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The contingent effects of asset specificity, contract specificity, and trust on offshore relationship performance

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ABSTRACT

Drawing on the perspectives of interfirm governance mechanisms, we develop a contingency theoretical framework that examines how contract specificity and trust interact with local suppliers' physical asset specificity and human asset specificity in shaping the relationship performance of offshore cooperation between local suppliers and global buyers. The empirical data for hypothesis testing were collected from a survey of 162 dyads composed of Chinese local suppliers and international buyers. The empirical results reveal an inverted U-shaped relationship between physical asset specificity and relationship performance, and this inverted U-shaped relationship is stronger when the level of contract specificity is higher. There is a linear and positive relationship between human asset specificity and relationship performance, and this relationship becomes stronger when the level of trust between the local supplier and international buyer is higher.

1. Introduction

Firms in developed countries have increasingly outsourced their value-added activities from local suppliers in emerging countries in the form of offshore buyer–supplier cooperation. The success of this offshore buyer–supplier cooperation may depend on how well the relationship between the two partners goes (Bertrand & Mol, 2013). Among the various factors that explain relationship performance in offshore cooperation, asset specificity – nonredeployable specific investments that are dedicated to such relationships (Hoetker & Mellewigt, 2009) – has been identified as a primary determinant by prior studies (De Vita & Tekaya, 2015; Wu, Chen, Chen, & Tung, 2016). However, whether asset specificity facilitates or hinders relationship performance remains inconclusive in the literature. Some scholars postulate that such investments can lose at least part of their value if the transactional relationship was terminated because this type of investment is often designed for a particular transaction and shifting it to other businesses is difficult (Williamson, 1991), in turn hindering relationship performance (Liu, Liu, & Li, 2014). Another strand of literature argues that asset specificity signals the desire to invest in an enduring relationship (Lui, Wong, & Liu, 2009), which can improve partners' trust and satisfaction (Dyer, 1996), thereby leading to behavior-enhanced relationship performance (Lin, Huang, Lin, & Hsu, 2012). Accordingly, further examination of the effect of unilateral specific investment on relationship performance in offshore cooperation represents an important research agenda that should shed some light on the prior controversial findings on the topic.

Furthermore, the transaction cost theory-related literature has documented that the term *asset specificity* means "many different things to different people," and this literature calls for a more comprehensive scale of the construct's multidimensional nature (David & Han, 2004; Williamson & Riordan, 1985). On the one hand, an asset can be physically specific (i.e., physical asset specificity, PAS), referring to tangible investment assets such as tools, equipment and machinery. On the other hand, it can be human relational specific (i.e., human asset specificity, HAS), referring to intangible investment assets such as organizational investments related to customizing workflows, professional training, and learning to serve international buyers (Zaheer & Venkatraman, 1995). In addition, the impacts of PAS and HAS on relationship performance may vary in an emerging country such as China. However, prior studies were exclusively concerned with the estimation of a single, albeit composite, asset specificity, with a focus on

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outsourcing cooperation in domestic settings in developed countries (De Vita, Tekaya, & Wang, 2010), neglecting the significance of the differences in cultures, institutions and bargaining positions between local suppliers in developing countries and international buyers in developed countries in cross-border exchanges (Zhou & Xu, 2012). Consequently, in terms of the management of PAS and HAS to enhance relationship performance in a cross-border context, we lack a clear understanding of the strategic significance of such management for local suppliers in emerging developing countries.

The interfirm governance literature suggests that safeguarding partners' asset specificity investments and maintaining an effective business relationship in such interfirm cooperation require effective governance mechanisms (Yang, Zhao, Yeung, & Liu, 2016). Thus, firms in partnerships and dealing with cross-border transactions need to employ appropriate governance mechanisms, namely, formal and informal interfirm mechanisms, to avoid transactional uncertainties and risks of opportunism (Xie, Liang, & Zhou, 2016). Formal interfirm governance mechanism-related studies, usually building on transaction cost economics (TCE), emphasize the role of formal control, such as contract specificity, to regulate cooperation (Poppo & Zenger, 2002). At the same time, TCE also stresses the importance of informal interfirm governance mechanisms, such as norms and enduring relationships, whereby the role of more relational governance mechanisms, such as trust and social interactions, must be taken into account (Shahzad, Ali, Takala, Helo, & Zaefarian, 2018). Different governance mechanisms are required for different transaction objectives in governing offshore cooperation relationships (Hoetker & Mellewigt, 2009); hence, it is important to understand specifically how contract specificity and trust shape the effects of PAS and HAS on the performance of the relationship.

This study makes three major contributions to the body of literature on interfirm relationship performance. First, it identifies and empirically examines the two distinctive dimensions of asset specificity, PAS and HAS, and evaluates the differentiated impacts of PAS and HAS on the relationship performance embedded in offshore cooperation. Second, while previous studies limited their attention to the linear effects of asset specificity, our study discovers a nonlinear impact of PAS on relationship performance by examining how formal and informal interfirm governance mechanisms affect the relationship performance of offshore cooperation when interacting with different types of asset specificities. Third, this study extends the outsourcing-related relationship performance literature on formal and informal control mechanisms by exploring how contract specificity and trust influence the relationships between relationship performance and PAS and HAS, respectively.

2. Theoretical foundations

2.1. Asset specificity investment and inter-firm governance mechanisms

Asset specificity refers to the “durable investments that are undertaken in support of particular transactions” (Williamson & Riordan, 1985; p. 55). Once sunk, these investments cannot be redeployed (or can be deployed only at a high productivity discount) to alternative inter-organizational relationships if the cooperative relationship was destined to terminate (Dyer, 1996). Such investments can be tangible (e.g., physical materials such as tools, equipment and machinery) or intangible (e.g., knowledge-specific assets such as the learning and training of personnel) (David & Han, 2004). In offshore cooperative businesses, local suppliers' main tasks are often to process and assemble products according to the requirements of international buyers such that their roles are competence exploiting, either as local implementers or as assemblers (Lin et al., 2012). To enhance the production efficiency and thus improve the effectiveness of the offshore cooperation, local suppliers make these idiosyncratic investments in both tangible and intangible assets for the offshore cooperation (Jean, 2014; Kang, Mahoney, & Tan, 2009). In this study, we focus our examinations on the PAS and HAS that are invested by local suppliers and are uniquely dedicated to a particular offshore cooperation.

Managing both PAS and HAS investments requires the use of adequate inter-firm governance mechanisms to safeguard the process in order to effectively overcome the challenges in achieving a viable and fruitful balance of interests and power between partners (Nooteboom, 1999). According to TCE studies, the formal inter-firm governance mechanisms refer to “depersonalized exchanges, a reliance on financial parameters, and the drafting and implementation of formal contracts” (Ferguson, Paulin & Bergeron, 2005; p. 217). In line with the logic of resource exchange theory, the informal governance are normally considered including social-based mechanisms that enhance information sharing, open communication and cooperation which are based on trust (Ryall & Sampson, 2009; Wang & Tanaka, 2011). Since different governance mechanisms are required for different transaction objectives in governing offshore cooperation relationships (Hoetker & Mellewigt, 2009), it is important to understand how contract specificity and trust may shape the effects of PAS and HAS on the performance of the relationship (Shahzad et al., 2018; Xie et al., 2016). Considering the inter-firm governance mechanisms, the relationship between asset specificity and relationship performance is subject to two interpretations. The formal inter-firm governance literature emphasizes the role of formal control such as contract specificity, which provides a protective mechanism for safeguarding specific assets against opportunism by specifying each party's rights, duties, and responsibilities, contract specificity (Fryxell, Dooley, & Vryza, 2002). The informal inter-firm governance studies underscore the importance of trust by providing a “mini-society with a vast array of norms” (Williamson & Riordan, 1985; p. 71) behavior and functioning as a social lubricant for steering partners' behaviors in reducing transaction costs and fostering effective exchanges (Poppo, Zhou, & Ryu, 2008).

2.2. Theoretical framework

A well-performing relationship between partners in an offshore cooperation occurs when both the local supplier and the international buyer are satisfied with the relationship's effectiveness and efficiency (Jean, Sinkovics, & Kim, 2014). PAS and HAS provide better offshore manufacturing capabilities by improving offshore cooperation efficiency and helping local suppliers coordinate their production processes with their international buyers (De Vita et al., 2010; Kang et al., 2009). Thus, both PAS and HAS can be considered important antecedents to relationship performance in such context. The adoption of formal inter-firm governance mechanisms such as contract specificity and informal inter-firm governance mechanisms such as trust helps to safeguard the suppliers' asset specificity and shapes various features of offshore cooperation, including inter-partner knowledge-sharing efficiency and trustworthy relationship building (Dyer & Hatch, 2006), and thus may have a significant influence on the relationship between asset specificity and relationship performance. Therefore, we incorporate these two different types of inter-firm governance mechanisms to specifically examine how contract specificity and trust interact with PAS and HAS respectively in shaping the relationship between both PAS and HAS and relationship performance in a cross-national context. In line with the logic discussed above, we develop a contingency theoretical framework that postulates two broad propositions: 1. physical asset specificity and human asset specificity affect relationship performance; and 2. contract specificity and trust moderate the effect of physical asset specificity and human asset specificity on the relationship performance, respectively. Our theoretical framework is presented in Fig. 1.

2.3. Hypotheses

2.3.1. Physical asset specificity and relationship performance

In offshore cooperation, PAS can be considered to reflect a positive

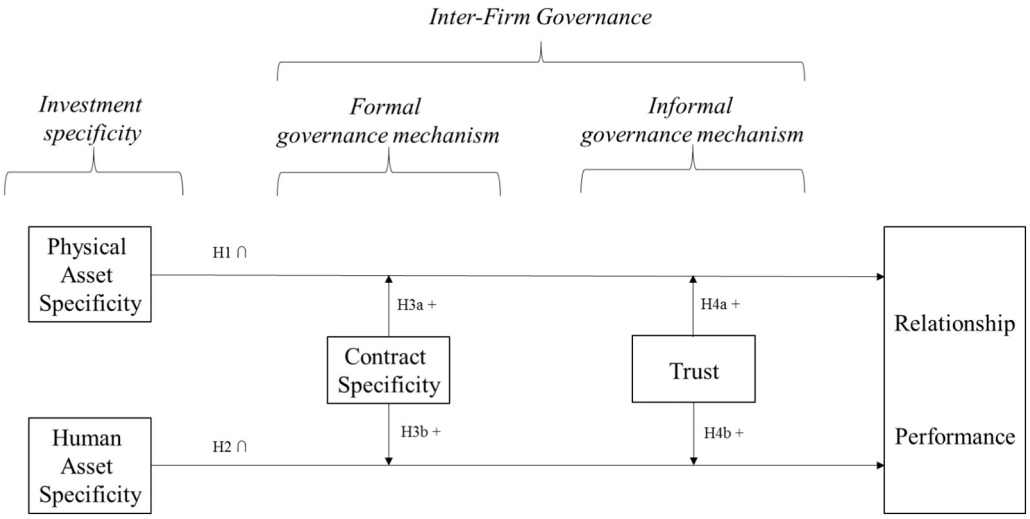

Fig. 1. Conceptual framework.

desire on the part of the local supplier to build a long-term cooperative relationship with the international buyer and thus to help cultivate a bilateral expectation between them (Wu et al., 2016). When both parties share a bilateral expectation, the local supplier has more opportunities to acquire valuable knowledge from the international buyer, who, in turn, is willing to spend more time articulating its know-how, which improves cooperation performance in the offshore cooperative partnership (Mooi & Frambach, 2012). PAS may also help enhance local suppliers' production capacity, which may help increase process efficiency and effectiveness, in turn increasing the international buyer's satisfaction in working with local suppliers (Wagner & Bode, 2014). This may encourage the international buyer to invest more in the cooperative business, and consequently, the relationship between the partners can be improved (Kang et al., 2009). Furthermore, PAS improves the supplier's motivation for joint decision making with the international buyer since joint decision making allows the supplier to influence the decisions of the international buyer in a manner that is favorable to the supplier (Lin et al., 2012). It also allows suppliers to identify opportunities to improve their deployment of PAS (Dyer & Singh, 1998), which may result in stronger buyer–supplier relationship continuity, effectively enhancing the efficiency of the offshore cooperation.

However, these positive effects may begin to decline and even become negative when PAS reaches an exceedingly high level for two primary reasons. First, higher PAS increases the likelihood of hold-ups within the offshore relationship (Dyer & Hatch, 2006), causing the supplier to suffer from making unnecessary obligations to serve the international buyer (Villena, Choi, & Revilla, 2016). Additional responsibilities that require continuous investments of time and effort will deplete local suppliers' limited resources and decrease their motivation to acquire additional information and knowledge. Furthermore, the international buyer may exploit its powerful position to obtain more profits from the offshore cooperation (Bertrand & Mol, 2013), severely hindering the efficiency of the offshore cooperation and damaging relationship performance. Second, when a local supplier's PAS is higher, its responsiveness to both the international buyer's changing requirements and the product portfolio might decrease since PAS is generally designed for the initially best employment purposes (Klein, Crawford, & Alchian, 1978). In response to the international buyer's ever-changing needs, more efforts need to be mobilized to develop mutual understanding and cooperative norms, including managing both products and the appropriate use of assets (Narayanan, Narasimhan, & Schoenherr, 2015). Due to these difficulties in developing new products and managing existing products at higher levels of PAS, relationship performance may deteriorate. Thus, we hypothesize the following:

Hypothesis 1. There is an inverted U-shaped relationship between physical asset specificity and relationship performance.

The investment of HAS by local suppliers may signal their commitment to developing an enduring relationship, which may help increase international buyers' trust and cultivate positive cooperative behaviors leading to an enhanced relationship (Lui et al., 2009). In addition, HAS can enhance the efficiency of offshore cooperation through employee training and the recruitment of additional staff for the sole purpose of serving the international buyer (Kang et al., 2009), contributing to improving the relationship between partners. Moreover, the significant differences in cultures and institutions between the host and home countries of the partners can make it difficult for the partners to reach a mutual understanding and resolve conflicts by legal means (Choi & Contractor, 2016). The knowledge-specific assets spent serving a particular international buyer can increase the likelihood of a better understanding and enhanced communication efficiency between the partners, which may help the international buyer value the potential benefits associated with the offshore cooperation with the local supplier (Cavusgil, Deligonul, & Zhang, 2004). As a result, the international buyer may be more likely to exchange its resources with the local supplier and reinforce reciprocal knowledge transfer, leading to improved relationship performance.

However, the positive effects of HAS may decline or even become negative when the level of HAS is too high for several reasons. First, HAS can also lead to problems such as a lock-in situation, a narrower product portfolio and risks of opportunism when its level becomes excessively high (Williamson, 1991). Second, although HAS helps improve suppliers' services for specific international buyers, exceedingly high investments in such assets may lead to the path dependence of knowledge accumulation and learning, causing the environment to be an ecological field that is suitable for self-existence but that is not conducive to the survival of other technologies (Kogut & Zander, 1992). As a result, a large quantity of knowledge accumulated by a supplier to serve a particular international buyer may impede its effective learning of other knowledge, severely limiting its openness to information. Thus, we hypothesize the following:

Hypothesis 2. There is an inverted U-shaped relationship between human asset specificity and relationship performance.

2.3.2. The moderating effect of interfirm governance mechanisms

The relationship between asset specificity and relationship

performance may be context specific to the types of interfirm governance mechanisms employed. The formal interfirm governance literature emphasizes the role of contract specificity, which relies on contractual agreements to safeguard asset specificity and to regulate relationships (Hoetker & Mellewigt, 2009). Informal interfirm governance studies underline the important role of trust, which focuses on the reliability, creditability, and benevolence of a partner (Jia, 2013). Since different governance mechanisms are required for different transaction objectives in interfirm relationships (Wang, Zhang, & Jiang, 2018), the effects of PAS and HAS on relationship performance may vary with the level of contract specificity and trust.

Contract specificity is expected to strengthen the positive effect of asset specificity (i.e., PAS and HAS) when asset specificity is at a lower level. The international buyer might not want to share valuable knowledge with the local supplier due to concerns over the leakage of core knowledge when the local supplier's asset specificity is low to moderate (Cannon & Perreault Jr, 1999). Detailed contractual provisions specify procedures for offshore cooperation and ensure resource exchange through scrutiny and penalty mechanisms by a third party (Hoetker & Mellewigt, 2009). This formal mechanism can reduce the risks associated with knowledge transfer in an offshore cooperation relationship when the supplier's asset specificity is at a low or moderate level (Wuyts & Geyskens, 2005), which fosters the international buyer's confidence in knowledge sharing, thus improving the positive effects of PAS and HAS on the relationship between the partners.

Offshore cooperation often suffers from a misunderstanding of the information needs and resource obligations of the partners, which may negatively affect the effectiveness of the suppliers' asset specificity (Li, Li, Liu, & Yang, 2010). By providing detailed rules stipulating the content, roles and purpose of the supplier's asset specificity, contract specificity may decrease this ambiguity related to suppliers' asset specificity (Cavusgil et al., 2004). In addition, it provides evaluation criteria for international buyers to accurately investigate and evaluate suppliers' asset specificity, thus causing the value of such investments to be more easily recognized by international buyers (Choi & Contractor, 2016). This helps partners recognize the potential value of asset-specific investments, ensuring the smooth operation of the offshore cooperation (Doh, 2005) and improving the positive effects of the local supplier's asset specificity on relationship performance for the offshore cooperation.

However, under certain circumstances, contract specificity coupled with high levels of asset specificity may be detrimental to relationship performance. The reason is that the detailed contract may limit the supplier's autonomy by stipulating the tasks, duties and rights ex ante (Wuyts & Geyskens, 2005), which may increase the severity of the potential lock-in situation. Because an offshore cooperation is an adaptive process, partners can suffer the myopia of focusing on codified information without flexibly adapting to market changes outside of these standard contractual procedures and policies (Zhou, Zhang, Sheng, Xie, & Bao, 2014). In addition, detailed contracts rely on regulatory or legal authorities to impose sanctions (Cavusgil et al., 2004), which conflicts with the principles of trust building and may undermine the mutual understanding between the partners (Lin et al., 2012). In such a situation, it is more difficult for the local supplier to adequately manage the use of overinvested asset specificity to meet the international buyer's changing requirements. Therefore, contract specificity may enhance the negative effects of asset specificity on the product portfolio and relationship performance. Thus, we hypothesize the following:

Hypothesis 3a. The inverted U-shaped effect of physical asset specificity on relationship performance is stronger (deeper) when contract specificity is at a high level, and vice versa.

Hypothesis 3b. The inverted U-shaped effect of human asset specificity on relationship performance is stronger (deeper) when contract specificity is at a high level, and vice versa.

It is plausible to expect trust to strengthen the positive effect of asset specificity on the local supplier's relationship performance from two perspectives. First, trust breeds a shared identity, similar values and common goals between partners, and hence, it helps build a foundation for efficient offshore cooperation through asset specificity (Dyer & Singh, 1998). This informal interfirm governance mechanism fosters the exchange partners' confidence in the offshore cooperation and helps improve the quality of communication between the partners, further enhancing the positive impacts of asset specificity on relationship performance (Kano, 2017; Mooi & Frambach, 2012).

Second, by stressing self-regulation and positive self-motivation, trust may lead to a win–win environment that encourages partners to maximize their mutual interests by minimizing opportunistic behaviors (Zhou, Zhang, Zhuang, & Zhou, 2015). In such a situation, local suppliers are encouraged to invest more in asset specificity (i.e., PAS and HAS), enhancing the suppliers' ability to provide better specialized agency services for specific international buyers. International buyers will also increase their willingness to share key technologies and knowledge with suppliers (Fryxell et al., 2002), thus enhancing the positive effect of asset specificity on relationship performance.

However, trust can also become counterproductive to the relationship between asset specificity and relationship performance after it reaches a certain level. The reason is that high levels of trust imply strong norms and ingrained routines such that the interaction between the partners becomes rigid or stuck in patterns (Lin et al., 2012), strengthening the lock-in situation of the local supplier incurred by overinvested asset specificity. Additionally, trust is represented by credibility and mutuality, which may reflect the same or similar values, ideas, and attitudes between partners (Heide & John, 1992). When the local supplier shares the same values as its international buyer, it is more likely to become complacent in the existing offshore partnership without qualifying shared knowledge from the international buyer (Poppo et al., 2008). Such complacency may restrain local suppliers from challenging international buyers' positions, hindering their expansive understanding of problems and retarding the development of new ideas. As discussed in H1 and H2, high levels of both PAS and HAS may incur problems such as a narrower scope of product and technology diversity. Trust may further narrow this scope and damage the relationship's performance (Wang, Terziovski, Jiang, & Li, 2017). Thus, we hypothesize the following:

Hypothesis 4a. The inverted U-shaped effect of physical asset specificity on relationship performance is stronger (steeper) when the trust level is high.

Hypothesis 4b. The inverted U-shaped effect of human asset specificity on relationship performance is stronger (steeper) when the trust level is high.

3. Methods

3.1. Survey instrument development

Two structured questionnaires were developed in English language. One was used for collecting survey data from local suppliers, and the other was used for collecting survey data from international buyers. The questionnaires were then translated into Chinese, which was also back-translated into English. In doing so, the wordings of some questions were readjusted to improve the match between the Chinese and English versions. Before the surveys were conducted, a pre-test of the questionnaires was conducted with Chinese local suppliers. A total of 100 questionnaires in Chinese with an accompanying letter explaining the purpose of the survey were delivered in person by the first author to 100 local Chinese suppliers located in the country's Yangzi River Delta region. It was requested that one knowledgeable senior executive from each Chinese local supplier be the respondent to complete the

questionnaire. In total, 91 completed questionnaires were returned, and 86 of which were found usable after a careful screening. We then performed corrected item-total correlation (ITC) analysis and the alpha reliability coefficient analysis. The questionnaire comprised 30 measurement items. Six of the items with values lower than 0.7 were deleted. Thus, the questionnaire that was subsequently used for survey data collection consisted of 24 items.

3.2. Sample and data collection

Similar to a prior study (Wang et al., 2018), we used part of a survey database that was collected from Chinese local suppliers and their respective foreign buyers. The list of the local suppliers was compiled based on three major sources including the Economic Commerce Committee, the Ministry of Commerce website, and The Information Bank (an open database). A total of 860 offshore local suppliers located across nine Chinese regions and provinces were identified as the population for the survey, and 632 of which were defined as the sample for the survey based on two criteria; i.e., the selected local suppliers must: (1) have at least one of their top five international buyers located developed countries (Zhou & Xu, 2012); and (2) be a firm operating in the manufacturing sector in which most offshore cooperation in China occurs (Li et al., 2010).

The survey data were collected in two steps. First, we visited each of the individual firms in person to solicit their cooperation. In total, 238 firms agreed to participate in the survey. We requested senior executives, including CEOs, or vice presidents, or senior marketing managers, from each firm to participate in the survey. We chose an onsite interview method to collect survey data from the local suppliers in China. The interviewers were professional surveyors from a consulting firm. Because the unit of analysis was an offshore buyer–supplier dyad, we asked the senior managers of the local suppliers to select one of their five overseas customers (international buyers) located in developed countries and then answer the relevant questions (Zhou et al., 2014). In total, 232 completed questionnaires were returned from local Chinese suppliers of which 229 were usable. In the second step, the paired questionnaires were then emailed to the international buyers designated by the corresponding suppliers, and purchasing department supervisors of these international buyers were asked to provide information on the relevant variables. 178 completed questionnaires from 229 international buyers were returned, and 162 of which were usable. The final dataset thus consisted of 162 local suppliers – international buyer dyads. To check for non-response bias, thirty companies, randomly selected from those who did not respond, were analysed for their firm-level attributes, such as number of employees, sales volume and age and paired with the responding firms. The *t*-tests did not show any significant difference between the non-responding and responding firms (number of employees: $t = 1.66$, p = .11; firm age: $t = 2.21$, p = .17; sales volume $t = -1.54$, p = .13). Thus, the tests results indicate that the non-response bias is not present in the sample.

3.3. Measurements

The measures were adapted from the established scales of prior studies. All focal variables were measured on five-point Likert scales ("1" being strongly disagree, and "5" being strongly agree). Table 1 reports the measurement items and their validity assessments.

The measurement for *relationship performance* (dependent variable) was adopted from Cavusgil et al. (2004) and Selnes and Sallis (2003) with six items that capture the international buyers' satisfaction with the quality of the service, supplier's responsiveness to problems or queries, as well as the overall benefits obtained from outsourcing the activity.

The measurement for *physical asset specificity* (independent variable) was adopted from Anderson and Weitz (1992) and De Vita et al. (2010) to assess the local supplier's physical investments, such as tools, equipment, machinery and other physical materials dedicated to servicing the international buyer. The measurement for *human asset specificity* (independent variable) was adopted from Heide and John (1992) and De Vita et al. (2010) to assess the local supplier's human investments, such as customisation of workflows and the expenses of personnel training and learning for the purposes of serving the specific international buyer.

The measurement for *contract specificity* (moderator) was adopted from Cannon and Perreault Jr (1999) and Wuyts and Geyskens (2005) to examine the degree to which the contractual provisions clearly specify and detail the obligations and responsibilities of each party in the offshore cooperation. The measure for *trust* (moderator) was adopted from Doney and Cannon (1997) and Yli et al. (2001) to capture the degree of trust and support between international buyers and local suppliers in their offshore partnerships.

We also included six control variables adopted from prior studies in order to avoid alternative explanations of the results. *Supplier age* was measured by the number of years since a supplier was established (Poppo & Zenger, 2002). *Supplier size* was measured by the log of the number of the local supplier's employees (Doh, 2005). *Industry type* was measured as a dummy variable that was coded as "1" for high-tech industries and "0" otherwise (Hauknes & Knell, 2009). *Offshore cooperation tenure* was measured by the number of years that the local supplier has been involved in cooperation with the international buyer (Li et al., 2010). *Local suppliers' location* was measured as a dummy variable representing the western region (coded as "1") and central and eastern regions (coded as "0", Wang et al., 2018). *International buyers' location* was coded with three dummy variables to control for the international buyers' location heterogeneity across North America, Europe and Oceania.

3.4. Reliability and validity

Composite reliability assesses inter-item consistency and was operationalised with the internal consistency method estimated by Cronbach's alpha. Table 1 indicates that the values of all constructs (ranging from 0.86 to 0.90) are well above 0.70, providing evidence of measure scale reliability. Convergent validity was assessed by examining both factor loadings and the average variance extracted (AVE). Table 1 shows that all factor loadings were highly significant at the 0.001 level and the AVE for each construct were greater than 0.50, which demonstrates adequate convergent validity (see Table 2). Moreover, we calculated the AVE, which measures the overall proportion of the variance in the indicators accounted for by the latent construct. Table 2 shows that the AVE of each construct exceeds the squared correlations between the latent variable and every other variable, providing strong support for discriminant validity (Fornell & Larcker, 1981).

3.5. Common method variance

To minimise common method variance (CMV), we used data collected from different sources to test the hypothesised relationships. The data for the independent variables and moderators were collected from Chinese local suppliers, and the data for the dependent variable were collected from the respective international buyer for each Chinese supplier. We also performed three statistical tests. None of the single-factor tests (Harman, 1967) or the partial correlation technique (Burke, Brief, & George, 1993) demonstrated any significant issues with CMV. The third test included all of the variables in a single-factor confirmatory factor analysis model, and the poor model fit ($\chi^2/d\,f = 5.379$, CFI = 0.521, NFI = 0.418, IFI = 0.487, GFI = 0.246, RMSEA = 0.321) indicates that no single factor can explain the majority of the variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Table 1
Measurement properties.

Variables and items	Factor loading	Alpha	CR	AVE
Physical asset specificity (Anderson & Weitz, 1992; De Vita et al., 2010)				
PAS1: We have expanded our production capacity in the hope of a long-term relationship with this international buyer.	0.86***	0.88	0.89	0.66
PAS2: We have made a substantial investment in facilities dedicated to this international buyer.	0.84***			
PAS3: We have made a substantial investment in customized machinery, tools, etc., which are dedicated to this international buyer.	0.86***			
PAS4: If we stopped cooperation with this international buyer, we would have a lot of trouble redeploying our facilities presently serving this international buyer.	0.70***			
Human asset specificity (De vita et al., 2010; Heide & John, 1992)				
HAS1: We have recruited additional staff for the sole purpose of serving this international buyer.	0.76***	0.86	0.86	0.61
HAS2: We have made a substantial investment in employee training for the purpose of serving this international buyer.	0.84***			
HAS3: We have made employee training that is specifically tailored to the cooperation with this international buyer.	0.80***			
HAS4: If we stopped cooperation with this international buyer, we would have a lot of trouble redeploying our employees presently serving this international buyer.	0.71***			
Contract specificity (Cannon & Perreault Jr, 1999; Wuyts & Geyskens, 2005)				
CON1: Our relationship with this international buyer is governed primarily by written contracts.	0.82***	0.89	0.90	0.65
CON2: We have precisely stated the enforceability of the contract and legal liability of the two companies in our contract.	0.77***			
CON3: We have precisely stated the duties and rights in our contract.	0.86***			
CON4: We have precisely stated the method/process of contract modification(renegotiation) in our contract.	0.80***			
CON5: We resolve disagreements by referring back to the contract in the cooperation with this international buyer.	0.75***			
Trust (Doney & Cannon, 1997; Yli, Autio, & Sapienza, 2001)				
TRU1: The international buyer fully trusts our production ability.	0.78***	0.88	0.88	0.61
TRU2: As far as key issues are concerned, the international buyer is always honest with us.	0.90***			
TRU3: The international buyer and our company feel indebted to our collaborating.	0.74***			
TRU4: The international buyer is genuinely concerned about whether our business succeeds.	0.77***			
TRU5: When making important decisions, our international buyer considers our welfare as well as its own.	0.71***			
Relationship performance (Cavusgil et al., 2004; Selnes & Sallis, 2003)				
RP1: We are very satisfied with the quality of the service received in terms of consistency, timeless and accuracy.	0.79***	0.90	0.91	0.62
RP2: We are very satisfied with this supplier's responsiveness to problems or queries.	0.74***			
RP3: We are very satisfied with the overall benefits obtained from outsourcing this function.	0.84***			
RP4: Overall, the objectives set by our company in relation to the outsourcing project have been met.	83***			
RP5: The service level received from this supplier has exceeded our company's expectations.	0.78***			
RP6: Outsourcing the function of reference has allowed our company to concentrate own resources on core activities.	0.72***			

Note: χ^2/d f = 1.21, NFI = 0.90, CFI = 0.98, IFI = 0.98, TLI = 0.98, RMSEA = 0.036.
*** p < .001.

4. Results

4.1. Hypothesis testing findings

Table 3 presents the results of the standardized regression estimates. The independent variables and moderators were mean-centered prior to the formation of the interaction terms. Table 2 shows that none of the correlation coefficients is greater than 0.5, the threshold value provided by Churchill (1991). All of the variance inflation factors (VIFs) are well below the recommended cutoff point of 10 (see Table 3), suggesting the

Table 2
Descriptive statistics and correlations (n = 162).

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Supplier age	–													
2. Supplier size	0.09	–												
3. Industry type	0.08	0.08	–											
4. OCT	0.21**	0.02	0.10	–										
5. Eastern Region	−0.04	−0.02	0.09	0.01	–									
6. Western Region	0.16*	−0.03	−0.04	0.08	0.09	–								
7. North America	0.04	0.06	0.07	0.08	0.03	−0.06	–							
8. Europe	−0.02	−0.08	−0.01	−0.02	0.09	−0.01	0.02	–						
9. Oceania	−0.004	−0.09	−0.05	−0.10	−0.05	0.17*	−0.05	−0.05	–					
10. PAS	0.13	−0.01	0.07	−0.01	0.03	−0.04	0.14†	0.15†	0.02	**0.81**				
11. HAS	0.06	0.04	−0.07	0.09	0.01	0.01	0.15†	0.10	−0.08	0.34***	**0.78**			
12. RP	0.11	−0.07	0.11	0.12	0.15†	0.05	0.09	0.08	0.02	0.36***	0.43***	**0.81**		
13. CS	0.13†	0.08	0.01	−0.04	0.15†	−0.07	0.03	0.08	−0.02	0.20*	0.07	0.19*	**0.79**	
14. Trust	−0.04	−0.06	−0.10	−0.02	−0.02	0.06	−0.04	0.06	0.03	0.23**	0.34***	0.16*	0.20*	**0.85**
Mean	14.45	2.85	0.019	7.72	0.28	0.19	0.29	0.31	0.01	2.84	2.60	3.21	3.35	3.00
S.D.	9.18	0.77	0.039	4.63	0.45	0.39	0.46	0.46	0.08	0.73	0.64	0.55	0.64	0.61

Note: The data on the diagonal (in bold font) is the square root of AVE of the construct.
Offshore cooperation tenure (OCT); Physical asset specificity (PAS); Human asset specificity (HAS); Relationship performance (RP); Contract specificity (CS). Using the data collected from local suppliers for the independent variables and moderators, and using the data collected from international buyers for the dependent variable.
† p < .10.
* p < .05.
** p < .01.
*** p < .001.

Table 3
The results of regression analysis (n = 162).

Variables	Relationship performance							
	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8
Control variables								
Supplier age	0.050	0.065	0.084	0.116	0.093	0.073	0.092	0.052
Supplier size	0.109	0.088	−0.016	0.058	−0.039	0.044	−0.034	0.029
Industry type	0.075	0.072	0.102	0.079	0.091	0.085	0.115	0.059
Offshore cooperation tenure	0.145†	0.149*	0.147*	0.101	0.125†	0.031	0.125†	0.086
Eastern Region	0.162*	0.151*	0.101	0.131†	0.109	0.099	0.065	0.101
Western Region	0.019	0.017	−0.089	0.046	−0.072	−0.043	−0.092	−0.060
North America	0.055	−0.051	0.001	−0.077	0.030	−0.026	0.014	0.004
Europe	0.063	−0.016	−0.049	−0.015	−0.034	−0.010	−0.049	0.010
Oceania	0.043	0.018	0.092	0.016	0.113	0.099	0.088	0.111
Independent variables								
Physical asset specificity (PAS)		0.447***		0.412***		0.463***		0.354***
PAS^2		−0.228*		−0.210*		−0.280***		−0.153*
Human asset specificity (HAS)			0.537***		0.578***		0.487**	0.314***
HAS^2			0.103		0.006		0.107	0.056
Moderator				0.050				
Contract specificity					0.122			0.014
Trust						0.109	0.061	0.086
Interaction								
Contract specificity* PAS				0.262**				0.190*
Contract specificity* PAS^2				−0.250**				−0.180*
Contract specificity* HAS					0.113			. 110
Contract specificity* HAS^2					0.094			. 034
Trust * PAS						0.093		0.106
Trust * PAS^2						−0.055		−0.057
Trust * HAS							0.514***	0.412***
Trust * HAS^2							−0.108	−0.077
Model fit								
R^2	0.091	0.330	0.325	0.432	0.383	0.396	0.351	0.546
Adj-R^2	0.043	0.281	0.276	0.378	0.325	0.338	0.289	0.422
F-value	1.810*	6.725***	6.569***	7.975***	6.527***	6.875***	5.676***	7.106***
Largest VIF	1.080	1.080	1.905	1.143	2.513	1.736	2.588	2.618

Note: Table entries are standardized regression coefficients (β).
Using the data collected from local suppliers for the independent variables and moderators, and using the data collected from international buyers for the dependent variable.
† p < .10.
* p < .05.
** p < .01.
*** p < .001.

nonexistence of multicollinearity between the variables (Neter, Wasserman, & Kutner, 1985).

Hypothesis 1 predicts an inverted U-shaped relationship between PAS and relationship performance. Model 2 indicates that PAS is positively correlated with relationship performance (β = 0.447, p < .001), whereas their quadratic terms exhibit a significant negative relation (β = −0.228, p < .05). To depict the curvilinear relationship, we calculated the simple slopes of the curvilinear relationship at low and high levels (i.e., one standard deviation below/above the mean) for PAS in Fig. 2 based on Cohen, Cohen, West, and Aiken (2003). The results show that PAS exerts a positive effect on relationship performance when it is low (β = 0.73, p < .01) but a negative effect when it is high (β = −0.36, p < .05). Therefore, Hypothesis 1 is supported.

Hypothesis 2 predicts an inverted U-shaped relationship between HAS and relationship performance. Model 3 indicates that PAS is positively correlated with relationship performance (β = 0.537, p < .001), whereas their quadratic terms exhibit a nonsignificant positive relation (β = 0.103, p > .10). Therefore, Hypothesis 2 is not statistically supported.

Hypothesis 3a predicts that contract specificity strengthens the inverted U-shaped relationship between PAS and relationship performance. Model 4 indicates a positive effect of the first-order interaction between PAS and contract specificity (β = 0.262, p < .01), whereas the effect of the second-order interaction between the squared PAS and contract specificity is negative (β = −0.250, p < .01). Fig. 3 shows that when PAS is low (left side of the dotted line), it exerts a stronger positive effect on relationship performance (steeper slope) at high levels of contract specificity. However, when PAS is high (right side of the

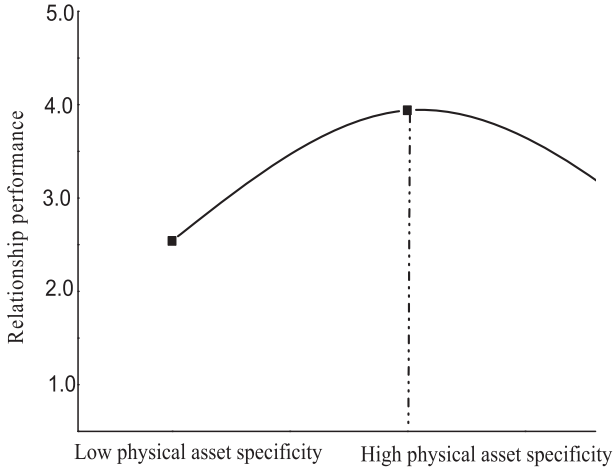

Fig. 2. Relationship between physical asset specificity and relationship performance.

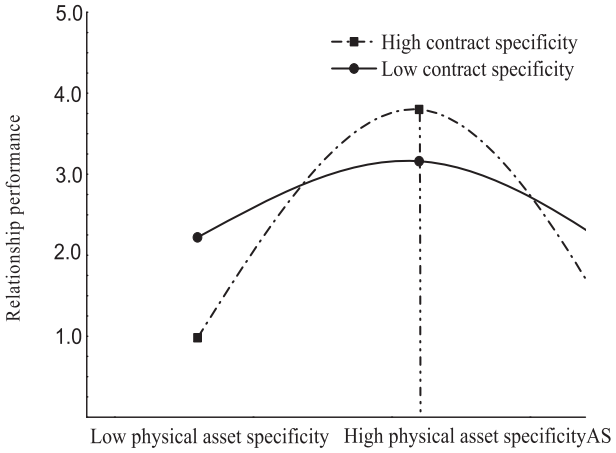

Fig. 3. Moderating effect of contract specificity on the relationship between PAS and relationship performance.

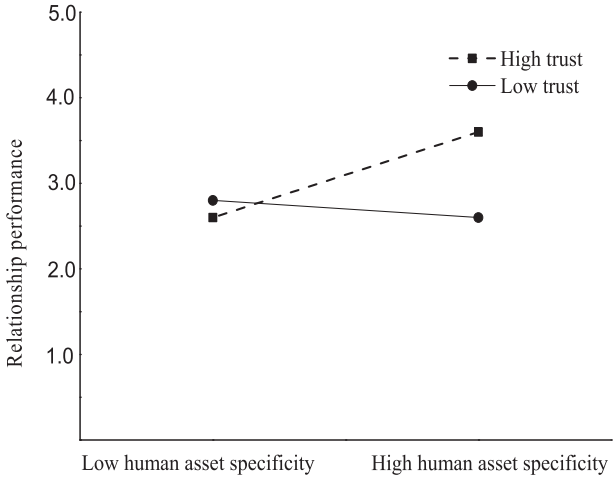

Fig. 4. Moderating effect of trust on the relationship between HAS and relationship performance.

dotted line), relationship performance declines faster as PAS increases when contract specificity is high. Therefore, Hypothesis 3a is supported.

Hypothesis 3b predicts that contract specificity strengthens the inverted U-shaped relationship between HAS and relationship performance. Model 5 indicates that the effects of both the first-order interaction between HAS and contract specificity ($\beta = 0.113$, $p > .10$) and the second-order interaction between the squared HAS and contract specificity are nonsignificant ($\beta = 0.094$, $p > .10$). Therefore, Hypothesis 3b is not statistically supported.

Hypothesis 4a predicts that trust strengthens the inverted U-shaped relationship between PAS and relationship performance. Model 6 indicates that the effects of both the first-order interaction between PAS and trust ($\beta = 0.093$, $p > .10$) and the second-order interaction between the squared PAS and trust are nonsignificant ($\beta = -0.055$, $p > .10$). Therefore, Hypothesis 4a is not statistically supported.

Hypothesis 4b predicts that trust strengthens the inverted U-shaped relationship between HAS and relationship performance. Model 7 indicates a positive effect of the first-order interaction between HAS and trust ($\beta = 0.514$, $p < .001$), whereas the effect of the second-order interaction between the squared HAS and trust is nonsignificant ($\beta = -0.108$, $p > .10$). Hypothesis 4b is partially supported. Fig. 4 shows that HAS exerts a linearly negative effect on relationship performance when the trust level is low ($\beta = -0.14$, $p < .05$) but a linearly positive effect when trust in the offshore cooperation is at a higher level ($\beta = 0.31$, $p < .01$). Thus, trust is proven to strengthen the positive effect of HAS on relationship performance.

4.2. Robustness check

We use alternative measures as our explanatory variables to test the robustness of the results. The measures of relationship performance are assessed using international buyers' satisfaction with offshore cooperation, which may be different from local suppliers' assessments. To address this concern about asymmetry, we use an alternative measure of relationship performance adapted from Selnes and Sallis (2003) that reflects the assessment of relationship performance in offshore cooperation from local suppliers' perspectives. It asks local supplier managers to assess the extent to which the offshore cooperation relationship led to firm improvements in terms of (1) sales growth, (2) market share, (3) profitability, (4) product quality and (5) the rate of introducing new products to the market (CR = 0.88). We use a sample of 229 local suppliers to test our model; the results are presented in Table 4. The use of this alternative measure generates similar results, which provides additional support for our results.

4.3. Endogeneity

Since interfirm governance mechanisms (i.e., contract specificity and trust) are chosen to manage problems that arise due to specific investments, contract specificity and trust may be endogenous to PAS and HAS. Following prior studies (Garen, 1988; Mooi & Ghosh, 2010), this paper adopts whole residual analysis to correct for selection bias. We obtain the residual of contract specificity from Eq. (1) (η) and the residual of trust from Eq. (2) (μ), and we use these residuals as additional regressors in Eq. (3) after incorporating all the independent variables, moderators and control variables to test our hypotheses. Specifically, the residuals and the interaction terms (η * CS, η * trust, μ * CS and μ * trust), along with the selection variables (i.e., CS and trust) and key exogenous variables (i.e., independent variables and control variables) are used as regressors in the analysis to implement the Garen procedure. We used FGLS to estimate the performance equation (Eq. (3)), where x is a vector of other determinants of relationship performance.

$$CS = \beta_0 + \beta_1 * PAS + \beta_2 * HAS + \beta_3 * x + \eta \quad (1)$$

$$Trust = \beta_0 + \beta_1 * PAS + \beta_2 * HAS + \beta_3 * x + \mu \quad (2)$$

$$\begin{aligned} Relationship\ \ performance = {} & \beta_0 + \beta_1 * \eta + \beta_2 * \mu + \beta_3 * \eta * CS \\ & + \beta_4 * \eta * Trust \\ & + \beta_5 * \mu * CS + \beta_6 * \mu * Trust + \beta_1 * x_3 + \varepsilon \end{aligned} \quad (3)$$

As shown in Table 5, the parameter estimates for the residuals in all five models are highly significant ($p < .01$), indicating that contract specificity and trust are endogenous in our setting.[1] The results are

[1] Model 1 in Table 5 shows that the impact of the interaction between PAS and contract specificity on relationship performance is positive ($\beta = 0.27$, $p < .01$) but that the impact of the interaction between PAS^2 and contract specificity on relationship performance is negative ($\beta = -0.24$, $p < .01$). However, the impacts of the interaction between HAS and contract specificity and the interaction between HAS^2 and contract specificity on relationship performance are insignificant (Model 2 in Table 5: $\beta = -0.03$, $p > .10$; $\beta = 0.02$, $p > .10$). Similarly, Model 4 in Table 5 shows that the impact of the interaction between HAS and trust on relationship performance is positive ($\beta = 0.35$, $p < .01$) and that the impact of the interaction between HAS^2 and trust on relationship performance is nonsignificant ($\beta = 0.02$, $p > .10$). Model 3 in Table 5 shows that the impact of the interaction between PAS and trust and the impact of the interaction between PAS^2 and trust on relationship performance are nonsignificant ($\beta = 0.13$, $p > .10$; $\beta = 0.11$, $p > .010$).

Table 4
Robustness test (n = 229).

Variables	Relationship performance							
	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8
Control variables								
Supplier age	0.037	−0.017	0.096	−0.020	0.113†	0.110†	0.130	0.090
Supplier size	0.106	0.106	−0.057	0.106	−0.095	0.000	−0.073	−0.013
Industry type	0.094	0.045	0.124	0.042	0.099	0.092	0.143*	0.065
Offshore cooperation tenure	0.118	0.108	0.101	0.108	0.054	0.000	0.066	−0.034
Eastern Region	0.145*	0.143*	0.068	0.134*	−0.069	−0.059	−0.083	−0.032
Western Region	−0.015	0.040	0.015	0.046	0.012	0.058	0.002	0.011
North America	−0.020	−0.057	−0.003	−0.077	0.021	−0.021	0.016	−0.018
Europe	0.055	0.022	−0.001	−0.015	0.004	0.026	−0.007	0.031
Oceania	0.031	0.009	0.066	0.016	0.091	0.101†	0.058	0.104
Independent variables								
Physical asset specificity (PAS)		0.361***		0.347***		0.490***		0.350***
PAS^2		−0.158*		−0.155*		−0.270***		−0.211**
Human asset specificity (HAS)			0.339***		0.546***		0.456***	0.302***
HAS^2			0.027		0.059		0.072	0.019
Moderator								
Contract specificity				0.009	0.118			0.004
Trust						0.121	0.062	0.112
Interaction								
Contract specificity* PAS				0.164*				0.212**
Contract specificity* PAS^2				−0.149*				−0.182*
Contract specificity* HAS					0.102			−0.023
Contract specificity* HAS^2					0.078			0.121
Trust * PAS						−0.020		−0.022
Trust * PAS^2						−0.055		−0.051
Trust * HAS							0.519***	0.483***
Trust * HAS^2							−0.098	−0.101
Model fit								
R^2	0.104	0.244	0.263	0.276	0.360	0.409	0.349	0.552
Adj-R^2	0.051	0.189	0.209	0.207	0.311	0.370	0.307	0.402
F-value	1.970†	4.324***	4.857***	4.402***	8.606***	10.558***	8.202***	10.990***
Largest VIF	1.101	1.080	1.373	1.143	2.321	1.828	2.588	2.864

Note: Table entries are standardized regression coefficients (β).
Using the data collected from local suppliers for the independent variables, moderators and dependent variable.
† $p < .10$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

similar to the findings from the OLS model (i.e., Tables 3 and 4), suggesting that our empirical results are robust when we control for the endogenous variables.

5. Discussion

5.1. Contributions

In line with key findings, this study endeavors to make three major contributions. First, unlike De Vita et al. (2010), who showed that both PAS and HAS enhanced relationship performance in domestic settings, our study highlights the differentiated impacts of suppliers' PAS and HAS on offshore cooperation by revealing a curvilinear effect of PAS and a linearly positive effect of HAS on relationship performance in international settings. These results provide insights into the ways in which different dimensions of suppliers' asset specificity (PAS and HAS) differently influence relationship performance in the context of cross-national settings. More importantly, these results echo both Williamson and Riordan's (1985) and David and Han's (2004) calls for a comprehensive measure of the construct's multidimensional nature by showing that it is more meaningful to differentiate the effect of various types of asset specificity on relationship performance than to examine the whole effect of the total amount of asset specificity.

Second, our findings illustrate why local suppliers should always be cautious about the degree of PAS. Thus, the findings shed light on the debate over the influence of asset specificity on firms' performance (Liu et al., 2014; Lin et al., 2012; Lui et al., 2009). Importantly, the existing literature has mostly addressed this question by adopting a single theoretical framework that focuses on either the merits or the weaknesses of AS, which may lead to contradictory findings depending on the empirical setting and specific context. By contrast, our strategy relies on a more integrative perspective and suggests that to make sense of this conundrum, the merits and weaknesses of AS must be reconciled instead of adopting a contrasting approach.

Third, the empirical results highlight the importance of an appropriate combination between asset specificity and the attributes of the interfirm governance mechanisms (contract specificity vs. trust) in strengthening offshore cooperation, thus resulting in improved relationship performance. Existing interfirm governance studies argue that the cultural and institutional differences between different countries impede the coordination effect of contracts; thus, trust plays a more important role in coordinating interfirm exchanges in cross-border transactions (Jean, 2014). However, our results show that trust is not an effective mechanism to enhance the positive effect of PAS on relationship performance. Rather, contract specificity is more effective in safeguarding local suppliers' PAS and improving the positive impact on relationship performance.

Table 5
The results of regression analysis for endogenity test (n = 162).

Variables	Relationship performance				
	Model1	Model2	Model3	Model4	Model5
Control variables					
Supplier age	0.07	−0.09	−0.07	−0.03	−0.08
Supplier size	−0.01	0.06	0.09	0.05	−0.02
Industry type	0.02	0.08	0.01	0.06	−0.01
Offshore cooperation tenure	0.13	0.07	0.15	0.10	0.07
Eastern Region	0.05	0.02	0.01	0.03	0.09
Western Region	0.06	0.10	0.12	0.13	0.01
North America	0.02	0.01	0.02	0.02	−0.01
Europe	0.03	0.02	−0.01	−0.02	−0.03
Oceania	0.02	0.07	−0.01	0.06	0.03
η1	0.25*	0.28			0.33*
η2			0.28*	0.24*	0.41*
η1* contract specificity	−0.21	−0.30*			−0.18
η1* trust					−0.23*
η2* contract specificity					−0.01
η2* trust			−0.15	−0.18	−0.29*
Independent variables					
Physical asset specificity(PAS)	0.43***		0.35***		0.23**
PAS^2	−0.21**		0.23*		−0.17*
Human asset specificity (HAS)		0.46		0.31**	0.31***
HAS^2		−0.03		0.12	0.01
Moderators					
Contract specificity	0.03	0.11			0.09
Trust			0.09	0.06***	−0.04
Interactions					
Contract specificity* PAS	0.27***				0.21
Contract specificity* PAS^2	−0.24***				−0.18
Contract specificity* HAS		−0.03			−0.04
Contract specificity* HAS^2		0.02			0.02
Trust * PAS			0.13		0.11
Trust * PAS^2			0.11		−0.07
Trust * HAS				−0.35	0.21
Trust * HAS^2				0.02	−0.01
Model fit					
Adj-R^2	0.39	0.23	0.33	0.34	0.53
F-value	7.36***	4.07***	6.02***	6.06***	7.28***
Largest VIF	3.70	4.02	2.93	2.97	5.79

Note: Table entries are standardized regression coefficients (β). Using the data collected from local suppliers for the independent variables and moderators, and using the data collected from international buyers for the dependent variable.

* $p < .05$.
** $p < .01$.
*** $p < .001$.

5.2. Managerial implications

The results of this study reveal three key implications for managers. First, local suppliers should recognize that different dimensions of asset specificity have heterogeneous effects on relationship performance in offshore cooperation. It is advisable that more attention should be paid to the downsides and risks associated with PAS and that PAS should be maintained at an optimal level. By contrast, local suppliers need to accumulate HAS by constantly increasing their investments in employee training and learning to continually enhance long-term relationship performance.

Second, local supplier managers need to better realize the importance of properly aligning interfirm governance mechanisms across different dimensions of asset specificity in offshore cooperative relationships. The modeling results suggest that proper combinations between asset specificity and interfirm governance mechanisms will contribute to effectively coordinating offshore cooperation. Thus, local supplier managers should consider adopting appropriate interfirm governance mechanisms that are relevant to different dimensions of asset specificity in an integrative manner.

Third, with regard to contract specificity, it is imperative for managers to realize that it is beneficial for local suppliers to maintain a moderate degree of PAS to achieve outstanding relationship performance in the presence of detailed binding contracts. In contrast, when PAS is already at a high level, detailed provisions should be avoided because the formal governance mechanism will strengthen the negative effect of PAS on relationship performance. By comparison, the benefit of enhanced relationship performance through the interaction between HAS and trust can be derived continually regardless of the level of HAS.

5.3. Limitations and future research directions

This study also has at least two major limitations. First, while, in this study, we decomposed asset specificity into two subdimensions to explore their impacts on relationship performance in offshore cooperation exchanges, other underlying dimensions of asset specificity, such as site asset specificity and procedural asset specificity, identified by Williamson (1991) and De Vita et al. (2010), should be examined in future research. In addition, it would be interesting to investigate whether PAS is more contractible than HAS or whether the contracting hazards are higher for HAS than for PAS. Second, apart from the direct effects of PAS and HAS, there may exist strong interaction effects between the two types of asset specificities, and they should be examined in future research.

Some of the hypotheses were not statistically supported, and we provide some speculations for further investigations. We predicted an inverted U-shaped relationship between HAS and relationship performance, but a positively linear relationship was revealed. The reason may be that when local suppliers invest in personnel training and learn to serve international buyers, the accumulation of specific knowledge helps local suppliers master new skills more quickly and successfully than other firms without this type of investment (Wang et al., 2018).

We also predicted that contract specificity may strengthen the inverted U-shaped relationship between HAS and relationship performance, but this prediction was not statistically supported. HAS manifests as intangible assets that tend to be embedded in the routines and culture of the local supplier (Hoetker & Mellewigt, 2009). This makes it difficult for HAS to be clearly described, evaluated, and written into the contract as a specific provision (Dyer & Singh, 1998). Thus, lacking concrete criteria as a reference point, contract specificity may become relatively ineffective for safeguarding local suppliers' HAS.

The statistical results did not support our proposition that trust strengthens the inverted U-shaped relationship between PAS and relationship performance. The reason may be that the establishment of trust-based governance mechanisms requires capital- and time-intensive investments, which are often costly activities (Lin et al., 2012); thus, trust building with international buyers becomes less relevant for coordinating PAS when the more efficient contractual governance mechanism is available.

6. Conclusion

In this study, we examined the effects of PAS and HAS on the performance of offshore buyer–local supplier relationships in China and the moderating effects of contract specificity and trust on the relationships between them based on a dataset collected from a sample of 162 dyads composed of local suppliers and international buyers. Our results reveal an inverted U-shaped relationship between PAS and relationship performance and a positively linear relationship between HAS and relationship performance. Contract specificity is found to positively moderate the linkage between PAS and relationship performance, whereas a higher level of trust is shown to enhance HAS's contribution to improved relationship performance. Therefore, local suppliers engaging in offshore business cooperations are required to meticulously design their specific capital and human asset investment strategies coupled with relevant governance mechanisms such as

contracts and trust vis-à-vis international buyers in light of continually improving relationship performance while minimizing the risks of lock-in in the longer term.

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