, the distinction between partner CSR and CSI further advances the alliance formation literature by showing whether and how two key considerations of partner selection—namely, (1) a potential partner's trustworthiness and (2) potential spillovers, are contingent on the valence of the information the potential partner conveys.

THEORY AND HYPOTHESES

Positive and Negative Signals in Alliance Formation

Firms looking to form alliances face considerable information asymmetry regarding their potential partners. Accordingly, alliance scholars have examined various signals that provide information about potential partners' unobserved quality and character, and how these signals influence the formation of alliances (e.g., Bianchi et al., 2019; Krammer, 2016; Luo et al., 2009; Ozmel et al., 2013; Pollock & Gulati, 2007). For example, Krammer (2016) looks at the role of corporate and technological diversification in signaling firms' superior capabilities and resources, and how these signals facilitate the formation of technological alliances. Luo, Koput, and Powell

(2009) find that a firm with a greater number of scientists is more likely to form alliances because having more scientific staff serves as a credible signal of its competence.

Although extant studies have examined the critical roles various signals play in alliance formation, they have primarily focused on positive signals but generally overlooked the unique effects of negative signals (e.g., Ozmel et al., 2013; Pollock & Gulati, 2007; Reuer & Ragozzino, 2014). Moreover, even when negative signals are considered, they are often thought of as having effects that are simply opposite to those of positive signals (e.g., Folta & Janney, 2004; Sanders & Boivie, 2004; Stern et al., 2014). However, some work has started to highlight that negative and positive signals are conceptually distinct (Connelly et al., 2011), and that they should be empirically examined as separate constructs (Fischer & Reuber, 2007; Tetlock, Saar-Tsechansky, & Macskassy, 2008).

In line with this view, related work in psychology (e.g., Baumeister et al., 2001; Rozin & Royzman, 2001; Weiner, 1985) and economics (e.g., Kahneman & Tversky, 1979) has also suggested that a signal with negative information is not merely the opposite of a signal with corresponding positive information for several reasons: First, negative information is remembered and recalled more by individuals than positive information because it tends to be more uncommon or unexpected and is therefore more likely to result in salient, consequential, and long-lasting outcomes (e.g., Baumeister et al., 2001; Kahneman & Tversky, 1979). For the same reason, a negative signal is more effective at attracting public attention (e.g., Rozin & Royzman, 2001). Second, a negative signal is more likely to elicit thorough information processing and intensified attributional thinking because it is typically linked with events with adverse or unpleasant consequences (Rozin & Royzman, 2001; Weiner, 1985). Thus, the valence of signals often offers recipient firms different reference points to evaluate the significance or urgency of the issues they

face and, consequently, motivates them to take different actions (e.g., Chattopadhyay, Glick, & Huber, 2001; Dutton & Jackson, 1987).

In sum, existing work highlights the importance of treating negative and positive signals as conceptually distinct rather than mere opposites. Expanding on this, we examine how CSR and CSI exhibit varying dominant signaling effects in the context of alliance formation. Previous work has established the significance of a firm's social activities in signaling (e.g., Flammer, 2018; Godfrey et al., 2009; Jones et al., 2014; Su et al., 2016). Furthermore, social activities can be categorized into CSR and CSI activities, making it a particularly suitable context to compare the effects of positive and negative signals.

CSR as a Positive Signal and CSI as a Negative Signal

Building on the works of Shea and Hawn (2019) and Campbell (2007), we define CSR as engaging in voluntary corporate actions that have a positive impact on stakeholders (e.g., customers, employees, investors, and local communities), and that are in line with the going social expectations so that they are considered moral. In contrast, we define CSI as engaging in corporate actions that cause harm to stakeholders (without appropriate actions to rectify this harm), and that are considered immoral as they fall below the threshold of what is socially expected.

A growing body of research highlights that both CSR and CSI convey information about a firm's moral character (e.g., Flammer, 2018; Godfrey et al., 2009; Hawn, 2021).¹ CSR is a reliable

¹ While recognizing the close relationship between CSR and the concept of reputation, we refrain from conceptualizing CSR/CSI as reputation for three reasons. First, previous studies typically view CSR/CSI as an antecedent of reputation that provides information to audiences that allows for an attribute-specific assessment (Ertug & Castellucci, 2013). This view is actually consistent with our theory: reputation may act as an intermediate/latent construct between CSR/CSI and the outcome we study, but it is still necessary to rely on CSR/CSI as a signal to establish the link with the outcome. Second, reputation could potentially act as an intermediate construct for both the spillover and trust mechanisms. Namely, firm reputation shaped by CSR/CSI could affect both the spillover effects and perceived trust in an alliance. This undermines the objective of our study in distinguishing these two mechanisms. Third, some studies argue that CSR/CSI and reputation are distinct constructs, suggesting that CSR can influence strategic choices independently of reputation (e.g., Flammer, 2018). Since there is no consensus in the literature and invoking reputation does not facilitate contrasting our proposed mechanisms, we focus solely on the signaling aspect of CSR and CSI.

signal of a firm's unobserved positive moral character (Godfrey et al., 2009) because it generally requires costly resource commitments (Delmas & Toffel, 2008; Durand, Hawn, & Ioannou, 2019) and takes time for its benefits to materialize (Barnett & Salomon, 2012) (for a review, see Zerbini, 2017). Similarly, CSI serves as a signal of a firm's negative moral character. For example, prior studies have examined the roles of various irresponsible firm behaviors, such as financial restatements, unfavorable information concealments, and accounting malpractice (e.g., Connelly, Ketchen, Gangloff, & Shook, 2016; Marcel & Cowen, 2014; Paruchuri, Han, & Prakash, 2021), in signaling a firm's negative moral character and ill intentions.

In line with the broader signaling literature, several studies have started to point to some different signaling effects of CSR and CSI. For example, Kölbel and his coauthors (2017) find that stakeholders' attention is biased towards the negative information that CSI provides at the expense of the positive information conveyed by CSR. CSI information is also more likely to evoke attributional thinking and intensive causal search among stakeholders, which results in more extreme evaluations and responses to the information provided by CSI than to that provided by CSR (Lange & Washburn, 2012). Further highlighting differences between CSR and CSI, Hawn (2021) finds that CSI news is associated with worsening cross-border acquisition outcomes while CSR news has no significant positive impact.

This body of work has improved our understanding of the different signaling effects of CSR and CSI. However, it still largely considers CSR and CSI as opposites, and that they only differ in terms of the strength of their signaling effects. Going beyond this body of work, we will posit that while both CSR and CSI work through the same signaling mechanisms, they differ in terms of the dominant mechanism.

Two Signaling Roles of Partner CSR and CSI

It is important to first highlight that, as a basis of our theoretical framework, both partner CSR and CSI might affect alliance formation through two signaling mechanisms: one we refer to as the *trust mechanism* and the other as the *spillover mechanism*. In the sections below, we will first outline these two mechanisms and formulate our baseline predictions (Hypotheses 1 and 2) accordingly. We then identify two contingency factors, namely, proximity and media coverage, that help us tease out the effects of the two mechanisms and thereby establish the key argument that partner CSR and CSI influence alliance formation through theoretically distinct dominant mechanisms.

Trust mechanism. Firms looking to form an alliance often face information asymmetry regarding whether a potential partner might behave opportunistically or in a trustworthy manner (e.g., Diestre & Rajagopalan, 2012; Reuer & Lahiri, 2014; Ryu et al., 2020). Specifically, while a potential partner knows whether it is likely to behave in a trustworthy manner in an alliance, the focal firm initiating the alliance faces substantial uncertainty about the future behavior of the potential partner (i.e. behavioral uncertainty). Both CSR and CSI of a potential partner can help alleviate this issue by serving as signals of a potential partner's positive or negative moral character (Godfrey, 2005; Godfrey et al., 2009), which we refer to as the *trust mechanism*.

We begin with the role of partner CSR. Instead of solely focusing on profit maximization, a high-CSR firm is perceived as caring about the welfare of its stakeholders and broader society (Godfrey et al., 2009; Luo & Kaul, 2019; McWilliams & Siegel, 2001). Therefore, by observing a potential partner's CSR, the focal firm might infer that the potential partner has a positive moral character (Godfrey et al., 2009; Jones et al., 2014; Norheim-Hansen, 2018; Shea & Hawn, 2019) and thus would act in a trustworthy and responsible way when an alliance is formed. Given that collaborating with a trustworthy partner could result in a number of positive alliance outcomes,

ranging from lower transaction costs to more cooperative behaviors (Dyer & Chu, 2003; Zaheer et al., 1998), the *trust mechanism* suggests that the CSR of a potential partner will increase the likelihood of alliance formation.

In contrast, a potential partner's CSI provides information about its negative moral character and lack of trustworthiness to a focal firm that seeks to form an alliance. In the case of partner CSI, the focal firm might be particularly concerned about the considerable risks (e.g., knowledge appropriation risks) and costs (e.g., the cost to deter opportunistic behaviors) associated with collaborating with a partner that might behave opportunistically (Das & Teng, 1998; Parkhe, 1993). Thus, the *trust mechanism* suggests that the CSI of a potential partner will decrease the likelihood of alliance formation.

Spillover mechanism. Besides the consideration of partner trustworthiness, a focal firm also contends with uncertainties about potential spillovers from the partner, which can also be assessed based on the partner's CSR and CSI. We refer to this as the *spillover mechanism*. In addition to signaling a partner's moral character to the focal firm, CSR and CSI may also convey such information to the public and the focal firm's external stakeholders, who further use this information to develop their perceptions of the focal firm, resulting in spillover potential from the alliance partner to the focal firm.

In the case of CSR, we expect a positive spillover effect. CSR signals a potential partner's positive moral character to the focal firm's stakeholders, further leading to stakeholders' positive evaluation of the focal firm's moral character through affiliation (DesJardine, Grewal, & Viswanathan, 2022; Madsen & Rodgers, 2015; Norheim-Hansen, 2018). Accordingly, based on the *spillover mechanism*, we expect that partner CSR is positively associated with the likelihood of forming an alliance.

Partner CSI, on the contrary, poses substantial negative spillover risks to a focal firm. Previous studies have shown that a firm's deviant behaviors are likely to adversely affect stakeholders' perceptions of its partners (Boone & Ivanov, 2012; Bourdeau et al., 2007; Bruyaka, Philippe, & Castañer, 2018). For example, firms may experience negative market reactions when their partners have filed for bankruptcy (Boone & Ivanov, 2012). Similarly, such a spillover effect can occur in the case of partner CSI, which provides a negative signal to stakeholders about the partner's moral character. In evaluating a potential alliance partner, a focal firm might be concerned that stakeholders' negative perceptions of its partner could adversely affect stakeholders' perceptions of the focal firm through allying with the partner. Hence, the focal firm's concern about potential negative spillovers from an alliance partner is likely to be heightened when partner CSI negatively signals the partner's moral character to stakeholders. As such, we expect that partner CSI will reduce the likelihood of alliance formation through the *spillover mechanism* by heightening a focal firm's concern about negative spillovers.

In sum, both the *trust mechanism* and *spillover mechanism* suggest a positive (negative) relationship between partner CSR (CSI) and the likelihood of alliance formation. We would like to emphasize that while we so far theorized from the focal firm perspective, the bilateral nature of alliances, where both firms must decide whether to enter into a partnership, along with the fact that partners are theoretically indistinguishable within an alliance, allows our theory to apply to either partner with a dyad. In line with existing work (e.g., Ertug, Cuypers, Dow, & Edman, 2023; Gimeno, 2004; Wang & Zajac, 2007), we therefore state our prediction in terms of the combined effect.² Accordingly, we predict the following baseline hypotheses:

² As we will elaborate in the empirics, the partners involved in the alliances we study are indistinguishable within their respective alliances, i.e., there is no theoretical or empirical meaningful way to order them within a given alliance. Thus, we expect that the theoretical mechanisms we propose are at play on either side of the dyad, and we conduct the

Hypothesis 1. The partners' CSR is positively related to the likelihood of alliance formation between them.

Hypothesis 2. The partners' CSI is negatively related to the likelihood of alliance formation between them.

Unpacking the Different Signaling Roles of Partner CSR and CSI

While CSR and CSI might affect alliance formation through both trust and spillover signaling mechanisms, we expect that their dominance varies with the valence of the signals (i.e., CSR or CSI) because these two mechanisms speak to two conceptually different types of uncertainties.

The *spillover mechanism* is primarily associated with uncertainty arising from challenges that are largely exogenous to the firm. The magnitude of spillovers is influenced by external stakeholders' perceptions and sentiments, which are generally beyond the direct influence of firms. Previous research underscores that in the face of exogenous uncertainty, firms have limited proactive options to achieve positive outcomes. Consequently, their focus tends to be on minimizing exposure to downside potential (e.g., Cuypers & Martin, 2010; Krishnan, Geyskens, & Steenkamp, 2016). In contrast, the uncertainty associated with the *trust mechanism* mainly lies in predicting the alliance outcome resulting from the partner's opportunistic or trustworthy behavior. Such behavioral uncertainty is typically considered endogenous as it is predominantly within firms' influence. A substantial body of literature has emphasized that firms can effectively mitigate such behavioral uncertainty in an alliance through governance and the establishment of behavioral incentives (e.g., Cuypers et al., 2021; Krishnan, Martin, & Noorderhaven, 2006). Therefore, the

analyses at the dyadic level, consistent with recommendations in the literature (e.g., Kenny et al., 2020). To ensure alignment between theory and empirics, the mechanisms at play on both sides of the dyad are typically aggregated to reflect the combined effect of both partners (e.g., Ertug et al., 2023; Gimeno, 2004; Wang & Zajac, 2007). Accordingly, we have formulated our prediction at the dyadic level rather than at the individual partner level.

emphasis on minimizing exposure to downside risks aligns with exogenous uncertainty, making a negative signal especially pertinent in the spillover mechanism. Conversely, the focus on realizing upside potential corresponds to endogenous uncertainty, rendering a positive signal more relevant in the trust mechanism.

Accordingly, in the case of partner CSI, which holds greater relevance for downside risk that aligns with exogenous uncertainty, we propose that firms assign higher importance to the potential negative spillovers than to the partner's perceived lack of trustworthiness. In this scenario, firms are inclined to primarily concentrate on minimizing vulnerability to negative spillovers by avoiding alliances with partners exhibiting high CSI. Conversely, given the capacity of firms to mitigate downsides arising from behavioral uncertainty through governance mechanisms, negative signals become comparatively less pertinent for assessing partner trustworthiness in alliance formation. Thus, for CSI, we anticipate the dominance of the spillover mechanism over the trust mechanism in influencing alliance formation decisions.

For CSR, where a positive signal is more pertinent to endogenous rather than exogenous uncertainty, we anticipate a contrasting outcome. Given their limited influence on spillover outcomes, firms will be, relatively speaking, less focused on potential upsides arising from exogenous uncertainty. In addition, positive spillover, by its nature, is less pronounced than negative spillover since positive signals are less effective at attracting public attention and fostering attributional thinking among audiences (Baumeister et al., 2001; Rozin & Royzman, 2001). In contrast, firms' greater influence over the endogenous uncertainty linked to the trust mechanism will lead firms to redirect their attention toward the alliance's upside potential, leveraging partner trustworthiness to their advantage (e.g., Cuypers & Martin, 2010; Krishnan et al., 2016). Therefore,

in the case of CSR, we expect the trust mechanism to dominate over the spillover mechanism in shaping alliance formation decisions.

Although we have proposed in Hypotheses 1 and 2 that partner CSR as a positive signal and CSI as a negative signal both have the potential to affect the likelihood of alliance formation in the same direction, we argue here that one mechanism will dominate for partner CSR (the *trust mechanism*) and another for partner CSI (the *spillover mechanism*). Since testing Hypotheses 1 and 2 does not allow us to distinguish the two mechanisms (i.e., they might potentially both be at play), we carefully select two contingency factors – proximity between alliance partners (i.e., same location) and media coverage (of potential partners) – that are expected to moderate the two different signaling mechanisms but in opposite directions. This allows us to theoretically establish under which contingencies the proposed mechanisms dominate and empirically test if this indeed is the case. Before we proceed to these moderating predictions, it is important to note that we will develop these hypotheses based on the mechanisms we expect to be dominant. If the alternative mechanism was at work, the predictions would go in opposite directions. Thus, empirical support for these hypotheses would provide support for the proposed mechanisms. We do not formally present the arguments based on the alternative mechanism being dominant to avoid the unnecessary use of competing hypotheses. Instead, at the end of our hypotheses, we briefly touch upon what the predictions would look like if the other mechanism was dominant to further contrast our predictions.

The Moderating Effect of Proximity Between Potential Alliance Partners

We first examine the role of proximity between the focal firm and a potential partner. In this study, we focus on geographical proximity, which describes whether or not a potential partner is located in the same geographical area as the focal firm (i.e., *same location*) (Rosenkopf &

Almeida, 2003; Ryu, McCann, & Reuer, 2018). Prior studies have highlighted that geographical proximity is theoretically linked to the availability of information on opportunistic behavior (e.g., Ragozzino & Reuer, 2011; Reuer & Lahiri, 2014) and the potential of spillovers (e.g., Barnett & King, 2008; Diestre & Rajagopalan, 2014; Paruchuri & Misangyi, 2015). We next proceed by discussing how *proximity* moderates the trust and spillover mechanisms in opposite directions:

Proximity between potential alliance partners and the trust mechanism. We proposed earlier that the *trust mechanism* will be the dominant mechanism that underlies Hypothesis 1. While a firm generally has incomplete information regarding a potential partner's trustworthiness, such information asymmetry is less extensive when the focal firm is able to acquire information about the partner from other sources (Ertug, Cuypers, Noorderhaven, & Bensaou, 2013; Reuer & Lahiri, 2014). As we will elaborate below, existing work proposes that a focal firm is more likely to have such information when the firm is in close proximity to its potential alliance partner (Ragozzino & Reuer, 2011; Reuer & Lahiri, 2014). As a result, we expect in such instances that CSR as a signal of a potential partner's moral character and trustworthiness will be less salient in the focal firm's decision-making.

In particular, firms face less information asymmetry regarding each other when they are from the same location. By conforming to similar regional policies, regulations, or social pressures, co-located firms often exhibit a set of shared features and practices (Diestre & Rajagopalan, 2014; Stuart & Sorenson, 2003). Moreover, firms in the same location are more likely to learn about potential partners through community organizations, local activities, employee mobility, or common stakeholders (Diestre & Rajagopalan, 2014; Husted, Jamali, & Saffar, 2016) than firms that are not co-located. Hence, co-location provides the firm with more fine-grained information

about a potential partner, which will put it in a better position to evaluate the trustworthiness of its potential partners (Ragozzino & Reuer, 2011; Reuer & Lahiri, 2014).

In sum, compared to a firm that is not proximate to a potential partner, a firm from the same location as a potential partner is likely to face less information asymmetry regarding whether the partner might behave in a trustworthy way. In this case, the firm would have more alternative information on the potential partner and rely less on CSR as signals of moral character and trustworthiness in making alliance formation decisions. Accordingly, based on the *trust mechanism* being dominant for partner CSR, we predict:³

Hypothesis 3a. The positive relationship between the partners' CSR and the likelihood of alliance formation becomes weaker when partners are from the same location.

Proximity between potential alliance partners and the spillover mechanism. We argued above that the *spillover mechanism* will be the dominant mechanism that underlies Hypothesis 2 (i.e., a negative relationship between partner CSI and the likelihood of alliance formation). While there is potential for spillovers between most partners that form an alliance, the spillover effect is expected to be stronger between more proximate alliance partners (e.g., Bruyaka et al., 2018; Diestre & Rajagopalan, 2014). Prior studies have suggested that stakeholders often evaluate firms based on certain categorical features and that firms with greater proximity are perceived to exhibit more similar features and behaviors (Barnett & King, 2008; Paruchuri & Misangyi, 2015).

Specifically, location is a highly visible factor that is commonly used in categorizing firms into related groups. With exposure to similar institutional environments and local cultures, firms that are co-located have more similar social practices and values (DiMaggio & Powell, 1983;

³ We note that if the spillover mechanism rather than the trust mechanism would be dominant for CSR, we would expect the baseline relationship between CSR and alliance formation to become stronger rather than weaker. We will clarify in our arguments leading up to Hypothesis 3b (and in the additional discussion after Hypothesis 4b) why that would be the case.

Lieberman & Asaba, 2006). In line with this argument, Marquis et al. (2007) put forward the concept of community isomorphism, suggesting that a firm's social practices will resemble those of other firms in the same geographic community. Accordingly, stakeholders are likely to perceive co-located partners as more similar and thereby extend negative evaluations of a partner to a co-located focal firm. The importance of location for spillovers has also been documented specifically in the context of CSI. For instance, Huang and Li (2009) find that after Anderson shredded its Enron-related documents, clients of the Big Five accounting firms located closer to Andersen's Houston office were penalized more by investors than those in more distant locations. Diestre and Rajagopalan (2014) also find that following a chemical accident at one firm, investors also penalize other firms using the same toxic chemical input, especially when they are geographically proximate to the focal firm.

In sum, compared to a firm that is not proximate to a potential partner, a firm that is co-located with a potential partner is more likely to experience negative spillovers from a potential partner. Accordingly, based on the *spillover mechanism* being dominant for CSI, we propose:

Hypothesis 3b. The negative relationship between the partners' CSI and the likelihood of alliance formation becomes stronger when partners are from the same location.

The Moderating Effect of Media Coverage

Media coverage (of potential partners) is another factor that helps us to distinguish the two different signaling mechanisms. Media is often described as a key external intermediary by disseminating information and helping stakeholders understand firm actions (Bednar, 2012; Graf-Vlachy, Oliver, Banfield, König, & Bundy, 2020; Zavyalova, Pfarrer, Reger, & Shapiro, 2012). It also has been shown to play an important role in facilitating spillovers (e.g., Naumovska & Zajac,

2022; Shi, Wajda, & Aguilera, 2022). We will discuss next how media coverage moderates the trust and spillover mechanisms in opposite directions.

Media coverage and the trust mechanism. As argued earlier, the dominant mechanism underlying partner CSR's positive effect on alliance formation is the *trust mechanism*, i.e., partner CSR reduces the focal firm's information asymmetry about the partner's moral character and trustworthiness. However, the media plays a similar role by disclosing the information about a potential partner, which helps the focal firm gain a more nuanced understanding of a potential partner's attributes and behaviors (Bednar, 2012; Graf-Vlachy et al., 2020). For instance, Graf-Vlachy et al. (2020:37) describe the media as "*the main legitimate source for reducing information asymmetries about a firm's action*". Previous studies have also highlighted the media's role in evaluating the appropriateness of firm practices and spotlighting any shortcomings that do not meet stakeholders' expectations (Desai, 2011, 2014; Zavyalova et al., 2012). By scrutinizing a potential partner's practices and behaviors, the media provides information that can serve as a basis for evaluating its moral character.

Accordingly, as media coverage of a potential partner increases, the focal firm learns more about the partner's moral character and opportunistic tendencies. This, in turn, reduces the firm's reliance on CSR as a key signal of the potential partner's trustworthiness. In support of this argument, Kulchina (2014) finds that media information can serve as a substitute for other sources of information in affecting the firm's location decisions. We thus predict:

Hypothesis 4a. The positive relationship between the partners' CSR and the likelihood of alliance formation becomes weaker when partners have greater media coverage.

Media coverage and the spillover mechanism. Our starting point again is that the spillover mechanism will be the dominant mechanism that underlies Hypothesis 2 in the case of partner CSI.

Building on work on spillovers, we expect media coverage to facilitate the spillover effect (e.g., Naumovska & Zajac, 2022; Shi et al., 2022) and thereby augment a focal firm's concerns about potential negative spillovers from its partner.

Specifically, the signaling literature emphasizes that a signal's effectiveness depends on audience attention (Barnett, 2014; Connelly et al., 2011). Firm visibility plays a crucial role in influencing stakeholders' attention. Previous studies have shown that misconduct by highly visible firms draws more attention from stakeholders, facilitating the generalization of the misconduct to other associated firms and resulting in a more substantial spillover effect. For instance, Paruchuri and Misangyi (2015) find that as a firm's size increases, investors are more likely to extend the firm's financial misconduct to its affiliated bystanders, as it is unlikely for investors to overlook a larger or more visible firm. Zhou and Wang (2020) also find that a parent firm's visibility is one critical precondition for negative spillover from the parent's CSI to its subsidiary.

Similarly, the extent to which external stakeholders draw associations between a partner's moral character and that of a focal firm also depends on the attention they pay to that partner (Shi et al., 2022). Through its dissemination of information about a partner firm to the public, media coverage enhances the partner's visibility and thus increases stakeholders' attention paid to the partner. Moreover, frequent media exposure renders the alliance relationship more transparent and visible to stakeholders, making it harder for a focal firm to disassociate from its partner and to avoid the potential negative spillover from the partner (Durand & Vergne, 2015). As such, media coverage will make stakeholders more attentive to the potential partner's CSI as well as its alliances. This would augment the potential of negative spillovers to the focal firms. Accordingly, we propose:

Hypothesis 4b. The negative relationship between the partners' CSI and the likelihood of alliance formation becomes stronger when partners have greater media coverage.

We have developed the above moderating hypotheses based on the premise that the positive relationship between partner CSR and alliance formation is primarily driven by the *trust mechanism*, whereas the negative relationship between partner CSI and alliance formation is primarily driven by the *spillover mechanism*. As highlighted in the logic of our moderating predictions, we have carefully selected contingency factors that moderate these two alternative mechanisms in opposite directions. More specifically, if we would instead assume that the positive relationship between partner CSR and alliance formation was driven by the *spillover mechanism*, we would expect that for each of the two contingency factors (proximity and media coverage), the positive relationship between the partners' CSR and alliance formation to be stronger, which would lead to opposite predictions than those we outline in hypotheses 3a and 4a. The reason for this is that partner firms under these conditions are more likely to be perceived as similar or draw stakeholders' attention, which would increase the potential for spillovers. Similarly, if the negative relationship between partner CSI and alliance formation was instead driven by the *trust mechanism*, the negative relationship between partner CSI and alliance formation should become weaker in the presence of our two contingencies, which would lead to opposite predictions than those we outlined in hypotheses 3b and 4b. The reason for this is that the focal firm would have alternative sources of information to predict the partner's negative moral character and trustworthiness, which would decrease the firm's reliance on CSI as a signal.

Hence, given that our two contingency factors moderate our baseline mechanisms in opposite directions, we are able to empirically distinguish and identify the dominant mechanisms that underlie each of our baseline predictions.

METHODS

Sample

Testing our hypotheses requires a sample comprising both formed alliances and potential alliances that were at “risk” of being formed but did not materialize. We construct such a sample by consolidating information from various databases, including Refinitiv’s (formerly Thomson Financial) Securities Data Corporation (SDC) Platinum, COMPUSTAT, Kinder, Lydenberg, and Domini (KLD), and Dow Jones Factiva.

We construct our sample in several steps: *First*, we use Loughran and Ritter’s (2004) definition⁴ of high-tech industries to retrieve all U.S. listed high-tech firms accessible from COMPUSTAT. *Second*, we identify high-tech firms with available CSR and CSI records by matching the firms identified in the first step with the KLD database. KLD is an independent rating agency that has collected CSR data for a wide range of firms since 1991. By employing a group of sector-specific analysts, KLD provides reliable data on firms’ CSR and CSI (Fu, Tang, & Chen, 2020; Tang et al., 2015; Wang & Choi, 2013) and has been widely used by prior studies to investigate the impact of CSR and CSI (DesJardine, Marti, & Durand, 2021; Flammer, 2018; Godfrey et al., 2009). *Third*, we then obtain media coverage and other firm-level information from the Factiva and COMPUSTAT databases for these firms. *Fourth*, following common practice in the alliance formation literature (e.g., Rothaermel & Boeker, 2008; Ryu et al., 2020), we use the firms identified in the previous steps to construct a risk set of all possible dyads between any two firms in each year. *Finally*, we use the SDC database that offers detailed information on firms’ alliance activities (e.g., Schilling, 2009) to identify which alliances in the risk set were actually realized. In line with previous work (e.g., Ahuja, 2000; Ryu et al., 2020; Yayavaram, Srivastava, & Sarkar, 2018), we decompose multilateral alliances among partners into a set of bilateral alliances

⁴ Following the work of Loughran and Ritter (2004), we include firms from the following high-tech industries at the four-digit SIC level: 2833, 2834, 2835, 2836, 3571, 3572, 3575, 3577, 3578, 3661, 3663, 3669, 3674, 3812, 3823, 3825, 3826, 3827, 3829, 3841, 3845, 4812, 4813, 4899, 7370, 7371, 7372, 7373, 7374, 7375, 7377, 7378, and 7379.

between them. To ensure that the information provided by SDC was accurate, we verify the occurrence of announced alliances using the Factiva database.

After deleting observations with missing values, we have a final sample consisting of 1,564 unique firms spanning 28 high-tech industries between 1995 and 2016. Among these firms, there are 740 realized alliances and 2,672,756 non-realized ones. Within the set of realized alliances, 46 dyads exhibit recurrence, signifying instances where the same pair of partners (e.g., Microsoft and Intel, Compaq and Intel, and IBM and Sun Microsystem) formed subsequent alliances with each other.

Our focus on high-tech firms is particularly suitable to study the effects of partner CSR and CSI on alliance formation for several reasons. First, firms in high-tech industries are prone to using alliances (Rothaermel & Boeker, 2008; Ryu et al., 2018; Stuart, 2000), ensuring sufficient variance in our dependent variable, *alliance formation*. Second, there is considerable variation in the CSR and CSI activities by our sample firms, which closely mirrors the variation observed in the broader population of firms covered by the KLD database, as shown in previous studies (e.g., Shin, Lee, & Bansal, 2022; Tang et al., 2015).⁵ Third, firms in high-tech industries face considerable information asymmetry, making it a suitable context to study the role of signals (e.g., Ramchander, Schwebach, & Staking, 2012). Overall, a sample of high-tech firms taps into an important

⁵ This is not surprising since our sample covers firms from 28 different high-tech industries. To explore any potential differences, we compare the average CSR and CSI and their standard deviations of firms in our sample with those of the non-high-tech firms covered in the KLD database. This reveals that the average CSR of high-tech firms (average = 1.471) is slightly higher than that of non-high-tech firms (average = 1.312). Similarly, we see slightly more variance in high-tech firms' CSR (s.d. = 2.475) than in non-high-tech firms' CSR (s.d. = 2.095). Overall, these differences seem to be small, compared with those we see across studies that use similar measures but different samples and time periods (e.g., Shin et al., 2022; Tang et al., 2015). When comparing the average CSI scores (0.995 for high-tech firms and 1.254 for non-high-tech firms) and variance (s.d. = 1.135 for high-tech firms and 1.506 for non-high-tech firms), we see somewhat more pronounced differences. These differences seem to be primarily driven by high-tech firms engaging in less environmental CSI, which is reasonable since high-tech firms generally engage in fewer activities affecting the environment than firms in other industries (e.g., mining). Besides these small and expected differences, the social activities of firms in our sample are largely comparable with those of non-high-tech firms.

population with appropriate variance and generalizability.

Dependent variable: Alliance formation

We are theoretically interested in whether an alliance between two firms was realized or not. Accordingly, we operationalize our dependent variable, *alliance formation*, as a dichotomous variable that takes the value of 1 if an alliance is realized in a given year, and 0 otherwise. Following prior studies (Oxley, 1997; Reuer & Ragozzino, 2014; Sampson, 2007), we focus on contractual alliances and equity joint ventures, which involve substantive information asymmetry and interactions between partners (e.g., marketing, manufacturing, R&D, technology transfer). In contrast, unilateral alliances (e.g., simple cash-for-technology licensing deals) are excluded because they primarily involve the one-way transfer of technology in return for cash payment and present distinct collaborative issues than those we focus on in our study (Mowery, Oxley, & Silverman, 1996; Sampson, 2004).

Independent variables: Partners' CSR and CSI

Following existing work (Flammer, 2013; Kim, Kim, & Qian, 2018; Tang et al., 2015), we use the KLD database to construct our *partners' CSR* and *partners' CSI* measures. The KLD database provides binary scores for different dimensions of CSR strengths and concerns. We construct the measures using five specific dimensions in the database: community, diversity, employee relations, environment, and product.⁶ Specifically, we operationalize *CSR* as the sum of the standardized strength scores on these five dimensions and *CSI* as the sum of the standardized concern scores on the same dimensions. As we will detail below, we further check the robustness of our findings using measures of CSR and CSI derived from the Refinitiv's Asset4 database and the RepRisk database.

⁶ Our focus on these five dimensions is in line with both the work examining CSR and CSI in general (e.g., Fu et al., 2020; Tang et al., 2015) and that examining them in the specific high-tech context (e.g., Kim et al., 2018).

As our main predictions rely on partner-level mechanisms, common wisdom suggests that employing partner-level measures empirically would be the most appropriate approach. However, challenges arise when the two partners are indistinguishable. In such instances, where the theory or data does not allow for a meaningful identification of a focal firm versus a partner firm, adopting a partner-level approach becomes problematic. This approach would necessitate a (random) assignment of the partners by the researcher, a method fraught with issues as it can lead to inaccurate or even biased results, is prone to manipulation, and renders replication by other scholars difficult unless they can precisely replicate the same assignment of partners, a highly unlikely task.⁷ As such, in the management literature, particularly in the alliance formation studies, a dyad-level approach is commonly employed when partners are deemed “indistinguishable”, even *when* the theorization is at the firm- or partner-level (e.g., Gimeno, 2004; Stuart, 1998; Zhelyazkov & Gulati, 2016). Apart from management, the use of a dyad-level approach for firm- or partner-level theorization is also prevalent in other fields such as Psychology, Economics and Sociology (e.g., Baier & Bergstrand, 2001; Kenny, Kashy, & Cook, 2020; Rose, 2004).

⁷ David Kenny and his colleagues (Kenny, Kashy, & Cook, 2020: 6) have eloquently summarized some of the key challenges with using partner-level measures when the partners are indistinguishable in their influential review of methodological and data-analytic approaches to dyadic data (emphasis ours): “*One important question in dyadic research and data analysis is whether or not the two dyad members can be distinguished from one another by some variable. In heterosexual dating relationships, dyad members are distinguishable because of their gender: Each couple has one man and one woman. In sibling dyads, the two siblings can be distinguished by birth order. In both of these examples, a systematic ordering of the scores from the two dyad members can be developed based on the variable that distinguishes them. However, there are many instances in which there is no such natural distinction. Same-sex friendship pairs homosexual romantic partners, and identical twins are all examples of dyads in which the members are typically indistinguishable. If dyad members are indistinguishable, then there is no systematic or meaningful way to order the two scores. Thus, by distinguishability, we mean the following: Dyad members are considered distinguishable if there is a meaningful factor that can be used to order the two persons. Distinguishability is critical to a discussion of quantitative methods for relationship data because the data-analytic techniques appropriate for distinguishable dyads may not be appropriate for indistinguishable dyads. We shall see that the statistical analysis of data from dyad members who are distinguishable is relatively easy. For this reason, researchers sometimes create a variable that can be used to distinguish dyad members. If such a variable is theoretically and empirically meaningful, this approach is not problematic. However, **if the distinguishing variable is not meaningful** (e.g., the person who is in the front of the data storage folder is assigned to be “X” and the person who is in the back of the folder is “Y”), **this practice engenders an arbitrary component in the data, and it should be avoided.**”*

It is important to highlight that these studies share commonalities, including (a) the examination of indistinguishable partners/members, (b) theorization at the partner-/member-level, and (c) the use of dyad-level measures to test their predictions. This approach is widely regarded as suitable when dealing with indistinguishable partners, as dyadic measures enable the capturing of hypothesized partner-level effects. To further validate the reliability of this approach, we will empirically illustrate it in the robustness section. In this section, we will utilize an alternative approach known as the double-entry approach, which uses partner-level measures and is deemed appropriate in situations with indistinguishable members. When comparing the double-entry approach with the dyadic approach used in our main analyses, we find that the two approaches yield identical results.

Given that the partners in our dyads are indistinguishable, we follow convention in the literature and operationalize our CSR measures at the dyadic level. This is accomplished by summing both partners' CSR scores, and we label this variable as *partners' CSR*. Similarly, we construct a dyad-level CSI measure, labeled *partners' CSI*, by summing both partners' CSI scores. As mentioned above, we will demonstrate in the robustness checks section that we obtain identical results using the double-entry approach, which employs partner-level measures.

Moderating variables

Proximity between potential alliance partners. In Hypotheses 3a and 3b, we examine how the proximity between the focal firm and the potential partner moderates our baseline predictions. In particular, we focus on location proximity, which pertains to whether the focal firm and the potential partner are from the *same location*. To determine whether two firms are in the same location, we use core-based statistical areas (CBSAs), which have been frequently used as the unit of analysis in studies on agglomeration (e.g., McCann, Reuer, & Lahiri, 2016), local communities

(e.g., Lewis & Carlos, 2022; Marquis & Lee, 2013), and for calculating the distance between firms (e.g., Catalini, Fons-Rosen, & Gaulé, 2020; Singh & Marx, 2013). Specifically, we construct a dichotomous variable which is coded as 1 if the headquarters of two firms are located in the same CBSA, and 0 otherwise.

Partners' media coverage. In Hypotheses 4a and 4b, we examine how partners' media coverage moderates our baseline predictions. In line with prior work (e.g., Bednar, 2012; Flammer, 2013; Park & Rogan, 2019), we search the Factiva database for articles published in major news outlets (e.g., Financial Times, New York Times, USA Today, Washington Post, Wall Street Journal, Forbes, Fortune) and measure media coverage by counting the number of unique articles in which a firm is mentioned in a given year. We focus on major news outlets because they are more likely to draw stakeholders' attention and influence their perceptions and decisions. Similar to our *partners' CSR* and *CSI* measures, we create a dyad-level measure of *partners' media coverage* by summing the media coverage of two firms and dividing it by one hundred for ease of interpretation.

Control variables

In our estimations, we account for other factors that may influence the likelihood of alliance formation. We start by controlling for a number of firm-level factors. First, as larger firms are more likely to form alliances (e.g., Diestre & Rajagopalan, 2012; Reuer & Lahiri, 2014), we control for *firm size* using the natural logarithm of a firm's total sales. Second, a firm's performance might affect the resources it can deploy to form alliances (e.g., Ahuja, 2000; Ahuja, Polidoro, & Mitchell, 2009; Reuer & Ragozzino, 2014). We thus control for this using both an account-based measure, i.e., *return on assets (ROA)*, and a market-based measure, i.e., *Tobin's Q* (measured as the sum market value of the sum of a firm's common stock and the book value of its preferred stock and

debt, divided by its total assets). Third, we control for a firm's technological capability (Lavie, 2007; Lavie, Lunnan, & Truong, 2022) using *R&D intensity*. Fourth, to control for a firm's alliance capability (e.g., Hoang & Rothaermel, 2005) and its general propensity to form alliances, we include a variable labeled *general alliance experience*, which is a count measure that captures the number of alliances a firm has engaged in the past five years. Fifth, consistent with prior literature (e.g., Pfarrer, Pollock, & Rindova, 2010; Pollock, Lashley, Rindova, & Han, 2019), we control for *firm reputation* using a dichotomous variable which captures whether a firm was listed in Fortune's annual survey of "America's Most Admired Companies" in a given year. Since these factors are at the firm level and any potential dyad involves two firms, we include these control variables for both partners. Following convention in work that looks at partners that are indistinguishable in a dyad (e.g., Gimeno, 2004; Kenny et al., 2020; Stuart, 1998; Zhelyazkov & Gulati, 2016) and in line with how we operationalize our key variables of interest, we take the sum of the scores of both partners for each of our firm-level controls to construct a dyad-level measure.

We also control for a number of dyad-level factors. First, it is well-established that prior alliances between two firms affect the likelihood that they establish new alliances with each other (e.g., Gulati, Lavie, & Singh, 2009; Hoang & Rothaermel, 2005; Reuer & Lahiri, 2014). Therefore, we control for *partner-specific alliance experience* by measuring whether two partners in a potential dyad have collaborated in the past five years. Second, the propensity to form an alliance is likely to be affected by whether two firms are from the same industry. Therefore, we control for *same industry* by coding 1 if two firms have the same four-digit primary Standard Industrial Classification (SIC) code, and 0 otherwise. Third, relative differences in two firms' CSR and CSI might affect the likelihood that they form a tie. We thus control for *relative partner CSR* and *relative partner CSI* using the absolute value of the differences between, respectively, the two

firms' CSR and CSI. Lastly, we include year fixed effects to control for heterogeneity across years.

Estimation Approach

In our main analyses, we use logistic regression model with robust standard errors clustered at the dyadic level to account for potential heteroscedasticity (Hoang & Rothaermel, 2005; Joshi & Lahiri, 2015; Reuer & Lahiri, 2014). We demonstrate the robustness of our results using an alternative sample approach (e.g., double-entry estimation), different specifications of our variables of interest, and other estimation approaches (e.g., rare-event logistic models and two-stage Heckman Probit selection models).

RESULTS

In Table 1, we provide the descriptive statistics and the correlation matrix. The correlations among the independent variables do not point to serious problems with collinearity. To further mitigate potential collinearity concerns, we calculate the variance inflation factors (VIFs). The maximum VIF value across all presented models is 6.10, which is well below the accepted cutoff of 10 (Neter, Wasserman, & Kutner, 1985). Similarly, the maximum condition index is 18.34, which is also well below the accepted cutoff of 30 (Belsley, Kuh, & Welsch, 1980).

Insert Table 1 about here

Table 2 presents the results of the logistic regression. In Model 1, we only include the control variables, and we add the *partners' CSR* and *partners' CSI* variables in Model 2. In Models 3 and 4, we add two interaction terms with the *partners' CSR* variable separately, and we include both interaction terms together in Model 5. Similarly, we include the two interactions with the *partners'*

CSI variable separately in Models 6 and 7 and both of two interactions simultaneously in Model 8.⁸

Insert Table 2 about here

In Hypothesis 1, we predict a positive relationship between *partners' CSR* and *alliance formation*. In Model 2, we find that the coefficient of *partners' CSR* is significant and positive ($b = 0.035, p < 0.001$). Furthermore, in Hypothesis 2, we propose a negative relationship between *partners' CSI* and *alliance formation*. As expected, we find a negative and significant ($b = -0.059, p < 0.001$) relationship between *partners' CSI* and *alliance formation*. Hence, our findings are consistent with Hypotheses 1 and 2.

To assess the *economic magnitude* of these results, we calculate the extent to which a one standard deviation change in partners' CSR/CSI affects alliance formation. In particular, we find that a one standard deviation increase in *partners' CSR* from its mean corresponds to an increase in the likelihood of alliance formation by 20.71%, and that a one standard deviation increase in *partners' CSI* reduces the likelihood of alliance formation by 11.94%. To better understand the practical significance of these effects, we compare the magnitude of the effects of *partners' CSR* and *partners' CSI* with that of *partners' general alliance experience*, which is well-established as an important determinant of alliance formation in existing work (e.g., Diestre & Rajagopalan, 2012; Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004). We find that a one standard deviation increase in *partners' general alliance experience* from its mean increases the likelihood of alliance formation by 7.84%. Comparing this to the magnitude of the effect of *partners' CSR* and *CSI*, it further highlights that both the effects of *partners' CSR* and *partners' CSI* are economically

⁸ The results remain robust when we winsorize *all* continuous measures at the 1% and 99% levels or winsorize only variables with distributional properties that raise specific concerns.

meaningful.

In Hypothesis 3a, we posit that *same location* will weaken the positive baseline relationship between *partners' CSR* and *alliance formation* (i.e., we expect a negative interaction term), while in Hypothesis 3b, we posit that *same location* will strengthen the negative baseline relationship between *partners' CSI* and *alliance formation* (i.e., we expect a negative interaction term). In line with Hypothesis 3a, we find that the interaction term between *partners' CSR* and *same location* is negative and significant ($b = -0.032, p = 0.009$ in Model 3; $b = -0.035, p = 0.006$ in Model 5), which is consistent with Hypothesis 3a. In contrast and as expected in Hypothesis 3b, we find that the interaction term between *partners' CSI* and *same location* is negative and significant ($b = -0.059, p = 0.037$ in Model 6; $b = -0.065, p = 0.034$ in Model 8), which is consistent with Hypothesis 3b. Hence, our findings highlight that the baseline effect of *partners' CSR* is moderated in the opposite direction by *same location* than that of *partners' CSI*, which is in line with our prediction that the *trust mechanism* is the dominant driver of the effect of *partners' CSR* on alliance formation while the *spillover mechanism* is dominant for that of *partners' CSI*.

In Hypothesis 4a, we propose that *partners' media coverage* weakens the positive relationship between *partners' CSR* and *alliance formation* (i.e., we expect a negative interaction term), while in Hypothesis 4b, we predict that it strengthens the negative relationship between *partners' CSI* and *alliance formation* (i.e., we expect a negative interaction term). In line with Hypothesis 4a, we find that the interaction term between *partners' CSR* and *partners' media coverage* is negative and significant ($b = -0.004, p = 0.006$ in Model 4; $b = -0.005, p = 0.003$ in Model 5), which adds further evidence toward the notion that the *trust mechanism* dominates the role of *partners' CSR*. In contrast and as predicted in Hypothesis 4b, we observe that the interaction term between *partners' CSI* and *partners' media coverage* is negative and significant (b

= -0.011, $p < 0.001$ in Model 7; $b = -0.011, p < 0.001$ in Model 8), which is consistent with our earlier evidence that the *spillover mechanism* is dominant for *partners' CSI*.

We examine the economic impact of these moderating effects using the coefficients from Models 3 and 4 for the moderation of the effect of *partners' CSR*, and Models 6 and 7 for the moderation of the effect of *partners' CSI*. First, the positive relationship between partners' CSR and the likelihood of alliance formation weakens by 15.80% when firms are in the same location, and by 2.55% if partners' media coverage increases by one standard deviation from its mean. We plot these interaction effects in Figures 1a and 2a, which provide graphical support for Hypotheses 3a and 4a. Second, the negative association between partners' CSI and the likelihood of alliance formation strengthens by 16.14% when firms are in the same location and by 3.24% if partners' media coverage increases by one standard deviation from its mean. Again, we plot these interaction effects, and Figures 1b and 2b provide graphical support for Hypotheses 3b and 4b.

Insert Figures 1-2a through 1-2b about here

Robustness Checks and Additional Analyses

We conduct a series of tests to ensure the robustness of our findings. This comprehensive set of additional tests includes analyses that involve the exploration of the effects of various CSR and CSI mixes, alternative sampling approaches, specifications of our key measures, different estimation approaches, and variations in model specifications in terms of control variables. Space constraints keep us from providing an in-depth overview of all these tests; however, detailed results for these tests are available in Online Appendices A through H.

Exploration of the effects of various CSR and CSI mixes. To gain insights into the influence of differences in CSR or CSI between partners, we construct three sets of dummy

variables for CSR and CSI respectively. These dummy variables are generated using the average CSR/CSI levels as a benchmark, capturing scenarios where both partners have high levels of CSR/CSI (high – high: mix 1 [base case]), one partner has high CSR/CSI while the other has low (high – low: mix 2), and both partners have low levels (low – low: mix 3). The results remain supportive of our predictions after we control for these different between-partner CSR and CSI mixes, as summarized in Online Appendix A.⁹

In addition, the set of variables that capture between-partner differences in CSR and CSI yield some additional interesting insights. Namely, we find that the coefficients of the CSR mixes 2 (high-low) and CSR mixes 3 (low-low) dummy variables are consistently positive and significant across all models. This indicates that, while separately controlling for the partners' absolute levels of CSR, the likelihood of alliance formation is higher when one partner or both partners have low CSR compared to the scenario when both partners have high CSR. We speculate that two high-CSR firms might find it harder to reach an agreement given that they are less motivated to acquire specialized capabilities for CSR improvement (e.g., Berchicci, Dowell, & King, 2017). While this finding is interesting, it falls beyond the scope of our theoretical framework, and thus, we can only conjecture about the underlying reasons behind these observations. Therefore, we encourage future research to delve deeper into the potential impact associated with the disparities in partners' CSR/CSI.

An alternative sample sampling approach with a partner-level data structure. In our main analyses, we use a data structure in which each observation represents a potential dyad and use dyad-level measures, which are recommended in the situation when the partners in these dyads are

⁹ We note that a closer investigation into the models reveals that the inclusion of partner CSR and CSI mixes raises collinearity concerns. Both the maximum VIFs and the maximum condition index exceed the accepted cutoffs. As this might affect the precision of our estimates, we have opted not to include CSR/CSI mixes as controls in our main analyses.

indistinguishable (e.g., Gimeno, 2004; Kenny et al., 2020; Zhelyazkov & Gulati, 2016). In addition to this, an alternative method is the double-entry approach (e.g., Card, Selig, & Little, 2011; Kenny, Kashy, and Cook, 2020). We provide a detailed explanation of this approach in Online Appendix B. As expected, both approaches, the dyadic approach used in our main analyses and the double-entry approach, yield *identical* coefficients. This outcome aligns with Kenny et al.'s assertion (2020: 116) that: “*this second method [double entry approach] yields the same results as the method [dyadic approach] that we have detailed in this chapter.*” Not only does this underscore the robustness of our findings, but it also affirms that the dyadic approach in our main analyses effectively captures the hypothesized partner-level effects. For this reason, the approach in our main analyses is deemed appropriate for testing predictions that are theorized at the firm- or partner-level *when* the two partners in a dyad are “indistinguishable.” Furthermore, the approach in our main analyses is considered superior to the double-entry approach as it minimizes redundancy arising from having two identical coefficients (which can be cumbersome in testing subsequent contingency effects) and eliminates the need to weight each observation by 0.5 in the estimation.

An alternative sampling approach with a more restrictive risk set. In our main analyses, we construct a risk set consisting of *all* possible dyads between any two high-tech firms with CSR/CSI records in each year. Considering all possible dyads is a conservative approach to examine the formation of alliances as it helps minimize potential selection (e.g., Rothaermel & Boeker, 2008; Ryu et al., 2020). However, it leads to a sample with a large number of non-realized alliances (Joshi & Lahiri, 2015; Ryu et al., 2020), some of which *might* in practice not actually be at risk of being formed (e.g., because two partners’ industries are too unrelated). Therefore, we use an alternative risk set by employing a restrictive rule that should substantially reduce the number of dyads that were not actually at risk of being formed. Specifically, we only include dyads in our

sample between firms from industries (using four-/ three-/ two-digit SIC codes) for which there has been at least one realized alliance in our data. The results are robust and reported in the Online Appendix C.

Alternative measure specifications for partners' CSR and CSI. We test our prediction using an alternative CSR measure based on the Refinitiv's Asset4 database and an alternative CSI measure based on the RepRisk database (e.g., Hawn, 2021; Kölbel et al., 2017). As shown in Online Appendix D, the results are robust except for the interaction between partner CSI and media attention, which remains negative but insignificant at conventional levels. This might be due to a substantial reduction in sample size using the CSI measures based on the RepRisk database [a sample reduction of approximately 90%]. Overall, these findings jointly highlight that our conclusions are unlikely to be the product of idiosyncrasy or noise in the KLD data.

Alternative measure specifications for the moderating variables. We use an alternative measure for our *same location* measure, which is based on whether the headquarters of two firms in a specific dyad are in the same state (e.g., Rosenkopf & Almeida, 2003) rather than in the same CBSA. The results remain robust: the interaction term between *partners' CSR* and *same location* ($b = -0.027, p = 0.010$), and the interaction term between *partner CSI* and *same location* ($b = -0.061, p = 0.009$) are both negative and significant. In addition, we use an alternative form of proximity, whether two firms in a dyad are in the *same industry*, and also find that when partners are proximate in *industry*, the positive relationship between *partners' CSR* and alliance formation becomes weaker ($b = -0.030, p = 0.005$), and the negative relationship between *partners' CSI* and alliance formation becomes stronger ($b = -0.039, p = 0.097$).

An alternative estimation approach: Rare event logistic regression. While the absolute number of events is not very small, our dependent variable has a small percentage of events. We

thus use rare event logistic regression using the *relogit* command in Stata (King & Zeng, 2001), and find consistent results, which are reported in Online Appendix E.

An alternative estimation approach: Two-stage Heckman probit selection models. To address the potential sample selection bias, e.g., rating agencies' potential bias towards analyzing larger and better-known firms (Bettinazzi & Zollo, 2017; Shahzad & Sharfman, 2017), we adopt a two-stage Heckman Probit selection model (using the STATA *heckprob* command) and find results that are consistent with our main analyses (detailed in Online Appendix F).

Alternative model specifications in terms of control variables. Lastly, we perform two additional analyses: First, we run our models excluding the relative partner CSR and CSI variables to mitigate any potential concern that arises due to the correlation between partners' CSR and CSI, and relative partner CSR and CSI, not being trivial. This yielded robust results, which we present in Online Appendix G. Second, we re-run our models controlling for CSR decoupling to mitigate potential concerns about firms' actual engagement in meaningful CSR activities and potential limitations in capturing such behavior by the independent agency that collects the KLD data. As detailed in Online Appendix H, the results are consistent with our main analyses.

DISCUSSION

This study investigates the impact of a partner firm's CSR and CSI on alliance formation through two distinct signaling mechanisms, namely the trust and spillover mechanisms. Building on and extending the signaling literature, which posits conceptual differences between positive and negative signals, we propose that the dominant mechanism depends on the valence of the signal (CSR or CSI). Specifically, we argue that the positive impact of partner CSR on alliance formation is primarily driven by the *trust mechanism*, which signals a potential partner's moral character and trustworthiness. In contrast, the negative impact of partner CSI on alliance formation is primarily

driven by the *spillover mechanism*. In this case, partner CSI conveys negative information about the partner's moral character to stakeholders, shaping their evaluation of the focal firm and influencing the focal firm's assessment of potential negative spillovers. To further extend our theory and provide empirical evidence of the distinct dominant mechanisms underlying partner CSR and CSI, we carefully select two contingency factors – proximity (i.e., whether alliance partners are in the *same location*) and media coverage (of potential partners). These factors are expected to moderate the effects of the two signaling mechanisms in opposite directions. We find that both contingency factors weaken the positive relationship between partner CSR and alliance formation but strengthen the negative relationship between partner CSI and alliance formation. The findings support our arguments that while firm social activities function as signals affecting alliance formation through two mechanisms, the valence of the signal determines the dominant mechanism (i.e., the trust or spillover mechanism) through which alliance formation is affected.

Our study directly contributes to the signaling literature by providing a nuanced understanding of how negative and positive signals operate distinctly in the context of firm strategic decisions, particularly in alliance formation. Existing signaling research has either focused on the positive aspect of the signals (e.g., Luo et al., 2009; Ozmel et al., 2013; Reuer & Ragozzino, 2014) or assumed, either explicitly or implicitly, that an opposite signaling effect would prevail when signals turn negative (e.g., Folta & Janney, 2004; Sanders & Boivie, 2004; Stern et al., 2014). Building on the understanding that negative and positive signals are conceptually distinct and associated with divergent audience attention, interpretations, and feedback (Baumeister et al., 2001; Connelly, Li, Shi, & Lee, 2020; Kahneman & Tversky, 1973; Rozin & Royzman, 2001), this study advances extant research. Specifically, we theorize and demonstrate that while both partner CSR and CSI can influence alliance formation through the same two mechanisms, the underlying

dominating mechanisms differ. Partner CSR primarily signals positive information about the partner's moral character, shaping the focal firm's evaluation of partner trustworthiness. We find that considerations based on the *trust mechanism* dominate in the case of CSR. In contrast, in the case of CSI, the *spillover mechanism* is found to be dominant. CSI mainly signals a potential partner's moral character to a firm's external stakeholders, who could, through a negative spillover effect, form a negative assessment of the focal firm.

Our study also makes at least two important contributions to the alliance literature. First, we integrate insights from both the CSR and signaling literatures to highlight that CSR and CSI are important determinants of alliance formation. While existing alliance work has identified various signals that firms can rely on to assess potential partners (e.g., Luo et al., 2009; Ozmel et al., 2013; Reuer & Ragozzino, 2014), it has not systematically considered how a firm's social activities might serve as important signals affecting alliance formation.

Second, prior alliance research has recognized that concerns about partner trustworthiness (Dyer & Chu, 2003; Zaheer et al., 1998) and potential spillover effects (Boone & Ivanov, 2012; Bourdeau et al., 2007; Gulati & Higgins, 2003) affect alliance formation. Various signals have been identified as tools for firms to predict the extent of these concerns (e.g., Ozmel et al., 2013; Pollock & Gulati, 2007). However, there has been limited explicit exploration contrasting different types of signals based on their relevance to either partner trustworthiness or spillover concerns. By conceptually differentiating between positive (CSR) and negative (CSI) signals, we advance the alliance literature by showing that CSR, as a positive signal, primarily speaks to concerns about partner trustworthiness while CSI, as a negative signal, primarily addresses concerns about spillover between alliance partners.

Limitations and Future Research Directions

This study also has some limitations that open avenues for future research. First, we focus on high-tech industries in our empirical analyses, as firms in these industries face considerable information asymmetry and heavily rely on various signals for strategic decision-making (e.g., Pollock & Gulati, 2007; Ramchander et al., 2012; Reuer & Ragozzino, 2014). While our conceptualization and measures of CSR and CSI align with prior studies covering diverse industry contexts, and the CSR and CSI levels of our sample firms closely mirror those in non-high-tech industries (e.g., Shin et al., 2022; Tang et al., 2015), some differences may still exist between high-tech and non-high-tech firms. For example, high-tech firms tend to score lower on CSI, likely because their activities have less impact on the natural environment compared to firms in other industries (e.g., mining). Hence, future studies could examine alliance formation among firms in other industry contexts to further verify our key claims.

Second, we examine how partners' CSR or CSI in absolute terms function as signals, without explicitly considering the theoretical role of differences in CSR or CSI between the alliance partners. While we empirically control for such differences by including a measure that captures the absolute difference in CSR/CSI between partners, we acknowledge that there is potential for future research to incorporate the differences in CSR/CSI between partners more directly in the theoretical arguments. Addressing the impact of such an asymmetry on alliance formation, however, requires some careful theorizing, given that the implications of CSR/CSI differences for one partner are likely to be opposite for the other partner. For example, from a focal firm's perspective, a potential partner might be seen as more desirable if the partner has a higher CSR (lower CSI). Yet, the same alliance relationship, deemed desirable by the focal firm, becomes less desirable from the perspective of the potential partner, who would be considering allying with a firm having lower CSR (higher CSI). Since alliance formation necessitates mutual agreement, it

remains unclear how such an asymmetry, where one partner's desire to form an alliance increases while the other partner's desire decreases by the same logic, might overall affect the likelihood of alliance formation. While beyond the scope of this paper, future research could delve into the intricacies of these differences and asymmetries, exploring which partner's preferences, based on CSR/CSI differences, might end up determining alliance formation, directly or through its influence on the trust and spillover mechanisms we outline. In addition, in line with recent developments in signaling theory and CSR literature, we consider CSR and CSI separately as distinct positive and negative signals. Yet, this does not exclude the possibility that there might be some forms of interplay between partner CSR and CSI, which provides an interesting direction for future work.

Third, recognizing that alliance formation is a joint decision contingent on the agreement of both partners, we are not able to prioritize one specific partner over the other in our theorizing and predictions. Accordingly, given that the partners in the dyads we study are indistinguishable, employing a dyad-level measure of our key explanatory variables is the recommended approach. However, it is plausible that one of the firms might act more as the initiator of a deal. It would be interesting for future research to explore, perhaps using survey or field data that allows for a clearer distinction of partner positions, how such a distinction might affect the role of signals with different valences in the alliance formation process.

Lastly, in this study, we focus on one important outcome variable associated with strategic alliances, i.e., alliance formation. Future research can extend our work by exploring how an alliance partner's social activities as signals may affect other alliance-related decisions and outcomes. For example, it would be interesting to examine whether CSR and CSI affect the choices of governance mechanisms in an alliance relationship differently. Additionally, investigating how CSR and CSI as

signals affect other alliance outcomes, such as the stability of the alliance or its innovative and financial performances, could provide valuable insights.

Conclusion

In conclusion, this study outlines the signaling role of social activities in the context of strategic alliances. It emphasizes that while social activities affect alliance formation through both trust and spillover mechanisms, the valence of a signal (i.e., CSR or CSI) determines which signaling mechanism is dominant. Specifically, we show that CSR primarily affects alliance formation through the *trust mechanism*, while CSI primarily exerts its impact through the *spillover mechanism*. Our study highlights the importance of conceptualizing positive and negative signals as distinct concepts that are associated with different dominant mechanisms. We hope that our study can be regarded as an important step toward a more comprehensive understanding of the conceptual distinction between positive and negative signals and the implications of making such a distinction.

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TABLE 1 Descriptive Statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Alliance formation	0.00	0.02										
2. Partners' CSR	0.42	5.43	.03									
3. Partners' CSI	-0.80	2.97	.01	.38								
4. Same location	0.06	0.25	.00	.03	.01							
5. Partners' media coverage	0.28	1.05	.04	.40	.38	.02						
6. Partners' size (log)	11.87	3.09	.03	.51	.31	.01	.34					
7. Partners' ROA	-0.07	0.44	.00	.12	.04	-.01	.06	.41				
8. Partners' Tobin's Q	5.66	3.40	.00	-.05	-.04	.01	-.00	-.24	-.30			
9. Partners' R&D intensity	0.02	0.45	-.00	-.00	-.01	-.00	-.01	-.12	-.06	.01		
10. Partners' general alliance experience	7.32	19.60	.11	.38	.20	.01	.47	.26	.05	-.01	.11	
11. Partners' reputation	0.03	0.17	.01	.21	.05	.01	.17	.20	.03	-.03	-.00	.05
12. Partner-specific alliance experience	0.00	0.04	.14	.06	.03	.01	.08	.06	.01	.00	-.00	.21
13. Same industry	0.08	0.27	.01	.00	-.01	.06	-.00	-.05	-.03	.04	.00	.01
14. Relative partner CSR	3.00	4.52	.02	.88	.37	.01	.37	.43	.10	-.05	-.01	.35
15. Relative partner CSI	1.84	2.31	.01	.41	.69	.00	.38	.31	.05	-.07	-.01	.21

Variables	11	12	13	14
12. Partner specific alliance experience	.01			
13. Same industry	-.00	.02		
14. Relative partner CSR	.18	.04	-.00	
15. Relative partner CSI	.05	.03	-.02	.41

Notes: $N = 2,673,496$. Correlation $> |0.001|$ implies significance at $p < .05$.

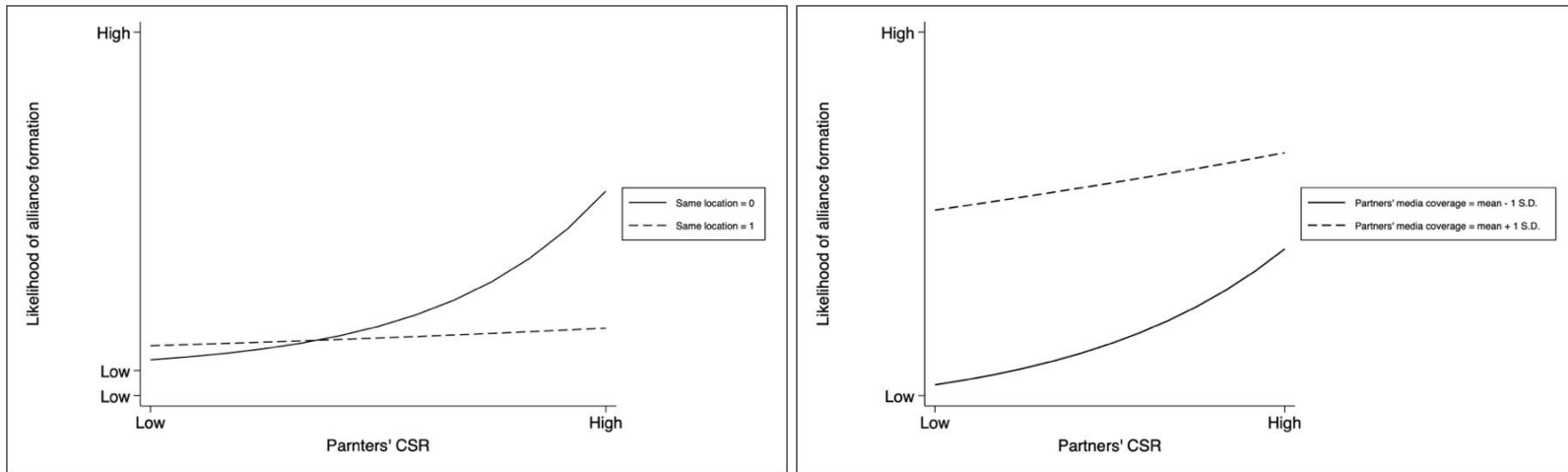
TABLE 2 Logistic Regression Results for the Likelihood of Alliance Formation

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Partners' CSR		0.035*** (0.006)	0.039*** (0.007)	0.051*** (0.008)	0.057*** (0.008)	0.035*** (0.006)	0.038*** (0.007)	0.039*** (0.006)
Partners' CSI		-0.059*** (0.015)	-0.056*** (0.015)	-0.055*** (0.015)	-0.052*** (0.015)	-0.047** (0.015)	-0.028 (0.017)	-0.014 (0.017)
<i>Interactions of Partners' CSR</i>								
Partners' CSR * Same location			-0.032** (0.012)		-0.035** (0.013)			
Partners' CSR * Partners' media coverage				-0.004** (0.002)	-0.005** (0.002)			
<i>Interactions of Partners' CSI</i>								
Partners' CSI * Same location						-0.059* (0.028)		-0.065* (0.031)
Partners' CSI * Partners' media coverage							-0.011*** (0.003)	-0.011*** (0.003)
Same location	0.352** (0.125)	0.373** (0.125)	0.644*** (0.151)	0.363** (0.125)	0.666*** (0.155)	0.470*** (0.126)	0.370** (0.125)	0.478*** (0.127)
Partners' media coverage	0.058*** (0.016)	0.071*** (0.017)	0.069*** (0.017)	0.122*** (0.022)	0.123*** (0.022)	0.070*** (0.017)	0.108*** (0.020)	0.108*** (0.020)
Partners' size	0.372*** (0.021)	0.350*** (0.025)	0.350*** (0.025)	0.341*** (0.025)	0.341*** (0.025)	0.351*** (0.025)	0.342*** (0.025)	0.343*** (0.025)
Partners' ROA	-0.314*** (0.051)	-0.322*** (0.050)	-0.322*** (0.051)	-0.325*** (0.051)	-0.325*** (0.051)	-0.317*** (0.051)	-0.334*** (0.051)	-0.329*** (0.051)
Partners' Tobin's Q	0.042*** (0.008)	0.039*** (0.008)	0.039*** (0.008)	0.038*** (0.008)	0.038*** (0.008)	0.040*** (0.008)	0.036*** (0.008)	0.037*** (0.008)
Partners' R&D intensity	0.075† (0.039)	0.060 (0.042)	0.061 (0.042)	0.055 (0.043)	0.056 (0.043)	0.061 (0.042)	0.057 (0.042)	0.058 (0.043)
Partners' general alliance experience	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)
Partners' reputation	0.038 (0.140)	-0.048 (0.140)	-0.045 (0.140)	-0.068 (0.140)	-0.066 (0.140)	-0.061 (0.141)	-0.060 (0.141)	-0.076 (0.142)
Partner-specific alliance experience	1.860*** (0.125)	1.816*** (0.125)	1.802*** (0.126)	1.845*** (0.125)	1.833*** (0.125)	1.813*** (0.125)	1.831*** (0.125)	1.830*** (0.124)

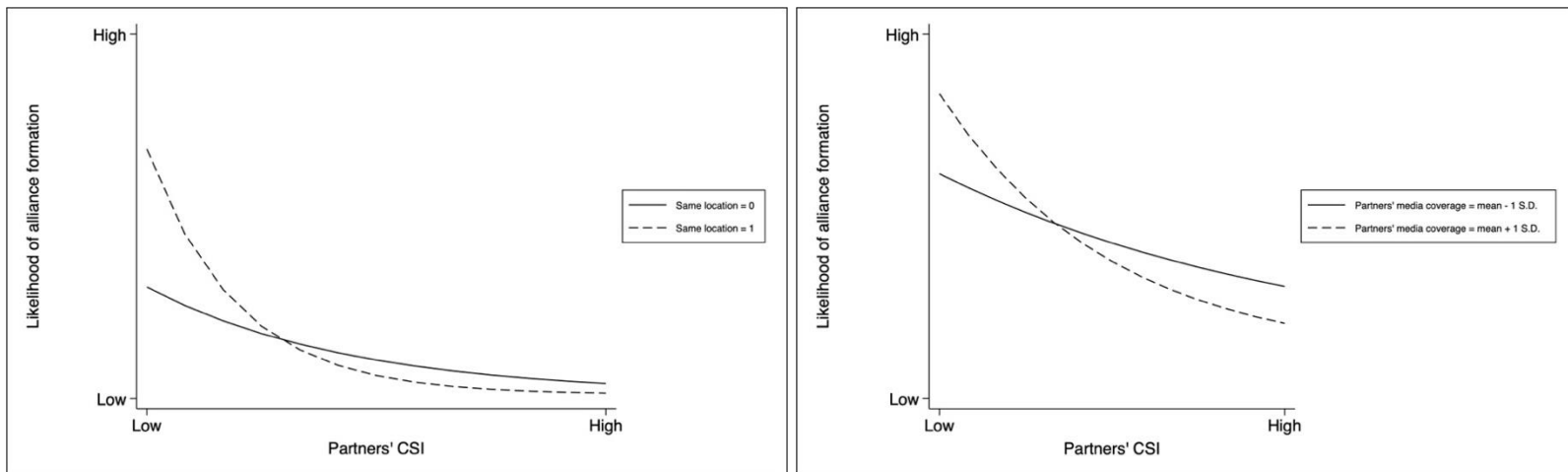
Same industry	1.294*** (0.100)	1.306*** (0.099)	1.311*** (0.099)	1.289*** (0.099)	1.295*** (0.099)	1.317*** (0.099)	1.276*** (0.100)	1.290*** (0.099)
Relative partner CSR	0.018** (0.006)	-0.003 (0.008)	-0.004 (0.008)	-0.009 (0.008)	-0.011 (0.008)	-0.004 (0.008)	-0.007 (0.008)	-0.008 (0.008)
Relative partner CSI	-0.002 (0.014)	0.039* (0.016)	0.036* (0.017)	0.034* (0.016)	0.030+ (0.017)	0.033* (0.017)	0.035* (0.017)	0.029† (0.017)
Constant	-11.920*** (0.385)	-11.552*** (0.453)	-11.575*** (0.454)	-11.458*** (0.452)	-11.482*** (0.452)	-11.560*** (0.453)	-11.396*** (0.456)	-11.411*** (0.455)
Year fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Log pseudolikelihood	-4921.26	-4903.62	-4899.90	-4898.70	-4894.36	-4900.46	-4895.72	-4892.18
Wald chi-square	7087.87	7171.27	7131.90	7065.28	7019.23	7138.64	7146.78	7117.62

Notes: N = 2,673,496; Standard errors in parentheses. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All tests are two-tailed.

FIGURES 1a and 2a: Moderating Effects of Proximity (Same Location) and Partners' Media Coverage on the Effect of Partners' CSR



FIGURES 1b and 2b: Moderating Effects of Proximity (Same Location) and Partners' Media Coverage on the Effect of Partners' CSI



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