BIRDS OF A FEATHER: BUILDING TRUST IN CUSTOMER-SUPPLIER RELATIONSHIPS

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Abstract

This study examines the effect of board similarity on customer-supplier relationships using a sample of Chinese listed companies from 2007 to 2020. We introduce a novel measurement comprising six key dimensions of director characteristics to gauge board similarity. Our findings indicate that increased board similarity enhances cooperation between customers and suppliers. However, this effect is weakened by long distances, making trust-building challenging, and in highly marketized environments, where trust has less influence on business interactions. This study contributes to the existing literature on supply chain relationships, highlighting the role of effective governance mechanisms like board similarity in fostering inter-firm cooperation. Additionally, it offers practical insights for managers aiming to cultivate strategic partnerships and investors seeking a deeper understanding of supply chain dynamics.

Keywords: Board Similarity, Customer-Supplier Relationships, Trust Building

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1. INTRODUCTION

The relationship between customer and supplier plays a critical role in a company's potential for future growth and sustainable development. Cultivating enduring supply chain relationships serves to align customer and supplier interests, mitigate operational risks, and facilitate strategic cooperation (Bauer et al., 2018; Cen et al., 2018). Previous literature has shown the profound impact of supply chain relationships on managerial decision-making processes, which subsequently influences a firm's operational and financial performance (Cohen & Frazzini, 2008; Wang, 2012). Strong relationships between a firm and its primary supply chain partners have a positive impact on its profitability and company value (Wang, 2012). In contrast, the financial distress experienced by major customers reverberates throughout the supply chain, which also increases the risk of default for

suppliers (Jarrow & Yu, 2001). Given the significant economic impact of customer-supplier relationships, it is essential to understand the factors shaping these interdependent connections within the supply chain. This study specifically focuses on the role of the board of directors, investigating whether and how similarities in the board structures of customer and supplier firms influence their cooperative relationship building.

The board of directors wields significant influence over a company's strategic planning and operational performance (Berger et al., 2014; Gafoor et al., 2018.; Tao et al., 2022; Gerged et al., 2023). Extensive research has demonstrated that board characteristics, such as age, gender, education background, and international experience, impact firm performance in areas like information transparency, corporate social responsibility (CSR), and governance effectiveness. (Iliev & Roth, 2018; Xu et al., 2018; Papadimitri et al., 2020; Kara et al., 2022; Upadhyay, 2023). Therefore, a board with diverse composition in these director characteristics may display different behavioral tendencies and preferences, affecting managerial decisions and corporate outcomes.

The boards of customer and supplier firms can often manifest distinct characteristics, which are shaped by the individual personality traits of their directors. Since the establishment of a supply chain relationship is a dynamic and interactive process in which both the supplier and the customer contribute, the disparities in board composition between business partners can exert a significant impact on their relationship building. According to the similarity effect in psychological studies, the similarity in personal characteristics facilitates trust-building and the formation of close relationships among individuals (Nagel et al., 2021; Weidmann et al., 2023). People are inclined to cooperate with those they trust, often those who share similarities with themselves. Therefore, the similarity in board characteristics may foster trust between suppliers and customers, ultimately impacting their collaborative efforts. Specifically, the greater the resemblance in board composition, measured through the personal traits of board members, the higher the probability that directors from both the customer and supplier firms share common values or possess similar value systems. Companies with boards that exhibit similarity in director characteristics are more likely to reach a consensus on future development and strategic plans, which, in turn, paves the way for the establishment of mutual trust and cooperation. Hence, we hypothesize a positive effect of board similarity on the dynamics of customer-supplier relationships.

We examine the effect of board similarity on customer-supplier relationships using a sample of Chinese listed companies from 2007 to 2020. Leveraging the disclosure requirements imposed on Chinese listed firms, which mandate the reporting of major customers in their annual reports, we can discern and access data pertinent to these relationships. We first introduce an innovative measure of board similarity, which is crafted based on six critical dimensions of individual director characteristics: 1) directors' age, 2) gender, 3) education background, 4) overseas experience, 5) academic background, and 6) shareholding ratio. We then employ regression analysis to empirically test the research hypotheses. The results show a significant positive relationship between board similarity and the customer-supplier relationship, suggesting that companies with boards exhibiting greater similarity find it easier to establish trust and engage in cooperative endeavors with one another.

To further validate the underlying mechanisms through which board characteristics influence customer-supplier relationships, we examine the interplay between board similarity, geographical distance, and marketization level. First, we predict that the positive impact of board similarity on customer-supplier relationships can be weakened by a long geographical distance between the customer and supplier, which increases the difficulty of trust-building. Second, firms operating in highly marketized environments are likely to exhibit greater information transparency and be disciplined by effective market mechanisms, potentially reducing the necessity for trust in the partnership-building process. In this case, a high level of marketization can mitigate the positive effect of board similarity. Our analysis supports these predictions, providing additional evidence on how the influence of board similarity on customer-supplier relationships is channelled through trust-building. In addition, we conduct robustness checks using alternative measures of board similarity and find similar results.

This study contributes to the literature in several ways. First, it advances our understanding of the relationship between governance mechanisms and the establishment of supply chain relationships. While prior research indicates that high governance quality is instrumental in fostering customer-supplier relationships, these governance effects are often viewed as unidirectional, with one party influencing the other. In contrast, our study introduces the similarity effect from psychology and examines how the board characteristics of the customer and supplier mutually interact, enriching our understanding of the intricate governance dynamics in supply chain relationships. Second, this study adds to the existing literature on supply chain relationships by providing evidence of the positive impact of board similarity, measured through the alignment of personal traits among board members, on the depth of cooperation between supply chain partners. This novel insight further enriches our understanding of the determinants that shape and enhance supply chain relationships. Last, our findings offer valuable practical implications for managers aiming to cultivate enduring strategic partnerships with their supply chain partners, as well as for investors seeking a deeper understanding of how business activities within the context of supply chain dynamics relate to corporate performance.

The rest of this paper is organized as follows. Section 2 reviews pertinent literature and develops research hypotheses. Section 3 outlines the research methodology, including sample selection process, variable measurement, and regression model. Section 4 presents the empirical results for hypotheses testing. Finally, Section 5 concludes the study and addresses its limitations.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Customer-supplier relationships

A strong relationship between a customer and supplier can potentially enhance the corporate performance for both parties. Previous research documents the significant role the customer-supplier relationship plays in shaping a firm's operational and financial performance. Wang (2012) argues that the quality of the relationship between a firm and its primary supply chain partners has a substantial impact on its earnings and overall profitability. Lian (2017) points out the importance of the customer-supplier relationship in assessing the probability of financial distress, as it can cascade from major customer firms to their supplier counterparts. Chen (2022) finds that the management forecasts provided by customers can serve as predictive indicators of the longevity of customer-supplier relationships. Furthermore, a firm's financial status is often intricately linked to its supply chain partnerships. For instance, suppliers with social connections to major customers, especially in situations involving relation-specific investments and information asymmetry, tend to exhibit higher leverage ratios (Jandik & Salikhova, 2023). In addition, the customer-supplier relationship may facilitate the identification of firms engaging in deceptive practices, thereby improving external investors' understanding of financial information quality (Li, Chang, et al., 2023). The above evidence collectively suggests the interconnected nature of supply chain dynamics and their profound impact on corporate performance.

Owing to the substantial economic impact of the customer-supplier relationship, scholars have devoted efforts to exploring the potential determinants of the formation and evolution of this crucial relationship. One such determinant is corporate governance quality, which facilitates the integration of the supply chain parties and optimizes the dynamics of the supply chain relationship (Zhao et al., 2022). In particular, the supplier's internal control weakness can increase the risk of subsequent customer-supplier relationship termination (Bauer et al., 2018). However, strong market competition, which is considered an external governance mechanism, may impede effective communication and information disclosure among supply chain partners (Chen et al., 2022). In this study, we aim to examine the effect of the board of directors, which serves as the fundamental governance mechanism monitoring a firm's strategic planning and managerial decisions, on shaping the customer-supplier relationship.

2.2. Board characteristics

The board of directors is a vital link between the firm and the resources needed to monitor manager behavior and improve firm performance (Pfeffer, 1972; Pfeffer & Salancik, 1978; Rodriguez-Fernandez et al., 2014). Corporate governance quality is closely tied to various board characteristics, which collectively influence firm performance. High governance quality, which encompasses elements such as larger board size, a higher degree of director independence, and the absence of chief executive officer (CEO)-chairman duality, is associated with superior performance in both social and financial outcomes (Haque, 2017; Gafoor et al., 2018). For example, a powerful CEO with dual roles may have limited pressure on CSR endeavors and disclosures (Gerged et al., 2023), while separating the roles of the CEO and chairman can enhance a firm's motivation to engage in sustainability practices (Naciti, 2019).

Board characteristics associated with the personal traits of board members also matter. The study by Berger et al. (2014) illustrates how demographic attributes such as age, gender, and education background of management team members can influence portfolio risk in financial institutions. Yu (2023) documents a negative association between the proportion of female directors on the board and a firm's investment inefficiency. However, other studies present contrasting findings, suggesting a positive effect of female board representation on corporate performance, as measured by Tobin's Q and return on assets (ROA) (Terjesen et al., 2015; Naciti, 2019). Moreover, an increased number of female directors is associated with greater corporate responsibility and adaptability in response to social changes and challenges (Kara et al., 2022). Gender diversity within management teams is also recognized for its potential to stimulate innovation, thereby enhancing firm value and creating opportunities for future growth (Welbourne et al., 2007; Bauweraerts et al., 2022; Idris, 2009; Pongelli et al., 2023). These discrepancies may stem from various factors, including the industry, sample size, and the specific metrics used for performance evaluation.

Besides, the life experience and incentives of directors play a role. Tao et al. (2022) suggest that directors with foreign experience tend to be more open-minded and have a heightened sense of crisis. This is particularly valuable in environments with weak investor protection mechanisms, where foreign experience can compensate for deficiencies in regulatory safeguards. Such directors may bring diverse perspectives and practices from their international exposure, which can help the company navigate complex challenges and adapt to changing circumstances. Ownership concentration that benefits the board is another important aspect of corporate governance positively associated with firm performance (Javeed et al., 2022). Directors with high ownership stakes are more likely to align their actions with the interests of shareholders, creating a stronger incentive for them to maximize shareholder value, including efforts to enhance both financial and non-financial performance.

Given the substantial body of evidence indicating the importance of board characteristics in managerial decisions and firm performance, we expect that corporate governance mechanisms within both the customer and supplier firms will have a significant impact on their strategic partnership development. Building the supply chain partnership is a crucial strategic decision that falls under the purview of the boards of directors. Our study focuses on the interaction between the boards of directors in customer and supplier firms and assesses their similarity in board composition across multiple dimensions of director personal traits. The customer-supplier relationship is inherently

a two-way interaction, making it essential to investigate the role of governance mechanisms within the context of this interplay between supply chain parties. In this study, we examine how the degree of board similarity between customer and supplier firms affects the establishment of deep and cooperative relationships.

2.3. Board similarity and customer-supplier relationships

Morgan and Hunt (1994) argue that successful cooperation requires relationship commitment and trust. By definition, trust refers to the "confidence in an exchange partner's reliability and integrity" (Morgan & Hunt, 1994, p. 23; Nagel et al., 2021). In many contexts, it serves as the cornerstone of decision-making, and without it, firms are unlikely to engage in cooperation with one another (Du et al., 2020). Therefore, building trust is critical in establishing deep and meaningful cooperation, especially when firms are involved in transactions or partnerships with each other (Zhao et al., 2017; Nagel et al., 2021). Trust creates a sense of confidence that the partner will act reliably and with integrity, which is essential for successful collaboration and cooperation between businesses.

Psychological studies find that people tend to trust others who share similar characteristics with themselves. This similarity effect suggests that trust-building becomes easier when the individuals involved have common tastes, opinions, or hobbies (Fernandez-Gago et al., 2014). In the context of marketing and sales, research has demonstrated that consumers are more likely to trust salespeople who share common interests and values similar to their own, and they use this perceived similarity as a cue of trustworthiness (Doney & Cannon, 1997; Swan et al., 1999; Nagel et al., 2021).

Applying this similarity effect to the supply chain partner context, we predict that firms with board members who share similar characteristics are more likely to be perceived as trustworthy partners. When the boards of directors of different firms exhibit a high level of similarity in director composition, this can create a sense of agreement and mutual understanding between them. This, in turn, facilitates trust-building in their relationships. Therefore, board similarity between the customer and supplier, as measured by the composition of board members with multiple demographic characteristics, is expected to promote trust-building in supply chain relationships and influence their cooperation positively.

Given the significant role of the board of directors in a firm's strategic planning and critical managerial decisions, it's reasonable to expect that the boards of companies engaged in transactions can interact to affect their relationship building. As the customer-supplier relationship is bidirectional and characterized by interdependence, the establishment and maintenance of this relationship are likely to be influenced by the boards of directors of both parties.

Based on the literature regarding board characteristics, boards composed of members with diverse demographic and background attributes, such as age, gender, education, and work experience, may exhibit varying preferences for risk-taking and profit-oriented decisions. In line with findings from psychology studies, a higher degree of similarity between transaction parties may foster greater mutual trust (Nagel et al., 2021). If the board of the supplier is composed of members who possess characteristics similar to those of the customer's board members, it is likely that they will perceive each other as sharing common views and approaches to strategic planning and decision-making. Consequently, this perceived similarity between the boards of the customer and supplier may foster trust-building within the supply chain relationship. This mutual trust, stemming from board similarity, could facilitate the establishment of a stable, enduring customer-supplier relationship, thereby enhancing the extent and scope of their collaboration. Based on this analysis, we hypothesize that the degree of similarity between the boards of the customer and supplier, as depicted by director demographic characteristics, will have a positive influence on the depth of their supply chain relationship:

H1: Board similarity positively affects the customer-supplier partnership.

2.4. Moderating effect of geographical distance

Prior research has shown that the probability of establishing a strategically closer relationship decreases as the geographical distance between firms increases (Jha et al., 2019). In general, when two firms are physically distant from each other, it becomes more challenging to develop trust, which is essential for productive collaborations. Therefore, the increased geographical distance between the customer and supplier, which compounds the challenges of trust-building, may potentially diminish the positive impact of board similarity.

Recent studies have increasingly employed customer geographic proximity as an innovative metric for evaluating customer-supplier relationships (Chu et al., 2019; Huang et al., 2021; Wang, Wu, et al., 2023). When suppliers and customers are geographically distant from one another, suppliers face a greater risk of losing their customers, which reduces their confidence in sustaining a long-lasting partnership (Wang, Wu, et al., 2023). This heightened risk can be attributed to the increased challenges in maintaining relationships in long-distance scenarios, resulting from augmented costs related to product quality control, transportation, and information exchange. Additionally, greater geographic distance can limit a supplier's negotiating power as expenses related to delivering goods or services rise, and the risk of being replaced by a more capable competitor increases. Furthermore, geographical distance can give rise to a psychological sense of distance, which, in turn, hampers the establishment of trust (Eisenberg & DiTomaso, 2021). Companies may be hesitant to engage in cooperation with distant partners due to the perceived high uncertainty resulting from delayed information acquisition and insufficient communication in long-distance arrangements (Huang et al., 2023).

Collectively, a significant geographical separation that intensifies the challenges of trust-building is expected to attenuate the positive impact of board similarity between the customer and supplier, which typically facilitates the trust-building process. Therefore, we derive the following hypothesis:

H2: The positive effect of board similarity on the customer-supplier partnership is weaker in a long-distance context than in a short-distance context.

2.5. Moderating effect of marketization level

The provincial marketization level in China reflects the maturity and effectiveness of the market mechanism in a particular regional market (Wang et al., 2017). Marketization level denotes the stage of economic development, with a high marketization level indicating a more developed regional market characterized by less government intervention, high market competition, and efficient resource allocation. Due to variations in geographic conditions, economic resources, and local government policies, regional economic progress across the country is not consistent (Chen et al., 2019). In regions with a high level of marketization, well-established market norms can effectively monitor and regulate firm behavior. Market discipline, therefore, serves as a more reliable and objective mechanism in such areas, ensuring the trustworthiness and credibility of the parties involved in transactions. More specifically, a highly transparent and well-established market environment can significantly reduce information asymmetry during relationship building and lower transaction costs associated with contract enforcement. Therefore, firms operating in regions characterized by high marketization levels may find it less necessary to allocate extra resources towards partner searching and relationship maintenance, as the well-functioning market mechanisms already contribute to guaranteeing successful cooperation.

With a focus on supply chain relationships, the maturity of the product market where the customer and supplier engage in their buying and selling activities significantly influences the extent to which the transaction parties adhere to market rules and fulfill contract obligations (Zhao et al., 2009; Holm & Ax, 2020). An effective market regime in a highly matured product market significantly reduces the costs associated with partner searching and monitoring, weakening the benefits of board similarity to trust building between the customer and supplier. Therefore, companies operating in high-marketization regions are more inclined to depend on well-established market norms during their business transactions, making the positive board similarity effect less salient. However, companies in low-marketization regions face higher information and transaction costs due to an incomplete market system, thereby amplifying the positive influence of board similarity on trust building and inter-firm cooperation.

H3: The positive effect of board similarity on the customer-supplier partnership is weaker in a high marketization context than in a low marketization context.

3. RESEARCH METHODOLOGY

3.1. Sample

In compliance with disclosure requirements in the Chinese stock market, publicly listed firms are obligated to disclose information regarding the sales to their top five customers in annual reports (China Securities Regulatory Commission, 2012). Some companies voluntarily provide additional information, including the names of these customers, allowing for a clear identification of customer-supplier relationships. To perform our analysis, we obtained the customer-supplier relationship data, i.e., supplier firms with specified customer names in their disclosures, from the China Stock Market & Accounting Research (CSMAR) database. Next, we filtered our dataset to include only firms whose customers were listed on the Shanghai or Shenzhen stock exchanges, which enables us to access director information of both the customer and supplier. Furthermore, we excluded firms in the financial industry and any observations with insufficient data for our regression analysis. The firm and board characteristic information was also obtained from the CSMAR database. Our final sample consists of 1,406 firm-year observations, representing 1,406 supplier firms matched with 1,810 customer firms, spanning the years from 2007 to 2020. Table 1 provides a breakdown of our sample composition.

Table 1. Sample composition

Year	*Supplier*	*Customer*
2007	14	18
2008	23	29
2009	104	124
2010	156	189
2011	181	222
2012	201	248
2013	182	234
2014	87	108
2015	93	127
2016	78	106
2017	76	100
2018	67	96
2019	75	109
2020	69	100
Total	**1,406**	**1,810**

3.2. Measure of board similarity

To measure the degree of board similarity between the customer and supplier, we construct a matrix comprising six dimensions of director characteristics. First, we gather data on the board characteristics of both the customer and supplier, which includes: 1) the average age of the directors, 2) the proportion of female directors, 3) the proportion of directors holding graduate degrees, 4) the proportion of directors with overseas experience[1], 5) the proportion of directors with academic working experience[2], and 6) the overall shareholdings of the board members.

Next, we categorize each of these six board characteristic dimensions as either "high" or "low" in comparison to all listed firms in the same year. We then conduct a cross-examination to ascertain whether both the customer and supplier boards share the same classification. For example, if the average director age of a firm exceeds the median age of peer firms, we designate it as "high" in director age; otherwise, it is categorized as "low". If both the customer and supplier boards are simultaneously labeled as "high" or "low" in the age

[1] Refers to directors who have experience of either working or studying abroad, without the necessity of currently working abroad in the company.
[2] Refers to directors who have experience of working in a university or research institution, whether full-time or part-time, as long as the experience is identified as academic in the database.

dimension, we consider them to have similar age compositions and assign a value of 1 to the age dimension of the board similarity score. Conversely, if they differ, a value of 0 is assigned.

This methodology is consistently applied to evaluate congruence between the customer and supplier in the remaining five board characteristic dimensions. The sum of these similarity indicators across all six distinct dimensions culminates in an aggregated measure of board similarity, which is a discrete number ranging from 0 to 6. A detailed example of this measurement process is shown in Table A.1 in Appendix. In addition, if a supplier is matched with more than one customer within the same year, we calculate the average board similarity score derived from multiple customer boards. This average score offers an assessment of the overall similarity between the boards of the supplier and its major customers.

3.3. Measure of board similarity

To test the effect of board similarity on customer-supplier relationships, we estimate the following regression model.

$$\begin{aligned} CSRelation = {} & \alpha_0 + \alpha_1 Similarity + \alpha_2 Supplier\_ROA + \alpha_3 Supplier\_Growth + \alpha_4 Supplier\_Lev \\ & + \alpha_5 Supplier\_Size + \alpha_6 Supplier\_Loss + \alpha_7 SOE + \alpha_8 FirmAge + \alpha_9 BoardSize \\ & + \alpha_{10} Indep + \alpha_{11} Duality + \alpha_{12} Age + \alpha_{13} Gender + \alpha_{14} Degree + \alpha_{15} Overseas \\ & + \alpha_{16} Academic + \alpha_{17} Share + \alpha_{18} Customer\_ROA + \alpha_{19} Customer\_Growth \\ & + \alpha_{20} Customer\_Lev + \alpha_{21} Customer\_Size + \alpha_{22} Customer\_Loss + Industry\ FE \\ & + Year\ FE \end{aligned} \quad (1)$$

where, *CSRelation* is the depth of the customer-supplier relationship and is measured by the percentage of sales to major customers disclosed by the supplier. *Similarity* is the measure of board similarity based on the matrix with six board characteristic dimensions, including director age, gender, education background, overseas experience, academic experience, and shareholdings. It is calculated by taking the natural logarithm of one plus the average board similarity score, with a higher value indicating a greater similarity in board composition between the customer and supplier firms.

Following prior literature, we incorporate a set of control variables associated with the supplier firm characteristics into the model:

1) basic firm characteristics, including return on assets (*Supplier_ROA*), sales growth (*Supplier_Growth*), financial leverage (*Supplier_Lev*), firm size (*Supplier_Size*), the presence of operating loss (*Supplier_Loss*), the state-owned enterprise indicator (*SOE*), and firm age (*FirmAge*);

2) corporate governance characteristics, including board size (*BoardSize*), the percentage of independent directors (*Indep*), and whether the CEO serves a dual role of the chairman (*Duality*);

3) board characteristics, including the average age of directors (*Age*), the percentage of female directors on board (*Gender*), the percentage of directors holding graduate degrees (*Degree*), the percentage of directors with overseas experience (*Overseas*), the percentage of directors with academic working experience (*Academic*), and the overall shareholdings of directors (*Share*).

In line with the study of Bauer et al. (2018), we also control for significant financial characteristics of the customer firm, specifically *Customer_ROA*, *Customer_Growth*, *Customer_Lev*, *Customer_Size*, and *Customer_Loss*. We use the average customer characteristics when multiple customers are matched to the same supplier. In addition, to account for industry-specific and time-related variations, industry-fixed and year-fixed effects are included in the model. All continuous variables are winsorized at the top and bottom 1% levels to mitigate the effect of outliers. All variables are defined in Table A.2 in Appendix.

4. RESEARCH RESULTS

4.1. Descriptive results

Table 2 reports the descriptive statistics for our sample. On average, suppliers' sales to their major customers constitute 33.3% of their total sales. The average board similarity score stands at 2.850[3], suggesting that in established customer-supplier relationships, the two parties share common features in approximately three out of six director characteristic dimensions. Supplier firms have a mean ROA of 3.6%, a leverage ratio of 0.418, and a sales growth rate of 15.3%, which are comparable to prior studies on Chinese listed firms (Li et al., 2023). 40.3% of the supplier firms in our sample are state-owned. The average firm age is 14.880 years. Regarding board characteristics, the average age of directors is 50.299, and the mean percentage of female directors on the board is 12.7%. A substantial 63.2% of directors hold graduate degrees, indicating a high level of education among board members. In addition, 8.6% of directors possess overseas experience, while 31% have an academic background. The mean value of directors' shareholdings amounts to 9.2%.

4.2. Baseline regression

Following Eq. (1), we examine the effect of board similarity on the depth of customer-supplier relationships. The results in Table 3 indicate that a higher similarity in board composition between customer and supplier firms bolsters their collaborative bonds, resulting in a higher percentage of sales contributed by the customer. The coefficient on *Similarity* is 0.030 in column 1, suggesting a positive influence of board similarity on sales volume. More specifically, when customer and supplier firms share a heightened level of similarity in their board structures, for each additional matching dimension of board characteristics, the customer's share of the supplier's total sales increases by 1.21%[4]. These estimates are statistically significant at the 1% level and economically meaningful.

[3] We back out the numbers from the mean logarithm values. The mean value of the natural logarithm of the board similarity score plus one is 1.348.

[4] We apply the natural exponential function to the coefficients to measure the effect, since independent variable is measured in the form of natural logarithms.

To enhance the validity of the analysis, we conduct stepwise regression analyses by progressively including supplier firms' fundamental characteristics, corporate governance factors, board characteristics, and customer firms' financial metrics in the model. The regression results are shown in columns 2 to 5, with coefficients on Similarity consistently to be significant and positive. The results that board similarity exerts a positive influence on customer-supplier relationships support *H1*.

In addition, the effects of the control variables align with earlier research, as observed in the study of Bauer et al. (2018). For example, the quality of supplier governance and the financial attributes of the customer exhibit positive correlations with the customer-supplier relationship. Specifically, CEO duality decreases the percentage of major customer sales, while the size of the customer enhances its relationship with the supplier.

Table 2. Descriptive statistics

Variable	*Obs.*	*Mean*	*Std. dev.*	*Min*	*p25*	*p50*	*p75*	*Max*
CSRelation	1,406	0.333	0.215	0.024	0.163	0.279	0.475	0.913
Similarity	1,406	1.348	0.391	0	1.099	1.386	1.609	1.946
Supplier_ROA	1,406	0.036	0.074	-0.355	0.014	0.040	0.068	0.206
Supplier_Growth	1,406	0.153	0.342	-0.627	-0.037	0.118	0.282	1.705
Supplier_Lev	1,406	0.418	0.228	0.039	0.237	0.403	0.579	1.033
Supplier_Size	1,406	21.79	1.265	19.51	20.79	21.62	22.63	25.27
Supplier_Loss	1,406	0.105	0.307	0	0	0	0	1
SOE	1406	0.403	0.491	0	0	0	1	1
FirmAge	1,406	2.700	0.405	1.386	2.485	2.773	2.996	3.466
BoardSize	1,406	2.239	0.261	1.609	2.197	2.197	2.303	3.091
Indep	1,406	0.366	0.049	0.333	0.333	0.333	0.385	0.556
Duality	1,406	0.235	0.424	0	0	0	0	1
Age	1,406	3.918	0.070	3.759	3.869	3.919	3.968	4.081
Gender	1,406	0.127	0.120	0	0	0.111	0.222	0.500
Degree	1,406	0.632	0.250	0.111	0.444	0.667	0.857	1
Overseas	1,406	0.086	0.103	0	0	0.091	0.125	0.444
Academic	1,406	0.310	0.176	0	0.200	0.333	0.429	0.778
Share	1,406	0.092	0.153	0	0	0	0.160	0.630
Customer_ROA	1,406	0.039	0.055	-0.548	0.012	0.033	0.062	0.464
Customer_Growth	1,406	0.190	0.937	-1	0.009	0.121	0.245	23.32
Customer_Lev	1,406	0.590	0.201	0.037	0.468	0.599	0.719	1.357
Customer_Size	1,406	24.18	2.409	18.85	22.50	23.70	25.34	30.95
Customer_Loss	1,406	0.065	0.247	0	0	0	0	1
Distance	1,338	0.499	0.500	0	0	0	1	1
Marketization	1,171	0.362	0.481	0	0	0	1	1

Note: Table 2 reports the summary statistics for the main variables. See Table A.2 (Appendix) for variable definitions.

Table 3. Effect of board similarity on customer-supplier relationship (Part 1)

Variables	*Dependent variable — CSRelation*				
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Similarity	0.030**	0.034**	0.032**	0.036***	0.037***
	(2.224)	(2.544)	(2.400)	(2.668)	(2.766)
Supplier_ROA		0.005	0.019	0.028	-0.002
		(0.039)	(0.164)	(0.244)	(-0.021)
Supplier_Growth		0.009	0.010	0.011	0.013
		(0.482)	(0.565)	(0.641)	(0.700)
Supplier_Lev		-0.059*	-0.059*	-0.053	-0.062*
		(-1.684)	(-1.665)	(-1.506)	(-1.780)
Supplier_Size		-0.045***	-0.046***	-0.045***	-0.048***
		(-6.863)	(-7.021)	(-6.997)	(-7.389)
Supplier_Loss		0.078***	0.081***	0.077***	0.078***
		(3.392)	(3.511)	(3.399)	(3.406)
SOE		0.032**	0.025*	0.041***	0.039**
		(2.233)	(1.774)	(2.589)	(2.500)
FirmAge		0.006	0.008	0.010	0.018
		(0.311)	(0.434)	(0.517)	(0.961)
BoardSize			0.014	0.013	0.017
			(0.612)	(0.554)	(0.743)
Indep			-0.067	-0.044	-0.047
			(-0.607)	(-0.383)	(-0.412)
Duality			-0.026*	-0.029**	-0.028**
			(-1.956)	(-2.120)	(-2.061)
Age				0.021	0.011
				(0.235)	(0.119)
Gender				0.046	0.028
				(1.049)	(0.632)
Degree				-0.063**	-0.067***
				(-2.454)	(-2.668)
Overseas				0.089	0.083
				(1.465)	(1.368)

Table 3. Effect of board similarity on customer-supplier relationship (Part 2)

Variables	*Dependent variable — CSRelation*				
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Academic				-0.082**	-0.076**
				(-2.385)	(-2.232)
Share				0.022	0.008
				(0.461)	(0.167)
Customer_ROA					0.062
					(0.481)
Customer_Growth					0.002
					(0.648)
Customer_Lev					0.022
					(0.610)
Customer_Size					0.012***
					(3.914)
Customer_Loss					0.032
					(1.151)
Constant	0.354***	1.346***	1.358***	1.269***	1.046***
	(4.867)	(8.886)	(8.188)	(3.441)	(2.895)
Year fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
R-squared	0.225	0.283	0.286	0.296	0.312
Observations	1,406	1,406	1,406	1,406	1,406

*Note: Table 3 presents the main regression result of the effect of board similarity on customer-supplier relationships. CSRelation is the depth of the customer-supplier relationship measured by the percentage of sales to major customers. Similarity is the average board similarity score between the supplier and its major customers, which comprises the six-dimensional scores depicting the similarity in different board characteristics. See Table A.2 for the definitions of other variables. The t-values (in parentheses) are based on robust standard errors adjusted for heteroscedasticity. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

4.3. Tests of moderating effects

4.3.1. Geographical distance

In this section, we investigate the moderating effect of geographical distance on the relationship between board similarity and customer-supplier relationships. We construct the indicator variable, Distance, by categorizing firms into two subgroups based on the geographical separation between customer and supplier firms: long-distance and short-distance. We expect that greater geographical distance will heighten the challenge of establishing trust between transaction parties, potentially diminishing the likelihood of fostering deep cooperation. Specifically, the long-distance group comprises supplier firms with a geographical distance to their customer firms exceeding the sample median (*Distance* = 1), while the short-distance group includes the remaining firms (*Distance* = 0). We test the moderating effect of geographical distance by including *Distance* and its interaction with board similarity (*Similarity*) in the following model.

$$\begin{aligned} CSRelation = {} & \alpha_0 + \alpha_1 Similarity + \alpha_2 Distance + \alpha_3 Similarity \times Distance + \alpha_4 Supplier\_ROA \\ & + \alpha_5 Supplier\_Growth + \alpha_6 Supplier\_Lev + \alpha_7 Supplier\_Size + \alpha_8 Supplier\_Loss \\ & + \alpha_9 SOE + \alpha_{10} FirmAge + \alpha_{11} BoardSize + \alpha_{12} Indep + \alpha_{13} Duality + \alpha_{14} Age \\ & + \alpha_{15} Gender + \alpha_{16} Degree + \alpha_{17} Overseas + \alpha_{18} Academic + \alpha_{19} Share \\ & + \alpha_{20} Customer\_ROA + \alpha_{21} Customer\_Growth + \alpha_{22} Customer\_Lev \\ & + \alpha_{23} Customer\_Size + \alpha_{24} Customer\_Loss + Industry\ FE + Year\ FE \end{aligned} \quad (2)$$

The results are reported in Table 4. The coefficient on *Similarity* remains significantly positive and consistent with the baseline results after accounting for the influence of geographical distance. The coefficient on the interaction term, *Similarity* × *Distance*, is -0.047, which is statistically significant. This indicates that when the customer and supplier are separated by a considerable geographical distance, the positive impact of board similarity is weakened. Specifically, when the customer is situated far from its supplier, the sales percentage attributed to the customer with a similar board composition is 4.7% lower than when the customer is in close proximity to the supplier. Columns 2 and 3 further show that the positive relationship between board similarity and customer-supplier relationships is less pronounced in the long-distance context. In fact, the coefficient on Similarity is significant only for the short-distance subgroup. Therefore, geographical distance significantly diminishes the positive association between board similarity and customer-supplier relationships, supporting *H2*.

Table 4. Moderating effect of geographical distance

Variables	*Dependent variable — CSRelation*		
	Full sample	***Distance = 0***	***Distance = 1***
	(1)	***(2)***	***(3)***
Similarity	0.055***	0.042**	0.027
	(3.128)	(2.223)	(1.253)
Distance	0.043		
	(1.177)		
Similarity × Distance	-0.047*		
	(-1.821)		
Supplier_ROA	-0.014	-0.047	0.016
	(-0.119)	(-0.326)	(0.076)
Supplier_Growth	0.012	0.051**	-0.023
	(0.640)	(2.270)	(-0.819)
Supplier_Lev	-0.090**	-0.092*	-0.111**
	(-2.516)	(-1.759)	(-1.984)
Supplier_Size	-0.048***	-0.064***	-0.039***
	(-7.353)	(-7.172)	(-3.859)
Supplier_Loss	0.074***	0.058*	0.088**
	(3.221)	(1.946)	(2.443)
SOE	0.044***	0.110***	0.016
	(2.736)	(4.764)	(0.653)
FirmAge	0.027	0.031	0.038
	(1.416)	(1.247)	(1.229)
BoardSize	0.017	0.030	0.019
	(0.720)	(0.957)	(0.502)
Indep	-0.043	-0.354*	0.085
	(-0.370)	(-1.819)	(0.467)
Duality	-0.035**	-0.055***	-0.012
	(-2.483)	(-3.060)	(-0.534)
Age	0.006	-0.069	0.053
	(0.066)	(-0.527)	(0.353)
Gender	0.030	0.050	0.060
	(0.690)	(0.770)	(0.907)
Degree	-0.054**	-0.070*	-0.032
	(-2.128)	(-1.876)	(-0.820)
Overseas	0.093	0.238***	-0.009
	(1.457)	(2.792)	(-0.088)
Academic	-0.086**	-0.015	-0.118**
	(-2.483)	(-0.319)	(-2.139)
Share	0.028	0.041	0.018
	(0.583)	(0.614)	(0.255)
Customer_ROA	0.057	0.149	-0.292
	(0.441)	(0.780)	(-1.394)
Customer_Growth	0.002	0.008	0.003
	(1.050)	(0.347)	(1.313)
Customer_Lev	0.037	0.036	0.069
	(1.022)	(0.653)	(1.192)
Customer_Size	0.011***	0.008*	0.009*
	(3.362)	(1.664)	(1.912)
Customer_Loss	0.020	0.013	0.019
	(0.707)	(0.385)	(0.429)
Constant	1.087***	1.697***	0.777
	(2.912)	(3.451)	(1.304)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
R-squared	0.326	0.455	0.336
Observations	1,338	670	668

*Note: Table 4 presents the regression results of the moderating effect of geographical distance. Distance is an indicator variable equal to one if the average geographical distance between the supplier and its major customers is greater than the sample median and zero otherwise. See Table A.2 for the definitions of other variables. The t-values (in parentheses) are based on robust standard errors adjusted for heteroscedasticity. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

4.3.2. Marketization level

We next investigate the moderating effect of marketization level on the relationship between board similarity and customer-supplier relationships. We draw upon the provincial index of product market development as defined by Wang et al. (2017) to construct the indicator variable, *Marketization*, and classify firms into high- versus low-marketization subgroups. The high-marketization subsample comprises firms in provinces with a product market index ranking in the top quartile (*Marketization* = 1), whereas the low-marketization subsample comprises firms in provinces with a lower product market index (*Marketization* = 0). We incorporate *Marketization* and its interaction with board similarity in the following regression model to test the moderating effect of marketization.

$$\begin{aligned} CSRelation = {} & \alpha_0 + \alpha_1 Similarity + \alpha_2 Marketization + \alpha_3 Similarity \times Marketization + \alpha_4 Supplier\_ROA \\ & + \alpha_5 Supplier\_Growth + \alpha_6 Supplier\_Lev + \alpha_7 Supplier\_Size + \alpha_8 Supplier\_Loss \\ & + \alpha_9 SOE + \alpha_{10} FirmAge + \alpha_{11} BoardSize + \alpha_{12} Indep + \alpha_{13} Duality + \alpha_{14} Age \\ & + \alpha_{15} Gender + \alpha_{16} Degree + \alpha_{17} Overseas + \alpha_{18} Academic + \alpha_{19} Share \\ & + \alpha_{20} Customer\_ROA + \alpha_{21} Customer\_Growth + \alpha_{22} Customer\_Lev \\ & + \alpha_{23} Customer\_Size + \alpha_{24} Customer\_Loss + Industry\ FE + Year\ FE \end{aligned} \quad (3)$$

Table 5 presents the results of our analysis on the moderating effect of marketization levels on the relationship between board similarity and customer-supplier relationships. The coefficient on the interaction term, *Similarity × Marketization*, is 0.076 and statistically significant at the 1% level. This finding implies that high marketization weakens the positive association between board similarity and customer-supplier relationships. In a highly developed market, the customer and supplier are more likely to rely on effective market mechanisms, attenuating the significance of board similarity in building trust between transaction parties. In columns 2 and 3, the coefficient on *Similarity* is significant for firms situated in a low-marketization context but becomes insignificant for those operating in a high-marketization context. These results substantiate a negative impact of marketization level on the association between board similarity and customer-supplier relationships, aligning with the prediction of *H3*.

Table 5. Moderating effect of marketization

Variables	*Dependent variable — CSRelation*		
	Full sample	***Marketization = 0***	***Marketization = 1***
	(1)	***(2)***	***(3)***
Similarity	0.058***	0.047**	-0.008
	(3.277)	(2.536)	(-0.339)
Marketization	0.094**		
	(2.385)		
Similarity × Marketization	-0.076***		
	(-2.669)		
Supplier_ROA	0.050	0.158	0.012
	(0.360)	(0.874)	(0.050)
Supplier_Growth	0.000	-0.009	0.008
	(0.026)	(-0.447)	(0.219)
Supplier_Lev	-0.079**	-0.093**	-0.006
	(-2.088)	(-1.981)	(-0.078)
Supplier_Size	-0.049***	-0.043***	-0.057***
	(-6.890)	(-4.680)	(-4.547)
Supplier_Loss	0.098***	0.119***	0.012
	(3.880)	(3.827)	(0.273)
SOE	0.048***	0.049**	0.028
	(2.840)	(2.399)	(0.923)
FirmAge	0.011	0.018	-0.012
	(0.545)	(0.765)	(-0.352)
BoardSize	0.022	0.032	0.042
	(0.928)	(1.094)	(1.043)
Indep	0.025	0.055	0.142
	(0.209)	(0.336)	(0.707)
Duality	-0.033**	-0.021	-0.065***
	(-2.296)	(-1.049)	(-2.753)
Age	0.056	0.197	-0.083
	(0.588)	(1.617)	(-0.495)
Gender	0.061	0.066	0.005
	(1.252)	(1.024)	(0.059)
Degree	-0.062**	-0.092***	0.033
	(-2.355)	(-2.822)	(0.760)
Overseas	0.058	0.173**	-0.114
	(0.895)	(2.059)	(-1.147)
Academic	-0.075**	-0.024	-0.210***
	(-2.018)	(-0.515)	(-3.211)
Share	0.014	0.010	-0.014
	(0.287)	(0.165)	(-0.171)
Customer_ROA	-0.060	-0.129	0.009
	(-0.392)	(-0.653)	(0.033)
Customer_Growth	0.002	-0.001	0.007***
	(0.815)	(-0.187)	(3.202)
Customer_Lev	0.044	0.060	0.053
	(1.158)	(1.253)	(0.744)
Customer_Size	0.010***	0.006	0.008
	(2.873)	(1.427)	(1.312)
Customer_Loss	0.009	-0.054	0.097
	(0.274)	(-1.612)	(1.480)
Constant	0.751**	0.083	1.607**
	(1.978)	(0.169)	(2.395)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
R-squared	0.333	0.361	0.480
Observations	1,171	747	424

*Note: Table 5 presents the regression results of the moderating effect of marketization level. Marketization is an indicator variable equal to one if the supplier firm has a product market index in the top quartile in a given year and zero otherwise. See Table A.2 for the definitions of other variables. The t-values (in parentheses) are based on robust standard errors adjusted for heteroscedasticity. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

4.4. Robustness checks

To ensure the robustness of our results, we subject them to a battery of additional tests, utilizing alternative measures of board similarity. Specifically, we employ individual similarity indicators for the six director characteristic dimensions to reexamine the association between board similarity and customer-supplier relationships. In alignment with our initial method for measuring board similarity,

these dimensional similarity indicators assess whether the boards of customer and supplier firms are considered similar with regard to director age, gender, educational background, overseas experience, academic background, and overall shareholdings, respectively. Each of these indicators assigns a value of one if the customer and supplier exhibit higher similarity in the specified director characteristic dimension, and zero otherwise. The results are reported in Table 6.

We observe an unexpected negative coefficient for the similarity measure based on directors' overseas experience, which runs contrary to our initial prediction. This deviation could potentially be attributed to personality attributes of directors with overseas experience, as they might tend to be more open-minded and assertive, relying less on trust-building in their collaborative efforts. Nonetheless, the coefficients for the other similarity indicators consistently display positive values and are largely significant at the 10% level. This suggests that our results remain robust when employing alternative dimensional measures of board similarity, confirming the overall validity of our findings.

Table 6. Robustness check: Alternative measures of board similarity

Variables	*Dependent variable — CSRelation*					
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Similarity_Age	0.009					
	(0.818)					
Similarity_Gender		0.015				
		(1.332)				
Similarity_Degree			0.019*			
			(1.767)			
Similarity_Overseas				-0.023**		
				(-2.126)		
Similarity_Academic					0.028***	
					(2.712)	
Similarity_Share						0.022*
						(1.851)
Supplier_ROA	-0.003	-0.005	-0.006	0.003	-0.004	0.002
	(-0.028)	(-0.046)	(-0.053)	(0.027)	(-0.035)	(0.017)
Supplier_Growth	0.013	0.014	0.014	0.015	0.012	0.013
	(0.732)	(0.764)	(0.762)	(0.826)	(0.688)	(0.709)
Supplier_Lev	-0.061*	-0.061*	-0.063*	-0.058*	-0.061*	-0.060*
	(-1.741)	(-1.737)	(-1.782)	(-1.656)	(-1.742)	(-1.717)
Supplier_Size	-0.048***	-0.048***	-0.048***	-0.048***	-0.049***	-0.047***
	(-7.505)	(-7.533)	(-7.374)	(-7.489)	(-7.562)	(-7.343)
Supplier_Loss	0.078***	0.078***	0.078***	0.079***	0.078***	0.078***
	(3.413)	(3.437)	(3.393)	(3.497)	(3.437)	(3.451)
SOE	0.042***	0.043***	0.042***	0.045***	0.043***	0.039**
	(2.732)	(2.800)	(2.692)	(2.872)	(2.793)	(2.466)
FirmAge	0.020	0.020	0.019	0.021	0.018	0.019
	(1.054)	(1.047)	(1.029)	(1.105)	(0.972)	(1.009)
BoardSize	0.020	0.019	0.017	0.022	0.018	0.019
	(0.870)	(0.815)	(0.725)	(0.950)	(0.783)	(0.824)
Indep	-0.042	-0.037	-0.051	-0.041	-0.044	-0.046
	(-0.370)	(-0.326)	(-0.455)	(-0.367)	(-0.392)	(-0.407)
Duality	-0.029**	-0.030**	-0.027**	-0.029**	-0.029**	-0.030**
	(-2.139)	(-2.177)	(-2.005)	(-2.143)	(-2.099)	(-2.176)
Age	0.020	0.028	0.039	0.047	0.057	0.047
	(0.215)	(0.305)	(0.434)	(0.527)	(0.638)	(0.525)
Gender	0.015	0.026	0.013	0.015	0.019	0.017
	(0.345)	(0.575)	(0.303)	(0.327)	(0.439)	(0.391)
Degree	-0.064**	-0.066***	-0.071***	-0.067***	-0.063**	-0.066***
	(-2.544)	(-2.616)	(-2.795)	(-2.643)	(-2.519)	(-2.610)
Overseas	0.091	0.095	0.095	0.112*	0.091	0.092
	(1.524)	(1.594)	(1.583)	(1.847)	(1.511)	(1.531)
Academic	-0.073**	-0.073**	-0.075**	-0.074**	-0.076**	-0.077**
	(-2.125)	(-2.120)	(-2.196)	(-2.159)	(-2.224)	(-2.245)
Share	0.006	0.006	0.003	0.010	0.007	0.017
	(0.139)	(0.121)	(0.061)	(0.216)	(0.158)	(0.362)
Customer_ROA	0.056	0.064	0.061	0.045	0.062	0.051
	(0.431)	(0.495)	(0.473)	(0.349)	(0.489)	(0.390)
Customer_Growth	0.002	0.001	0.002	0.001	0.001	0.001
	(0.626)	(0.447)	(0.739)	(0.450)	(0.517)	(0.562)
Customer_Lev	0.029	0.025	0.025	0.032	0.027	0.027
	(0.799)	(0.689)	(0.705)	(0.887)	(0.738)	(0.740)
Customer_Size	0.012***	0.012***	0.012***	0.011***	0.012***	0.012***
	(3.742)	(3.783)	(3.872)	(3.559)	(3.785)	(3.766)
Customer_Loss	0.029	0.031	0.032	0.026	0.029	0.029
	(1.039)	(1.112)	(1.163)	(0.919)	(1.067)	(1.040)
Constant	1.075***	1.045***	1.000***	0.993***	0.911**	0.943***
	(2.873)	(2.862)	(2.753)	(2.736)	(2.522)	(2.597)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.309	0.309	0.310	0.311	0.312	0.310
Observations	1,406	1,406	1,406	1,406	1,406	1,406

*Note: Table 6 presents the results of the robustness checks using alternative dimensional measures of board similarity. See Table A.2 for variable definitions. The t-values (in parentheses) are based on robust standard errors adjusted for heteroscedasticity. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

5. CONCLUSION

This paper investigates the dynamics of board composition similarity between customer and supplier firms and its impact on their collaborative relationships. Drawing upon the similarity effect in psychology, which suggests that individuals tend to place trust in those who share similar personality traits with themselves, we expect that customer and supplier firms with similar board structures are better equipped to establish trust and engage in cooperation. Therefore, we posit that board similarity, facilitating the trust-building process, engenders a positive association with the development of enduring and stable cooperative partnerships. Consistent with the prediction, our findings show that a higher level of board similarity between the customer and supplier, assessed through a comprehensive six-dimensional matrix encompassing director age, gender, education background, overseas experience, academic experience, and shareholdings, corresponds to an increased sales percentage contributed by the customer to the supplier, i.e., a deeper level of cooperation between them.

To extend our understanding of how board similarity affects relationship development and to further verify the board similarity effect, we examine the moderating roles of geographical distance and marketization level. First, an increased geographical distance between customer and supplier firms escalates the costs and challenges associated with trust-building in transactions. This, in turn, dampens the potential positive impact of board similarity on establishing a close and enduring partnership. In line with this prediction, our findings show that board similarity yields a positive effect on the partnership between customer and supplier firms only when they are in close proximity to each other, but this effect diminishes when they are geographically distant. Second, well-established market mechanisms play a crucial role in regulating and monitoring firm behavior during transactions, reducing the reliance on trust for relationship building and subsequently weakening the positive role of board similarity. Our findings are consistent with this prediction, indicating that a high degree of board composition similarity between customer and supplier firms positively influences their relationship in a low-marketization context. However, this effect is not evident in a high-marketization context. These findings lend further support to our argument that board similarity facilitates trust-building between transaction parties, ultimately leading to deeper cooperation between them.

This study contributes to the existing literature in several ways. First, our understanding of the factors influencing relationship-building within supply chains remains limited. By shedding light on the role of the board of directors, a fundamental governance mechanism, in fostering in-depth cooperation, it provides valuable insights into the determinants of long-term partnership development. This knowledge is crucial for a firm's sustained growth and development in the dynamic business landscape. Second, while prior literature has extensively explored the influence of various board characteristics on governance effectiveness, such as board size, independence, and directors' personality traits, this study takes a novel approach by emphasizing the interplay between the boards of customer and supplier firms. We add to this line of research by providing evidence of how the interaction between the two boards of customer and supplier shapes their partnership. Third, the study introduces the concept of the similarity effect from psychology to explain how the interaction between the boards of two parties impacts their relationship building. This innovative perspective enriches our understanding of the similarity effect by examining its role in the context of supply chain relationships. Last, the practical implications of our findings are substantial. They provide valuable guidance for managers, business partners, and government agencies seeking to nurture stable and in-depth cooperation within supply chains, which can ultimately lead to enhanced operational performance. These insights have profound relevance for real-world decision-making and strategic planning.

There are potential limitations to this study. First, the measurement of board similarity is based on six dimensions of director characteristics, primarily due to the availability of individual demographic information of board members in the database. The similarity measure could be refined with more personal information collected to enhance the validity of our empirical design and results. Second, we examine the board similarity effect on customer-supplier relationships using a sample of listed supplier firms with listed customer firms to ensure sufficient data for empirical analysis. Therefore, our results may not be applicable to relationships between listed suppliers and unlisted customers. We do not investigate the potential differences between listed and unlisted supply chain partners in this study. Future research is warranted to extend the understanding of relationship-building for unlisted business partners. In addition, our study emphasizes the bidirectional influence between transaction parties but assumes the relationship to be relatively stable as both the board characteristics and cooperation depth are not expected to change dramatically in a short time. However, future research is encouraged to delve deeper into the relationship formation process and how relationship building evolves through the interactions of transaction parties. This line of research holds promising prospects for extending our knowledge of supply chain dynamics.

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APPENDIX

Table A.1. An example of board similarity measurement process

Director characteristic dimensions	*Supplier (High/Low)*	*Customer (High/Low)*	*Similarity matrix*
Age	High	High	1
Female director	Low	Low	1
Graduate degree	High	Low	0
Overseas experience	Low	High	0
Academic background	High	High	1
Shareholdings	High	Low	0
Board similarity score			**3**

Table A.2. Variable definitions

Variable	*Definition*
CSRelation	The percentage of sales to major customers.
Similarity	The natural logarithm of one plus the average board similarity score, which is based on the matrix with six board characteristic dimensions, including director age, gender, education background, overseas experience, academic experience, and shareholdings.
Supplier_ROA	The return on assets of the supplier firm, measured as the net income scaled by the firm's total assets.
Supplier_Growth	The annual sales growth rate of the supplier firm.
Supplier_Lev	The financial leverage of the supplier firm, calculated as the total liability divided by the total assets.
Supplier_Size	The natural logarithm of the total assets of the supplier firm.
Supplier_Loss	An indicator variable that equals one for the year if the supplier firm has a negative net income and zero otherwise.
SOE	An indicator variable that equals one for state-owned enterprises and zero otherwise.
FirmAge	The natural logarithm of one plus the number of years since the supplier firm's establishment.
BoardSize	The natural logarithm of the number of board directors.
Indep	The percentage of independent directors on the board.
Duality	An indicator variable that equals one if the CEO is also the chairman and zero otherwise.
Age	The natural logarithm of the average age of directors.
Gender	The percentage of female directors.
Degree	The percentage of directors who have graduate degrees.
Overseas	The percentage of directors with overseas backgrounds.
Academic	The percentage of directors with academic-related experience.
Share	The percentage stock holdings of directors.
Customer_ROA	The return on assets of the customer firm, measured as the net income scaled by the firm's total assets.
Customer_Growth	The annual sales growth rate of the customer firm.
Customer_Lev	The financial leverage of the customer firm, calculated as the total liability divided by the total assets.
Customer_Size	The natural logarithm of the total assets of the customer firm.
Customer_Loss	An indicator variable that equals one for the year if the customer firm has a negative net income and zero otherwise.
Distance	An indicator variable that equals one if the average geographical distance from the supplier to its customer firms is greater than the sample median and zero otherwise.
Marketization	An indicator variable that equals one if the product market index of the supplier firm is among the top quartile values of all the provinces in the same year and equals zero otherwise.