

The moderating effect of market knowledge on contractual efficacy: evidence from Asian supplier–Western buyer relationships

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The Moderating Effect of Market Knowledge on Contractual Efficacy: Evidence from Asian Supplier-Western Buyer Relationships

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Abstract

This study employs transaction cost logic to investigate effects of market knowledge on formal contracting. The model maintains that market knowledge moderates the effects of supplier specific assets and buyer specific assets on contracting in international buyer-seller relationships. We collected survey data from 131 international buyer-supplier relationships and applied regression analysis to test the hypotheses. The data suggest that the need for formal contracts diminishes when substantial supplier specific assets accompany high market knowledge. In contrast, the need for formal contracting increases when substantial buyer specific assets are combined with high market knowledge. This study provides new insights for B2B marketing literature by shedding light on the influence of market knowledge on formal contracts. The discussion addresses the study's implications for interorganizational theory and practice.

Key Words: Market knowledge; specific assets; formal contracting; international buyer-supplier relationships

Type of paper: Research paper

Introduction

Globalization permits firms to operate in markets beyond their borders and benefit from multiple business opportunities. For example, the world's leading clothing retailers such as Hennes & Mauritz (H&M), Mango, and Inditex Group, have established major supplier bases in China, Turkey, Bangladesh, and Pakistan. These supply chains enable retailers to take advantage of low-cost labor. H&M alone has 700 product suppliers located primarily in Asian and African countries that provide substantial employment opportunities for local populations. Such companies, however, must navigate international market transactional complexities related to institutional expertise, regulatory uncertainty and ambiguities, and socio-cultural differences (Ribbink and Grimm, 2014). When firms move beyond local markets, their lack of host market knowledge (Johanson and Vahlne, 2009) emerges as a critical constraint that increases uncertainty in international exchanges.

Iyer et al. (2019) emphasizes that knowledge about local markets, their functioning, and their capabilities enables firms to reduce uncertainty. When a firm has the necessary knowledge about its international markets, it is easier to translate business opportunities into successful results (Akerman, 2015a; Hilmersson and Jansson, 2012). Consequently, firms focus on cultivating organized knowledge about the markets in which they operate, the current trends, customer requirements, and competitors' activities that may reduce uncertainty. Market knowledge (market knowledge and foreign market knowledge are interchangeable terms) supports the internationalization of business and expansion into new markets where investments are exposed to considerable risk (Chollet et al., 2016; Cesinger et al., 2016). Market knowledge also refers to understanding of the cognitive, normative and regularity domain of local institutions in a foreign market (Zaheer and Zaheer, 2006). This construct reflects the knowledge about a market's business practices acquired through experience (Johanson and Vahlne, 2009). We therefore describe market knowledge as a firm's familiarity with foreign institutions, regulations and customs that influence the terms of trade for business-to-business relationships within a market.

When substantial specific assets are present in an international exchange relationship, comprehensive knowledge about the foreign market becomes even more vital because the possibility of opportunistic behaviour increases (Williamson, 1985). Transaction-specific assets (investments and assets are used interchangeably in this paper) are idiosyncratic investments made by a firm in a focal relationship. In the presence of substantial specific assets, small numbers bargaining conditions may arise and formal contracts become relevant (Williamson, 1985; 1991). Suppliers and buyers invest in specific assets to demonstrate their commitment to exchange relationships (Buvik and Haugland, 2005). When there is appreciable uncertainty, firms choose governance mechanisms designed to safeguard specific assets against exchange hazards (Liu et al., 2017; Jap and Ganesan, 2000). Selection

of appropriate governance mechanisms mitigates ex-post governance costs associated with transactional uncertainties due to monitoring and misalignments (Williamson, 1985).

Transaction cost analysis (TCA) suggests formal contracting provides an effective means for managing interfirm relationships when there is significant ambiguity. Formal contracting refers to the use of authority, rules, and procedures to coordinate relationships between independent parties (Poppo and Zenger, 2002). Noordewier et al. (1990) categorize contracts as being either explicit or implicit (Lusch and Brown, 1996). Explicit contracts identify specific roles for the parties and incorporate future contingencies, whereas implicit contracts reflect a mutual understanding between the parties to deal and interact with each other and manage future contingencies (Aulakh and Gençturk, 2008). Furthermore, finding an appropriate match between the degree of transactional uncertainty and contractual control mechanisms can improve the performance of interorganizational relationships.

Entering new markets exposes firms to high levels of uncertainty due to the diversity of how markets function, difficulties in predicting behavior and the actions of market actors, and a lack of information. This uncertainty is further augmented when markets are culturally diverse and have different institutional environments. In such conditions, formal rules help mitigate ex-ante and ex-post adaption challenges (Williamson, 1985). When specific assets are of an appreciable value, TCA calls for mechanisms to secure these investments. Formal contracting is one such mechanism, but the utility of contracts may vary depending on market knowledge. Better market insights enable the firm to use its assets more productively and preclude the need to design explicit contracts. Despite the importance of market knowledge to international buyer-supplier relationships, research provides little explanation of how market knowledge influences governance choices when substantial specific assets are present.

Prior empirical studies (e.g., Buvik and Reve, 2002; Buvik and Haugland, 2005; Shi et al., 2018; Wang et al., 2019) identify transactional attributes (e.g., uncertainty) that impact the relationship between specific assets and formal contracts. Earlier research, however, has not examined the moderating role of market knowledge on the relationship between specific assets and formal contracts. Our study addresses this gap and examines alternative methods of safeguarding specific investments in foreign markets.

Our study makes several valuable contributions to the relevant literature. First, this study extends the limited research on the role of market knowledge and its impact on the relationship between specific assets and formal contracts. Our study is among the first to consider market knowledge as an important transactional factor that impacts governance choices in international buyer-supplier relationships. Hence, our study provides new insight into the role of market knowledge in contractual governance and the dual role of specific investments.

Second, this study investigates the moderating role of market knowledge between idiosyncratic relationship-specific assets (supplier and buyer) and formal contracts. In doing so, this study explains how market knowledge influences the effectiveness of formal contracts in safeguarding asset-specific investments in international transactions. Previous research (e.g., Chen and Huan, 2020; Jin and Jung, 2016) has ignored the conditional role of market knowledge in contractual governance when bilateral specific investments are present in international buyer-supplier exchanges. In addition, prior studies (e.g., Shi et al., 2018; Wang et al., 2019) did not consider the contingent role of market knowledge on the efficacy of formal contracts in international relationships. Our empirical study shows that enhanced market knowledge mitigates exchange hazards and thereby displaces as well as enforces formal contracting as a governance mechanism.

Third, we contribute to TCA research by using market knowledge as a factor that highlights transactional uncertainty in international business relationships. Theoretically, market knowledge pertinency and specific assets determine the need for formal contracting. Hence, building on TCA literature, we argue the value of market knowledge as a reusable investment in international transactions whose scale influences the level of formal contracting. Existing buyer-supplier literature has primarily examined the efficacy of formal contracting in developed countries' research settings. Studying formal contracting effectiveness from suppliers in an emerging Asian market provides valuable insights into understanding the TCA logic regarding exposure to ex-ante and ex-post opportunism and the degree of reliance on formal governance mechanisms.

Fourth, we discuss the managerial implications of this research for global business managers that rely on contractual governance. Managers should develop market knowledge to design contracts that minimize potential opportunistic exploitation in cross-cultural buyer-supplier relationships. Better market knowledge is critical for closer managerial ties. This knowledge not only refrains partners from opportunism but also engenders trust.

In the remainder of this study, we review the relevant literature on market knowledge in business relationships, develop the conceptual model, and present our research hypotheses. We then describe a method for evaluating our proposed model, followed by empirical analysis. The subsequent discussion addresses the study's implications for interorganizational theory and practice.

Literature review

Market knowledge is a prominent concept (Johanson and Vahlne, 2009; Musteen et al., 2014) that is defined in several ways in international business relationships. Table 1 illustrates selected definitions of market knowledge. Earlier studies (e.g., Johanson and Vahlne, 1990) described market knowledge simply as a firm's knowledge about foreign markets. Subsequent researchers (e.g., Zhou, 2007) defined market knowledge as a broad knowledge of foreign market institutions, familiarity with formal and normative business practices, information

about potential competitors and customers, and other dynamic market conditions that could disrupt a firm's international business operations. Chen and Huan (2020) frame market knowledge as systematic, organized information a firm has of a foreign market's transactional structures, stakeholders, and other elements that influence business dealings and procedures. Consistent with prior research, this study defines market knowledge as a firm's degree of familiarity with a foreign market's institutions, regulations, business practices, and normative customs that affect international transactions.

[Table 1 near here]

Our empirical research underscores the role of market knowledge as an intangible resource (Zahoor and Al-Tabbaa, 2021) that provides a competitive advantage and facilitates successful outcomes in international markets (Tayauova, 2012). Prior studies have examined the role of market knowledge regarding the selection of external markets, internationalization, and entry models (e.g., Eriksson et al., 2000; Zhou, 2007; Erramilli and Rao, 1990), internationalization and the performance of SMEs (Williams et al., 2016; Jin and Jung, 2016; Musteen et al., 2014), sellers' performance in online markets (Lee et al., 2010), and export intensity (Li, 2004). Eriksson and Chetty (2003) show that a lack of market knowledge reduces a firm's performance, commitment, and ability to overcome complexities caused by cultural distance. Market knowledge is also applied as a way to understand market opportunities and threats (Endres et al., 2020), environments with a high level of uncertainty (Petrovici et al., 2020), new product performance (Dabrowski, 2019), the effect of technological newness on product performance (Jin et al., 2019), the internationalization of SMEs (Basle et al., 2018) and the impact of sustainability orientation on the success of new product development (Claudy et al., 2016). Table 2 summarizes a broad literature review on market knowledge.

[Table 2 near here]

Despite the vital role of market knowledge, our literature review shows that little is known about its efficacy as a governance mechanism, particularly in formal contracts for business-to-business (B2B) relationships. Zahoor and Al-Tabbaa (2021) argue that foreign market knowledge mediates the relationship between relational mechanisms and the speed of post-entry internationalization. Li et al. (2017) show that specific investments by both manufacturers and their distribution partners enhance market knowledge acquisition. Our literature review reveals that prior research has not examined the interplay between specific assets and market knowledge on the efficacy of formal contracts in emerging economies. Thus, examining the role of market knowledge and its

potential impact on the efficacy of formal contracts in B2B relationships provides valuable insights for academics and business managers.

In the presence of specific assets, contractual governance is preferred. For instance, Haugland et al. (2002) indicate that specific assets positively affect formalization, whereas Poppo and Zenger (2002) report that managers select more complex contracts when asset specificity increases. Wu et al. (2017) reveal a significantly positive relationship between specific assets and formal contracts involving innovation partnership projects in the high-tech industry in China. Other empirical studies (e.g., Svendsen and Haugland, 2011; Vázquez-Casielles et al., 2017) also find a positive relationship between specific assets and formal contracts in the European context. The findings of these studies underscore the TCA principle that the level of customized contracts increases when there is an increase in exchange hazards associated with specific investments. Lui et al. (2009) report a divergent result. They show that specific assets have an insignificant effect on formal contracts and a significant effect on trust (i.e., informal contracts) between Hong Kong traders and their Chinese suppliers. Zhou et al. (2008) also report that an increase in specific assets does not lead to greater reliance on customized contracts. These findings demonstrate the diminishing efficacy of formal contracts regarding specific investments. Such diverse findings show that the relationship between specific assets and formal contracts remains unsettled and, thus, demands further research.

Prior studies also identify factors that moderate the relationship between specific assets and formal contracts. Buvik and Haugland (2005) report a strong and positive effect of specific assets on contractual coordination in the presence of a long-term relationship. Other studies (e.g., Buvik and Reve, 2002) show that buyer power governs the relationship between specific assets and formalized contracting. Vázquez-Casielles et al. (2017) find that a distributor's cost-based and benefit-based dependence significantly strengthen the relationship between specific assets and formal contracts. Fernandez-Olmos (2011) illustrates conditions under which trust moderates the relationship between specific assets and formal contracts. Researchers use formal contracts and relational elements (trust, collaboration, continuity expectation) as moderators between the relationship between specific assets and other dependent variables such as relationship performance (Wang et al., 2019), opportunism (Shi et al., 2018), and negotiation costs (Artz and Brush, 2000). These studies show the roles of different moderators in providing governance stability under certain conditions when specific investments are present in an exchange relationship. Nevertheless, prior research has not examined the moderating role of market knowledge on the relationship between specific assets and formal contracts.

Theoretical background and hypotheses

Williamson (1991) maintains that international transactional complexities add to transactional costs and increase firms' exposure to opportunism. When transactions occur in an ambiguous environment, it is more challenging for transacting partners to postulate exchange conditions ex-ante and easily verify performance ex-post (Rindfleisch and Heide, 1997). Therefore, an absence of appropriate market knowledge intensifies the uncertainty surrounding a transaction and raises risk and transactional cost levels.

To varying degrees, firms entering international markets invest in assets that have limited value outside of their intended use. For example, firms invest in production equipment, resources, materials, and procedures that are idiosyncratic to their relationship with a foreign channel partner. When suppliers make specific investments to conform to the need of transaction partners, they are referred to as supplier specific assets (Buvik and Haugland, 2005). As these assets increase, firms develop control structures designed to secure their investments. For example, Anderson and Coughlan (1987) illustrate conditions under which investments in specific assets influence semi-conductor company decisions to integrate the distribution function. Formal contracts serve as a means of securing the value of such sunken investments. As dedicated assets increase, firms increasingly rely on formal contracting to ensure their productive use (Rindfleisch and Heide, 1997).

Although formal contracting serves as one means of securing assets, firms can also utilize institutional knowledge of the local market to secure their investments. If firms have little familiarity with the local market, this amplifies uncertainty, opportunism, and transactional costs. By contrast, broad market knowledge enables a firm to employ governance tools that benefit from legitimacy with the market's institutional and regulative structures. Firms face many dynamic challenges when they enter a new market (Yang et al., 2012), not least of which is unfamiliarity with the local institutions' rules, procedures, and normative dimensions. This unfamiliarity curtails a firm's ability to decode and evaluate the available market related information. These challenges underscore the importance that market knowledge plays in reducing ambiguity in the institutional environment (Scott, 2013).

When Asian firms enter Western markets, they strive to understand and adapt in accordance with the market's institutional environment and norms. Institutional settings include governing legal institutions, normative institutions, and cultural-based cognitive norms (Jia and Wang, 2013; Zaheer and Zaheer, 2006). TCA argues that increases in institutional distance yield higher ambiguity and reduced relational efficiency (Williamson, 1985). Akerman (2015b) maintains that enhanced transactional knowledge about the host market increases familiarity and thereby reduces levels of uncertainty and risk. As firms gain more experience about how host markets function and their transactional partners, the risk of opportunism wanes, and high control modes such as contracts become less necessary (Maekelburger et al., 2012). Such results augment the transaction cost

perspective that enhanced local market knowledge fosters trust between partners, reduces the propensity for opportunism, and limits the need for formal, contractual-based safeguards.

Research identifies circumstances under which informal governance is more effective than formal governance (Fuentelsaz et al., 2019; Peng et al., 2009; North, 1990). Better knowledge of Western market institutions allows Asian suppliers to diminish their ex-ante and ex-post exposure to opportunism, helps to develop relational rent, and provides firms with advantages such as lower marketing costs, smoother negotiation conditions, and easier adaptation to local market practices (Calantone et al., 2006). Svendsen and Haugland (2011) similarly show that Western firms build stronger relationships with their Asian counterparts over time, and personal trust gradually replaces institutional trust and contractual governance. Over time, market knowledge supplants formal contracting as a means of protecting against trading hazards. Shen et al. (2019) similarly argue that recurring interactions between transacting partners yield familiarity with transaction features and relationship requirements, reducing the need for formal contracting (Cao and Lumineau, 2015). Therefore, we propose:

H1: Market knowledge negatively moderates the relationships between supplier specific assets and formal contracting in international buyer-supplier relationships.

The lack of foreign market knowledge becomes less problematic as a firm increases its market commitment (Johanson and Vahlne, 1977). When Western firms invest in specific assets to demonstrate long-term commitment to their Asian partners, they become exposed to the unreliable enforcement regimes typical of legal and regulatory codes in the Asian context (Cai et al., 2010). Western buyers know that in Asian contexts, firms rely more on informal governance mechanisms such as relational ties (Zhou and Poppo, 2010) and personal relationships, even when substantial specific assets are present in a relationship (Zhou, Poppo, and Yang, 2008). Buyer specific assets refer to the investments deployed by a buyer in specific assets and skills in a particular exchange partner (Buvik and Haugland, 2005). Morgan and Hunt (1994) highlight the vital role of relational norms and relational trust in governing inter-company exchanges. Bounded rationality, however, precludes Western firms from anticipating all possible transactional hazards that may lead to opportunism (Williamson, 1985). Further, formal contracts may also function as a yardstick to solve any ex-post transactional inconsistencies.

Consistent with TCA, formal contracts safeguard specific assets and reduce ex-post transaction costs and opportunistic tendencies associated with bargaining, monitoring and maladaptation propensities (Williamson, 1985). Formal contracts lessen the direct costs of managing relationships and reduce the opportunity costs associated with inferior governance decisions (Williamson 1991). In the presence of deficiencies in contractual compliance, formal contracts provide Western buyers with safety mechanism that enable them to renegotiate

critical business transactions (e.g., order quantities, delivery requirements) without increasing haggling or coordination costs (Dahlstrom and Nygaard, 1999; Rindfleisch and Heide, 1997).

Following the TCA logic, Western buyers would feel more comfortable relying on formal contracts to restrain Asian partners from ex-post opportunism and limit higher transaction costs in the presence of buyer-specific assets. Explicit contracts provide Western buying firms with efficient mechanisms to protect themselves from exchange hazards (i.e., opportunism) that may arise due to inferior market knowledge and specific investments (Williamson, 1985). Malhotra and Lumineau (2011) underscore that formal contract reflects exchange partners' intention to foster relationship profitability and nurture goodwill trust. Defined roles and obligations of formal contracts ensure procedural impartiality if either exchange partner fails to fulfill their agreed ex post obligations (Lumineau, 2017; Poppo and Zenger, 2014). Asian supplier knowledge of the buyer's market facilitates the design of contracts that limit exposure to opportunism. This implies that a combination of having better market knowledge accompanied by the presence of explicit contracts provides a more robust safeguard against exchange hazards when specific investments are present. Western buyers also know that strong legal contracts with Asian partners provide needed stability in the relationship and help form interorganizational trust (Sheng, Zhou, and Li, 2011). Western buyers require greater reliance on formal contracting to safeguard their specific investments. As market knowledge increases, it strengthens the relationship between buyer specific assets and formal contracting. Therefore, we propose:

H2: Market knowledge positively moderates the relationship between buyer specific assets and formal contracting in international buyer-supplier relationships.

[Figure 1 near here]

Figure 1 illustrates the research model. Hypothesis 1 posits that market knowledge negatively moderates the association between supplier specific assets and formal contracts, while hypothesis 2 suggests that market knowledge positively moderates the association between buyer specific asset and formal contracts. Sales volume and firm type are included as control variables to enhance the robustness of our model.

Empirical setting, measurements, and analysis

We selected Pakistani textile exporting firms to test our model. This empirical setting was selected for several reasons. First, Pakistani textile exporting firms hail from an emerging economy that exported a major portion of their textile's products to the European Union, United States, and other markets. Second, the questionnaire collected data from all small and large business groups in Pakistan, including all the publicly listed textile firms on the local stock exchanges. On average, the participating firms annually exported a major part of their production

output. Third, the participating firms' and their key respondents (export managers) familiarity with the research context bolsters the authenticity of our data set.

The unit of analysis is the relationship between a Pakistani textile exporter and its most important Western customer. After several personal visits and face-to-face meetings with respective firms' export managers, a total of 198 textile-exporting firms were selected. On average, the selected firms have been continuously exporting a significant part (> 40%) of their total annual production output for at least eight years. A questionnaire facilitated collection of primary data via the key informant approach (Heide and John, 1992). The informants were working as export managers and well conversant with the research problem. The typical informant had worked with international customers for more than five years and had good English skills. As administering data collection through mail or e-mail results in a low level of participation in emerging economies, the questionnaire was delivered personally. From the selected 198 textile units, we received 137 administered questionnaires. Six (6) of these received questionnaire were not correctly completed. The remaining 131 fully completed questionnaires equate to a response rate of 66%.

Measures

The survey provided measures of the independent and control variables. *Formal contracting* refers to the extent to which a relationship is governed by formal contractual rules, procedures and instructions. Four items from previous studies (Cannon et al., 2002; Svendsen and Haugland, 2011) provided the metrics. *Supplier specific assets* (SSA) refer to investments by exporters in physical assets, material development, quality measures, and procedures dedicated to the importer. *Buyer-specific assets* (BSA) refer to investments and adjustments implemented by the buyer for training, improving production procedures, and human resources linked to the relationship. The items for SSA and BSA were based on Heide and John (1990), and Buvik and Haugland (2005). *Market knowledge* (MAK) employed four items from Eriksson et al. (2000) and Zhou (2007) that assess the understanding of exporters of business regulations, competitors, and host market institutions.

Two control variables were incorporated in our model to check its robustness. We included *annual sales volume* (ASV) because it reflects the stake and leverage of a business partner (Heidi and John, 1992) that may influence the governance structures used in business relationships. The model incorporated the natural logarithm of the supplier's annual dollar sales to the focal buyer. We also incorporated *manufacturing firms* (MFs) to capture the possible effect of a manufacturing firm on governance (Heide and John, 1990).

For reliability analysis, each of the multi-item constructs was analyzed by inspecting the item-to-total correlation. Exploratory factor analysis justified elimination of items that evinced low or insignificant loadings

on their presumed constructs. Confirmatory factor analysis via AMOS 26 supported the unidimensionality and internal consistency of the metrics. The fit indices were within the acceptable limits ($\chi^2/df = 1.45$, $p=0.00$, GFI=0.90, CFI=0.97, IFI=0.97, TLI=0.96, SRMR = 0.069, and RMSEA=0.059). Composite reliability and average variance extracted for all items were also within acceptable limits (see Table 3). The overall statistics evince a reasonable fit to the four-factor solution.

[Table 3 near here]

We applied non-statistical and statistical tools to counter common method variance. Non-statistical measures allow researchers to enhance the quality of the assessment (Murphy et al., 1993). First, our dependent and the independent variables were buyer specific that did not require the respondents necessarily to respond positively. Second, as a construct, formal contracts did not urge our respondents to reply about its efficacy in a positive manner. Third, in contrast to a good versus bad continuum, we asked respondents to rate the independent variables (SSA, BSA and MAK) in a comparative manner.

Next, we applied statistical tools measures to examine the possibility of common method variance (Podsakoff et al., 2003). First, we conducted Herman's one-factor test for the variables used. If there is a possibility of a significant common method variance, one general factor would emerge that accounted for most of the covariance (>50%) among the variables. The single factor model that accounted for 37% of the total variance suggests that common method variance is not an appreciable issue. Next, we applied a second technique, the common latent factor (CLF) test, as additional evidence that CMV does not affect our model's results meaningfully. We introduced a new latent variable and related all manifest variables to it. The common variance is estimated as the square of the common factor of each path. We retained the common latent factor while imputing latent variables as a preventive measure for common method bias. Our model's common heuristic CLF is 16%, which is below the maximum threshold of 50% (Eichhorn, 2014). Thus, common method bias is not a critical issue in our data.

The average variance extracted from all constructs exceeds 0.50 and supports convergent validity. A comparison of a constructs' average variance extracted (AVE) with the shared variance between any pair of constructs offers evidence of discriminate validity (Fornell and Larcker, 1981). The bold values in the diagonals of the correlation matrix (see Table 4) are the square root of the AVEs. Discriminant validity is supported given that the square root of the AVE of each construct is more than the correlation between any pair of constructs. Comparison of the AVEs of each pair of constructs and the shared variance between them suggests that each construct is distinct from the others.

[Table 4 near here]

Empirical analysis and results

We applied hierarchical regression to test our hypotheses. We mean-centered the interacting constructs to avoid multicollinearity problems associated with the interaction effect. The highest VIF score was 1.836, indicating that multicollinearity was not a serious problem. Table 5 shows the results. In the first step, we added control variables as a block (Model 1). Secondly, we introduced the moderating variable and the block of independent variables (Model 2). Finally, we added the block of interaction (Model 3), i.e., the moderating effect of market knowledge on the relationships between supplier specific assets, buyer specific assets, and formal contracts. Our results show that market knowledge negatively moderates the relationship between supplier specific assets and formal contracts ($b = -0.138, t=2.820, p < 0.01$), supporting H1. Market knowledge positively moderates the relationship between buyer specific assets and formal contracts ($b=0.095, t=2.131, p < 0.05$), thereby supporting H2.

[Table 5 near here]

The effects of control variables: The results also show support for the effect of sales volume and type of firm (manufacturing) on formal contracting. Annual sales volume has a positive association with formal contracting ($b = 0.113, t = 2.731, p < 0.01$) which supports the basic economic stakes argument in exchange relationships. Business relationships with manufacturing firms are negatively related with formal contracting ($b = -0.395, t = -2.683, p < 0.01$). Taken together, the predictor variables maintain exploratory power when relevant control variables are implemented, demonstrating the satisfactory robustness of the model.

Analysis of moderation effects

When analyzing moderation hypothesis, inspecting the signs and magnitudes of the coefficients of interaction terms in the moderated regression model (Model 3 in Table 5) is not sufficient. Therefore, we performed partial derivative of Model 3 with respect to supplier specific assets (H1) and buyer specific assets (H2), and got the following equations:

$$\text{For H1: } \frac{\partial FC}{\partial SSA} = 0.162 - 0.138MAK \dots\dots\dots (i)$$

$$\text{For H2: } \frac{\partial FC}{\partial BSA} = -0.032 + 0.095MAK \dots\dots\dots (ii)$$

We employed partial derivative graphs (Schoonhoven, 1981) and a point technique (Hayes, 2013) approach for assessing the interaction effects. By using the X and Y intercept approach, we graphed equation (i) and (ii), illustrated in Figure 2a and 2b. These figures show that market knowledge reduces the effect of supplier specific assets on formal contracts (Fig 2a), while it enhances the effect of buyer specific assets on formal contracts (Fig. 2b).

Furthermore, the line graphs intercept values on the market knowledge axis in figure 2a (MAK=1.174) and figure 2b (MAK=0.337) falls between the minimum and maximum values of market knowledge in the sample after mean centering (Min=-4.37; Max=1.63).

[Figure 2a near here]

[Figure 2b near here]

Hence, one can conclude that both supplier specific assets and buyer specific assets have non-monotonic effect on formal contracts over a given range of market knowledge. That is, the effect of supplier specific assets on formal contracts changes from positive to negative within the observed range of market knowledge (H1), while that of buyer specific assets investment changes from negative to positive (H2). We conducted further analysis on the moderating effect of market knowledge illustrated in figures 2a and 2b by using the pick-a-point approach (Hayes, 2013). This technique tests the significance of the moderation effect at two and one standard deviations below and above the average market knowledge. Table 6a and 6b present the results. Consistent with the partial graph analysis in figure 2a, Table 6a shows that supplier specific assets have a significant decreasing positive effect on formal contracts at very low level (-2σ below the mean) to mean level of market knowledge. However, this effect diminishes and becomes insignificantly negative at high levels of market knowledge. In contrast, buyer specific assets have significant decreasing negative effect on formal contracts at very low level (-2σ below the mean) to moderate levels of market knowledge (Table 6b). This turns positive at high levels of market knowledge.

[Table 6a near here]

[Table 6b near here]

Discussion

Theoretical implications

Our study examines the alternatives to formal contracting in safeguarding specific assets in foreign markets. The study examines the moderating effect of market knowledge on the relationship between specific assets and formal contracts. Market knowledge lowers the effect of supplier specific investments on formal contracting, yet it increases the effect of buyer specific investments on formal contracts. Our results are consistent with earlier studies (e.g., Malhotra and Lumineau, 2011; Mayer and Bercovitz, 2008) recognizing that the transactional environment influences formal contracting. These formal contracts act as a safeguarding mechanism to counter

opportunism and also provide a coordination strategy. This study also supplements recent research (Shen et al., 2020) suggesting that contracts ensure business transactions through safeguarding and coordinating action.

Our paper contributes to the interorganizational research in several ways. First, the study underscores the importance of the contrasting influences of idiosyncratic relationship-specific assets and re-deployable market knowledge. Over time, better market knowledge about host markets and customers reduces uncertainty and helps to establish relationship-specific trust between business partners. This study contributes to TCA by treating market knowledge as a type of re-deployable investment that enables a firm to gain insight into the dynamics of a market. Investments focused on assessing a partner's market challenges may be re-deployable in other relationships. Uzzi (1997), for instance, characterizes local market knowledge gleaned in the New York City garment district. During the order execution processes, suppliers collect market information and routines from buyers, and in many cases, the local market knowledge obtained is re-usable in other relationships (Uzzi, 1997). In our study, when Asian firms (e.g., suppliers/exporters) enter foreign markets, they invest in relationship-specific and re-deployable assets designed to increase the effectiveness of an exchange.

Second, this study contributes theoretically to the transaction cost research by highlighting the conditions under which transaction-specific assets may modify the need for formal contracts, even if the specific assets are of a high value. As Asian firms get better market knowledge about Western markets and their institutions, they enhance their ability to understand the attributes critical to effective governance. Better knowledge of Western markets and their functions also reduces the exposure of Asian suppliers to opportunism. In addition, Asian suppliers develop interorganizational and interpersonal trust as the business relationship progresses, further reducing the need for stringent contracting. In contrast, better market knowledge increases the need of Western buyers for stringent formal contracting. The stronger reliance that Western firms place on formal contracts underscores their preference for legalism as the optimal way to safeguard specific assets in a weak legal environment. Western buyers prefer contractual governance's legal stability and reliability even if personal trust develops between partners.

Third, our study contributes to the theoretical logic of formal contracting. Prior studies (e.g., Shen et al., 2020) outline the efficacy of formal contracts under different conditions in international iterated transactions (Rindfleisch and Heide, 1997). There is, however, a paucity of literature in which empirical studies examine the impact of host market knowledge on formal governance. This governance pattern is most evident when market knowledge is limited. Transacting parties emphasize the need for formal contracting because it provides mechanisms for constraining ex-ante market information asymmetries and ex-post trading hazards. Over time, iterated interactions provide better market knowledge that lowers the perceived uncertainties associated with

international trade and attenuates the need for comprehensive contracting. Hence, our study broadens contractual governance research (e.g., Zhou and Xu, 2012) by showing how an understanding of host markets influences the efficacy of contractual governance.

Fourth, our results demonstrate the strength of market knowledge in reducing uncertainty in international business relationships. Our findings also support prior studies (e.g., Peng et al., 2009) reporting how local market arrangements (institutional structures) affect the selection of governance mechanisms. The findings also corroborate the work of Burkert, Ivens and Shan (2012), demonstrating that the choice of governance mechanisms depends on the degree of familiarity a firm has with the international environment in which it is doing business. In addition, the results complement the work of Poppo and Zenger (2002) by identifying the conditions under which informal governance mechanisms serve as supplements to formal contracting.

Managerial implications

Our paper highlights some managerial implications, especially those related to international contractual relationships. First, international firms face a dual challenge of investing in their trading partners and developing market knowledge. Managers should establish adequate market knowledge before choosing mechanisms to govern buyer-supplier relationships when feasible. This choice becomes more critical when substantial specific assets are present in a relationship. In any new international transaction environment, formal contracts can provide safeguards against opportunism and foster new business opportunities. However, business managers need to differentiate among governance mechanisms according to their familiarity with the local business environment.

Second, managers must recognize that market knowledge in international buyer-supplier relationships boosts trust between the transacting parties and facilitates the resolution of conflicts caused by uncertainty. The value of knowledge creation and sharing is ever more important in international business. Knowledge sharing between buyers and suppliers is a critical success factor in relationship marketing (Möller & Svahn, 2004). Knowledge gained in relationships with buyers or suppliers helps firm managers enhance the benefits of a relationship and develop and sustain their competitive advantages (Dyer & Singh, 1998; Lipparini, Lorenzoni, & Ferriani, 2014; Rungsithong & Meyer, 2020). Managers should also recognize that knowledge sharing exposes the firm to opportunistic behavior (Becerra, Lunnan, & Huemer, 2008; Estrada, Faems, & de Faria, 2016; Rungsithong & Meyer, 2020). Managers should recognize that contractual governance is critical, especially when the exchange relationship involves investments in specific assets. When firms have a solid understanding of the working pattern of a market and specific knowledge of a trading partner, they can manage relationships without

elaborate contracts consistent with Uzzi (1997). Hence, managers have the possibility to develop and implement better conflict management strategies, an important managerial insight.

Third, although our study did not explicitly consider the role of culture, our study's context of Asian supplier and Western buyer business relationships embody cultural issues that cannot be overlooked. The importance of culture in understanding managerial behavior in cross-cultural contexts lies in its shaping force that culture shapes our repertoire of habits and styles and informs us how to behave in certain situations (Geertz, 1973; Triandis, 1995). The gradual development of trust and legitimacy is emphasized in developing business relationships with firms and individuals representing collectivist cultures (Möller & Svahn, 2004). Whereas many western firms prefer explicit contracts, many Asian firms are less likely to favor detailed contracts. Our study suggests that Asian sellers' knowledge of the foreign market enables them to implement contracts contingently based on the levels of buyer and seller assets. The seller's knowledge of the foreign market and their idiosyncratic investments lead to lower use of contracting, yet appreciable levels of seller knowledge and buyer specific assets favor development of detailed contracts. Managers should recognize that increasing the reliance on trust-based networks dissuades Asian firms from entering into formal contracts as a relationship matures in cross cultural settings.

Finally, our goal was to examine alternative methods of safeguarding specific investments in foreign markets. Entering new markets exposes firms to high levels of uncertainty due to the diversity of how markets function, difficulties in predicting behavior and the actions of market actors, and a lack of information. This uncertainty is further augmented when markets are culturally diverse and have different institutional environments. In such conditions, formal rules help mitigate ex-ante and ex-post adaption challenges (Williamson, 1985). When specific assets are of an appreciable value, TCA calls for mechanisms to secure these investments. Formal contracting is one such mechanism, but the utility of contracts may vary depending on market knowledge. Better market insights enable the firm to use its assets more productively and preclude the need to design explicit contracts. In our milieu, both Asian suppliers and Western buyers make specific investments in their mutual relationships, demonstrating credible long-term commitments. Exchange partners rely on formal contracts to ensure compliance and manage conflicts to protect their specific assets and mitigate the difficulties associated with uncertainty in host markets. Over time, the investing partners develop better knowledge about how their host markets function and use this information to determine the safeguarding capabilities of formal contracts. Our study illustrates the unique international business context of Pakistani business setting in relation with Western buyers and shows how the use of formal contract diminishes when substantial supplier specific assets are

combined with high market knowledge. In contrast, the need for formal contracting increases when substantial buyer specific assets are combined with high market knowledge.

Hence, our findings emphasize that managers should develop the required market knowledge to plan specific contracts that minimize potential opportunistic exploitation in cross-cultural buyer-supplier relationships. Better market knowledge is critical for closer managerial ties. These relationships not only refrain partners from opportunistic behaviors but also help develop trust.

Limitations, future research, and conclusion

The findings presented here should be tempered by the study's inherent limitations. Relationships emerge over time, yet the data do not capture the evolution of inter-firm interactions. A longitudinal design would facilitate analysis of the development of relationships and enable the researcher to observe transitions in governance mechanisms. Another limitation of the study is the monadic data from the suppliers. Future studies could enhance these findings by measuring perspectives from both sides of the dyad. Collection of dyadic data would also provide insight into how importers (buyers) perceive the importance of market knowledge, formal contracting, and asset specificity.

The absence of a measure of uncertainty is an additional limitation of this study. This condition restricts the study's ability to test firm-level effects of marketplace uncertainty on contracting. Nevertheless, by interpreting low and high levels of market knowledge, we have indirectly measured the efficacy of uncertainty on formal contracts at the firm level. Future studies might add international and country experience as control variables to strengthen the validity of our results. This study used Pakistani textile manufacturers' relationships with their Western partners as the context for international supplier-buyer relationships. This study did not aim to generalize the findings of this specific context to all international business relationships between Asian and Western business partners. Therefore, to increase the study's external validity, we suggest more contextual studies of Asian supplier-Western buyer relationships from other Asian countries to validate our findings.

International buyer-supplier relationships offer multidimensional benefits to business partners. The goal of this study has been to examine the role of market knowledge in international interorganizational relationships. We have illustrated conditions under which market knowledge dynamically interacts with firm specific investments to influence the level of formal contracting. We hope this study contributes to the theory and practice of addressing international buyer-seller relationships.

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Table 1. Selected Definitions of Market Knowledge (Foreign Market Knowledge)

Studies	Defining Foreign Market Knowledge or Market Knowledge
Johanson and Vahlne, 1990	<i>Foreign market knowledge</i> - The firm's knowledge about foreign markets.
Eriksson et al.,1997. Zhou, 2007	<p><i>Foreign market knowledge</i> - It is the knowledge base that facilitates the firm to survive and continue its business in the international market. Three knowledge bases need to be established within the firm, i.e., foreign business knowledge, foreign institutional knowledge and internationalization knowledge.</p> <p><i>Foreign business knowledge</i> assists firms to develop a knowledge base of potential competitors, customers, emerging and existing market conditions; <i>Foreign institution knowledge</i> delivers information on new/foreign cultures, values, norms, formal and informal institutional rules and regulations; and <i>Internationalization knowledge</i> develops the ability of the firm to respond to risk or refers to the knowledge of adaptability, international operations and international market engagement.</p>
Li and Calantone, 1998	<p><i>Market knowledge</i> - Organized and structured information about the market, including customer needs, market trends, and competitors' behavior.</p> <p><i>Organized market knowledge</i> is the result of systematic processing (as opposed to random picking), while <i>Structured market knowledge</i> implies that knowledge is endowed with useful meaning (as opposed to discrete items of irrelevant data).</p>
De Luca-and Atuahene-Gima, 2007	<i>Market knowledge</i> - The firm's knowledge of the needs and behavior of its customers and competitors.
Hilmersson, 2014	<i>Market knowledge</i> can be both <i>specific</i> and <i>general</i> . Specific market knowledge relates to the characteristics of a certain host country, whereas general market knowledge relates to international methods and procedures.
Akerman, 2015a	<i>Institutional market knowledge</i> refers to the laws and norms of a foreign market and the practices of the regulatory system. It also includes understanding the rules for imports and exports, and the language and culture.
Chen and Huan, 2020; Chen and Lee, 2017	<i>Market knowledge</i> is defined as systematic and organized information about customers, suppliers, competitors and other stakeholders that result from a firms' business relationships.

Table 2. Selected Studies on Market Knowledge (and Foreign Market Knowledge)

Author	Independent Variable	Dependent Variable	Key Findings
Petrovici et al., 2020	Tacit market knowledge, market knowledge volume.	Product innovation performance (PIP)	Market knowledge volume and specificity consequently have a direct effect on PIP. Tacit market knowledge is positively moderated by market uncertainty and is most impactful in high uncertainty environments.
Mostafiz et al., 2021	Dynamic managerial capability (DMC), managerial human capital, managerial social capital, managerial cognition as an antecedent of foreign market knowledge accumulation (FMK).	Financial and non-financial performance	Managerial social capital and managerial cognition positively effect FMK accumulation. FMK accumulation fully mediates the relationship between managerial social capital and financial/non-financial performance, and between managerial cognition and financial/non-financial performance.
Chen and Huan, 2020	Specific assets, knowledge integration mechanisms, complementary capability as market knowledge antecedents.	Market performance	All antecedents affect market knowledge and indirectly affect market performance. Market knowledge significantly and positively affects market performance.
Jin et al., 2019	Technological newness and market newness, mediating role of market breadth, tacit market knowledge.	New product performance	Market knowledge breadth enhances the effect of technological newness on product performance, whereas tacit market knowledge weakens the effect of technological newness but enhances the effect of market newness on new product performance.
Li et al., 2017	Dyadic specific investments, manufacturer absorptive capacity as a moderator.	Market knowledge acquisition	Dyadic specific investments both independently and interactively enhance manufacturers' market knowledge acquisition from their distributors. Manufacturers' absorptive capacity positively moderates the effect of SIs on manufacturers' learning from distributors.
Chen and Lee, 2017	Investigates market knowledge with regard to four characteristics: depth, breadth, tacitness, and specificity.		Emergence of four market knowledge categories: customer knowledge, partner knowledge, employee knowledge, and competitor knowledge, which correspond to the dimensions of market knowledge breadth, depth and tacitness.
Stoian, Rialp, and Dimitratos 2017	Interorganizational networks, foreign market knowledge, innovative behavior.	International performance	Interorganizational networks positively influence the accumulation of foreign market knowledge in internationalized SMEs. Foreign market knowledge will improve the international performance and innovative behavior of international SMEs.
Bai, Johanson and Martín, 2016	Returnee entrepreneurs' international experience, International market knowledge, International market commitment.	Level of internationalization	Returnee entrepreneurs' international experience nurtures the international market knowledge of returnee entrepreneurial firms, and has a positive effect on international market commitment and the level of internationalization. Returnee entrepreneurs' international experience does not directly influence key internationalization constructs such as international market commitment and level of internationalization. Instead, firms' international market knowledge mediates the influence of returnee entrepreneurs' international experience on the firms' internationalization levels.
Jin and Jung, 2016	Personal networks, business networks.	Market knowledge (also as a mediator),	Business networks increase foreign market knowledge, which heightens the international performance of SMEs. This confirms the mediating

		International performance	role of market knowledge between business networks and international performance. Personal networks provide little support in helping SMEs achieve foreign market knowledge and international performance.
Åkerman, 2015a	Business network knowledge, institutional knowledge, international diversity, international depth.	International opportunity realization	Knowledge about local business networks is more important for realizing international opportunities than knowledge about the local institutional context.
Åkerman, 2015b	Four sources of knowledge are used: direct experience, indirect experience, external search, and internal information in combination with endogenous, passive, diversified and exogenous learners.	Market-related knowledge is classified as business knowledge and institutional knowledge	The knowledge acquisition strategy in a local market is a key determinant in a firms' level of market knowledge. Firms with a passive strategy have less market knowledge. Firms that focus on internal or external sources hold equal levels of market knowledge. Firms actively utilizing all available sources have the highest levels of market knowledge.
Zhou and Li, 2012	Knowledge breadth, knowledge depth, market knowledge acquisition, knowledge sharing.	Radical innovation	A firm with a broad knowledge base is more capable of developing radical innovations in the presence of internal knowledge sharing rather than external-focused market knowledge acquisition, whereas a firm with a deep knowledge base is better able to achieve radical innovation through enhanced market knowledge acquisition rather than internal knowledge sharing.
Bao, Sheng, and Zhou, 2012	Knowledge breadth, knowledge depth.	Product innovativeness	Whether market knowledge facilitates or hinders product innovativeness depends on the degree of knowledge scope and the depth of market sense derived from network contacts. The effect of market knowledge breadth is U-shaped, suggesting that it does not have a positive effect until it exceeds a threshold. The effect of market knowledge depth follows an inverted U-shaped curve, indicating that knowledge depth starts to cause an adverse effect on product innovativeness after it crosses a threshold.
Lee et al., 2010	Quality of market knowledge (relevance, complementarity, and currency), market knowledge utilization, supplier IT capabilities (as moderators).	Performance in on-line markets	Market knowledge (relevance, complementarity, and currency) has a positive effect on a sellers' utilization of market knowledge, which in turn improves the sellers' performance. Supplier IT capabilities moderate market knowledge utilization and performance in on-line market relationships.
De Luca and Atuahene-Gima, 2007	Market knowledge breadth, market knowledge depth, market knowledge tacitness, market knowledge specificity, cross-functional collaboration.	Product innovation performance	Market knowledge depth, specificity and cross-functional collaboration affect product innovation performance through knowledge integration mechanisms. Market knowledge specificity and cross-functional collaboration are only potential resources and may not be inherently valuable for product innovation performance.
Li, 2004	Structural social capital, relational social capital, foreign market knowledge.	Export intensity	Structural and relational social capital affects the creation of foreign market knowledge, and foreign market knowledge enhances export intensity.
Marinova, 2004	Market knowledge diffusion (market knowledge, changes in market knowledge, and shared market knowledge).	Innovation efforts	Simple possession of accurate knowledge about customers and competitors does not lead to enhanced innovation. Instead, changes in market knowledge and shared knowledge assume key roles in transforming market knowledge into innovation.

Table 3. Items of the constructs

Constructs	The constructs' items measured on 7-Point Likert-type scales with end points indicating strongly disagree and strongly agree
Supplier specific assets $\alpha=0.91$, AVE=0.72 CR= 0.91	SSA1: Our firm has invested extensively in production equipment to fulfil the order required for this customer. SSA2: Our firm has invested a lot of time and resources to get the required export quality standards for this customer. SSA3: Our firm has made significant investments in developing specific material used solely for this customer. SSA4: Our firm has developed special business procedures and guidelines used mainly for this customer.
Buyer Specific assets $\alpha=0.80$, AVE=0.58 CR= 0.80	BSA1: This buyer has invested in our firm to develop reliable international quality standards. BSA2: This buyer has invested time and money into our firm to qualify as its main supplier. BSA3: This buyer has invested in dedicated human resources to maintain our relationship.
Market Knowledge $\alpha=0.90$, AVE=0.65 CR= 0.90	Our firm has well-developed knowledge about.... MAK1: business laws and regulations in this customer's market. MAK2: routine business norms in this customer's market. MAK3: foreign competitors in this customer's market. MAK4: government institutions in this customer's market.
Formal Contracting $\alpha=0.77$. AVE=0.53 CR=0.80	FC1: We use a written contract that specifies the tasks and responsibilities of each party. FC2: For important issues, we follow the rules and procedures written in the contract. FC3: It is important for us to behave formally according to the written contract. FC4: Overall, both partners will follow the rules and regulations of the written contract.

Table 4. Descriptive Statistics and Zero Order Correlation

	VIF	Mean	Std.D	1	2	3	4	5	6	7
1. Formal Contracting (FC)	-	5.79	0.99	0.73^a						
2. Market Knowledge (MAK) ^b	1.384	0.00	1.21	0.39**	0.84^a					
3. Supplier Specific Assets (SSA) ^b	1.534	0.00	1.41	0.34**	0.24**	0.84^a				
4. Buyer Specific Assets (BSA) ^b	1.836	0.00	1.68	0.24**	0.35**	0.55**	0.76^a			
5. MAK*SSA	1.310	0.40	1.68	-0.18*	0.03	-0.02	0.20			
6. MAK*BSA	1.554	0.70	2.01	0.01	-0.25**	0.20*	0.26**	0.42**		
7. Annual Sales Volume (ASV)	1.084	14.76	1.80	0.18*	-0.01	0.03	0.20	-0.02	-0.04	
8. Manufacturing Firm (MFs)	1.020	0.41	0.49	-0.17	0.04	0.05	0.09	0.08	0.03	0.09

Notes: Notes: * $p < 0.05$ (2-tailed); ** $p < 0.01$ (2-tailed); ^aSquare root of AVE of the respective construct. ^bMean values are centered except for formal contracting; VIF means variance inflated factors

Table 5: Hierarchical Ordinary Least Squares Multiple Regression Model of Antecedents to Formal Contracting

Variables	Estimates of variables and Statistics					
	Model 1		Model 2		Model 3	
	b	t-Values	b	t-Values	b	t-Values
<i>Control variables:</i>						
(Constant)	4.354	6.275***	4.313	6.874***	4.268	6.882***
Log Annual Sales	0.108	2.298*	0.112	2.642**	0.113	2.731**
Manufacturing Firm (MFs)	-0.368	-2.154*	-0.416	-2.754**	-0.395	-2.683**
<i>Main effects and Moderator:</i>						
Market Knowledge (MAK)^c			0.286	4.362***	0.342	4.876***
Supplier Specific Assets (SSA)^c			0.208	3.278***	0.162	2.556**
Buyer Specific Assets (BSA)^c			-0.037	-0.656 ^{ns}	-0.032	-0.556 ^{ns}
<i>Interaction effects:</i>						
MAK ^c × SSA ^c					-0.138	-2.820**
MAK ^c × BSA ^c					0.095	2.131*
<i>Model summary:</i>						
F		4.534		10.449		9.179
Adjusted R ²		0.05		0.27		0.31
Change in R ²		0.07		0.23		0.05
F value for R ² change		4.53		13.51		4.53

Notes: ^c mean centered variables; ^{ns} significant at p<0.1(1-tailed); * significant at p<0.05 (1-tailed); ** significant at p<0.01 (1-tailed); *** significant at p<0.001 (1-tailed), N=131

Table6a: Slope Analysis for Market Knowledge as a Moderator of the Relationship between Supplier Specific Assets and Formal contracting

$\frac{\partial FC}{\partial SSA} = 0.162 - 0.138MAK$	Market Knowledge				
	Very Low (-2 σ)	Low (- σ)	Medium (mean)	High (+ σ)	Very High (+2 σ)
Effect of supplier specific assets (SSA) (b) (t-values)	0.496 (t=4.08)***	0.329 (t=4.28)***	0.162 (t=2.55)**	-0.005 (t=-0.05) ^{ns}	-0.172 (t=-1.17) ^{ns}

Notes: *** indicates significant at p< 0.001; ** significant at p< 0.01; “ns” indicates not significant; σ is standard deviation

Table6b: Slope Analysis for Market Knowledge as a Moderator of the relationship between Buyer Specific Assets and Formal contracting

$\frac{\partial FC}{\partial BSA} = -0.032 + 0.095MAK$	Market Knowledge				
	Very Low (-2 σ)	Low (- σ)	Medium (mean)	High (+ σ)	Very High (+2 σ)
Effect of buyer specific assets (BSA) (b) (t-values)	-0.262 (t=-1.97)*	-0.147 (t=-1.68)*	-0.032 (t=-0.55) ^{ns}	0.083 (t=1.18) ^{ns}	0.198 (t=1.78)*

Notes: * indicates significant at p< 0.05; “ns” indicates not significant; σ is standard deviation

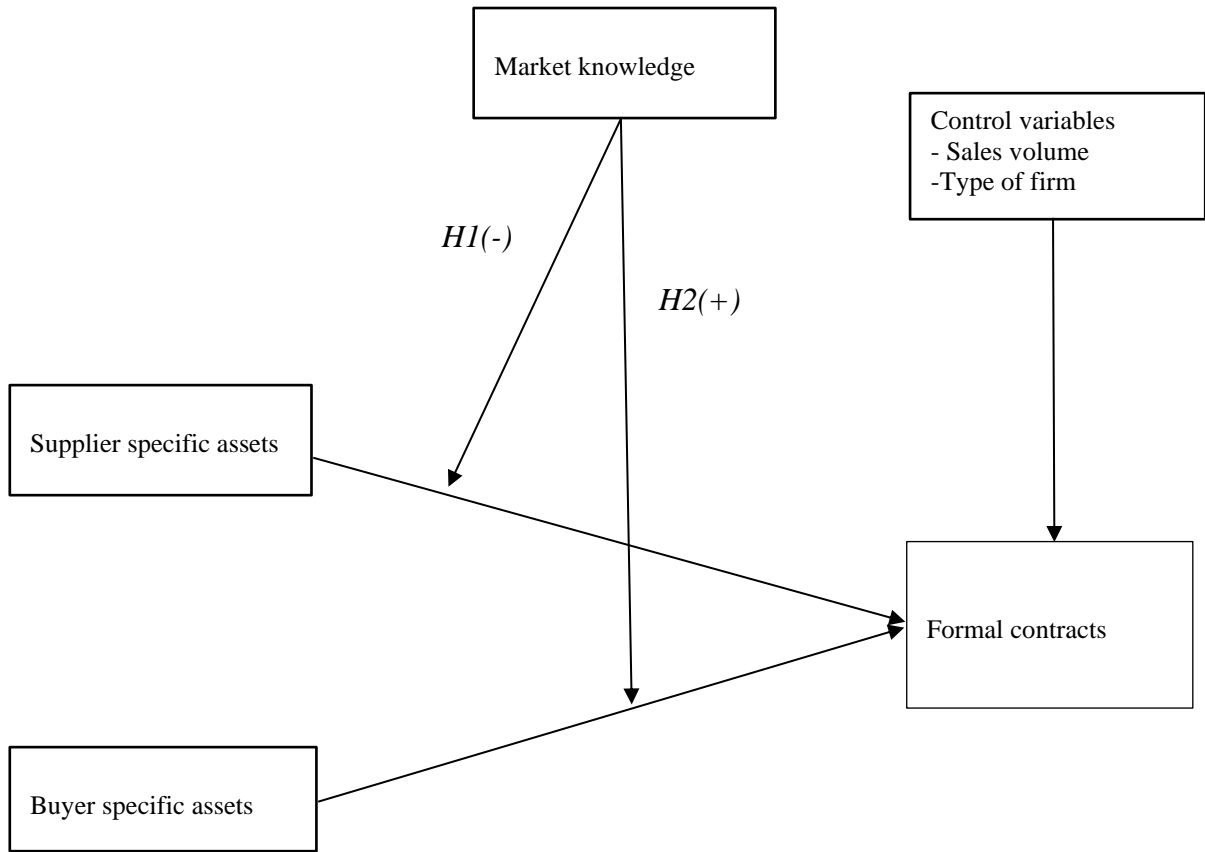


Figure 1. Research model

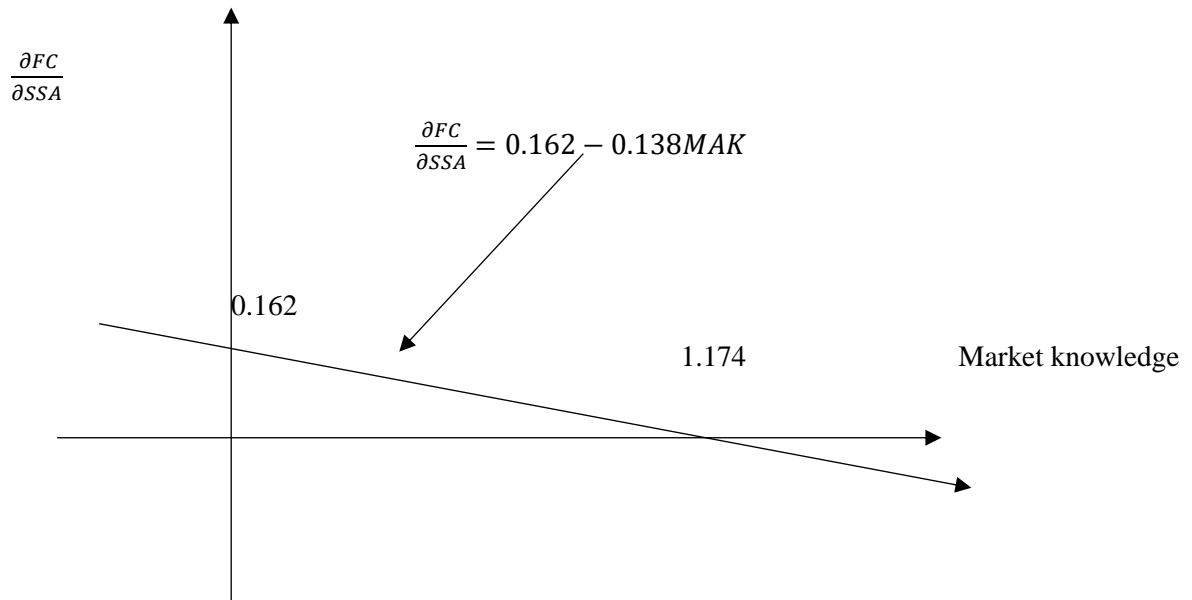


Figure 2a: Non-monotonic effect of supplier specific assets on formal contracts at different levels of market knowledge

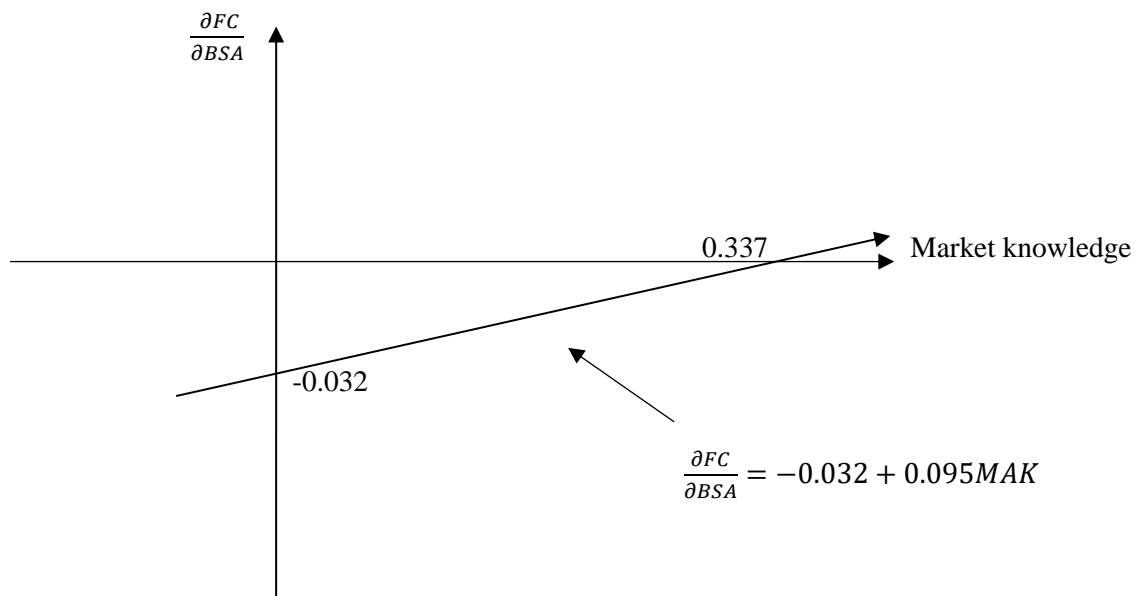


Figure 2b. Non-monotonic effect of buyer specific assets investment on formal contracts at different levels of market knowledge

Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.