

Reverse knowledge transfer from subsidiaries to MNC headquarters: the transfer of local market knowledge

Abstract

Although research on reverse knowledge transfer (RKT) from subsidiaries to headquarters is increasingly prominent, the debate concerning the primary determinants influencing RKT has not reached an academic consensus. Therefore, we have attempted to draw an overall picture for RKT by using both knowledge transfer capacity and relational capital as overarching theoretical lenses. We find, in the context of South Korea, that knowledge development capability, subsidiary willingness and autonomy are critical factors affecting the reverse transfer of local market information within MNC networks. Furthermore, both the knowledge integration mechanism and trust are facilitators for improving relational capital between subsidiaries and MNCs. This factor facilitates RKT from the former to the latter.

Keywords: multinational corporations, local market knowledge, reverse knowledge transfer, knowledge transfer capacity, relational capital

As globalization and subsequent corporate rivalry have intensified, knowledge has been referred to as one of the key strategic resources for multinational corporations (MNCs) to achieve organizational goals (Lyles & Salk, 1996; Park, 2011). The possession of invaluable knowledge, which is not imitable and geographically specific, does not only help to develop the foundation of sustainable competitive advantage, but also functions as a vehicle to facilitate long-term innovation (Inkpen & Dinur, 1998). Such knowledge can be categorized into two different types: explicit and tacit. Explicit knowledge is information that is relatively uncomplicated to learn in that it is easy to articulate verbally and codify, whereas tacit knowledge has a unique characteristic that it is commonly absorbed through personally embedded experience and thus it is difficult to acquire from external sources (Nonaka & Krogh, 2003). However, although a firm may achieve competitive advantage based on tacit knowledge in the internal organizational reservoir, the mobilization of tacit information from one firm to another is difficult, and there is no guarantee that the preservation of such a capability is automatic.

The possible reasons for this are 1) knowledge constantly evolves, 2) other firms persistently try to develop, for example in-house new technology and skills, which can offset competing knowledge, and 3) organizations can gain new external information (e.g., local market knowledge) through establishing subsidiaries in foreign markets. We need to pay particular attention to the third issue due to the fact that despite its relative importance, compared to other agendas, empirical investigation of the topic are still in its infancy (it will be discussed below). In addition, from the perspective of MNCs entering foreign markets, the absorption of new external information such as local market knowledge (LMK) is not only one of the short-cuts to overcome the liabilities of foreignness but is also a catalyst to improve organizational competitiveness.

Zhan, Chen, Erramilli and Nguyen (2009) suggest that MNCs dominating a global market usually possess advanced technology and managerial know-how that are not easily available to other firms and emphasize that the acquisition of such information is strategically crucial to enhance organizational competitiveness. The same researchers also indicate that the level of technological cultivation determines corporate destiny in the long-term, whereas the presence of managerial know-how plays a key role in supporting the adaptation to the rapidly changing business circumstances which eventually improve organizational performance. Sufficient internal accumulation of technological knowledge and managerial know-how are a vital element of this process, but most previous studies have generally attempted to explore factors affecting technology acquisition (e.g., Mowery, Oxley & Silverman, 1996; Rebentisch & Ferretti, 1995).

The primary reason why empirical investigations have focused on a certain type of knowledge (i.e., technology) is because it is relatively easier to measure the extent to which subsidiaries learn from other firms than to measure LMK due to their differences in tacitness (Park, Oh, & Choi, 2012). In this vein, apart from a few exceptions (e.g., Park et al., 2012, Rowley, Chae, Jung & Park, 2013), it is hard to find empirical investigations dealing with the skills relating to the management of local market characteristics, which is one of the essential elements of managerial know-how. LMK plays a boundary spanning role connecting firms and customers (Fan & Ku, 2010), which causes difficulties in measuring the effects of the absorption of that knowledge and therefore in conducting empirical investigations (Park et al., 2012). In addition, technology can be learnt through knowledge transferors' instructions, guides and written manuals, but LMK is culturally specific and deeply embedded in human behaviors. Since the latter has much more implicit attributes, the acquisition of LMK through simple mechanisms is very difficult. These illustrations clearly indicate that the findings of

extant studies investigating technological knowledge cannot be applied to tacit know-how, such as LMK¹.

To reiterate, although researchers have overlooked an exploration of how subsidiaries acquire LMK from a subsidiary perspective and then reversely transfer it to MNCs, there is, in fact, a general consensus that LMK functions as a spur to the strengthening of customer relationships and increasing sales and growth rates (Park et al., 2012). Moreover, foreign subsidiaries emerge as a primary means to exchange LMK with the headquarters of MNCs and to develop market knowledge by MNCs (Simonin & Ozsomer, 2009). In this vein, Roth, Jayachandran, Dakhli & Colton (2009) point to the acquisition of LMK as one of the central motives for MNCs to set up subsidiaries in overseas markets and suggest that international business (IB) *per se* is within the theoretical domain of LMK as it tells us about businesses with foreign customers or resellers or with real or potential competitors for the development of new technology, new products, and new markets.

The contributions of this paper are three-fold. First, building on the literature gaps illustrated above and employing both knowledge transfer capacity and relational capital perspectives as overarching theoretical lenses, we expand, theoretically and empirically, our understanding of reverse knowledge transfer (RKT) from subsidiaries to MNCs. We argue in particular that the use of fragmentary theoretical concepts (e.g., relational capital alone) in conducting empirical investigations is not adequate to grasp precisely the phenomenon in the overall picture. Second, previous studies have generally focused on foreign direct investment (FDI) from conventionally advanced to developing economies, but the increase in direct investments from less developed to advanced countries is a new trend in the IB domains. One of the primary reasons for this is because MNCs which are based in comparatively less developed economies often use FDI to strengthen customer relationships and contribute to

adjusting products and services. The absorption of LMK is no less important than an increase in technological knowledge in order that MNCs can better fit into the local environment which they target and catch up with other global firms (Tsai, 2001). This means that reverse transfer of the knowledge from subsidiaries to MNCs is worth examining. Third, in this context, we undertake our experiments in the context of South Korea (hereafter Korea), because it is a country that has often been overlooked in research. It became a developed country extremely rapidly and successfully leapfrogged to the advanced economic group by utilizing RKT as a main springboard. Thus, by investigating MNCs in Korea, our aim is to identify key determinants affecting subsidiaries' transmission of LMK to their headquarters, by using two theoretical concepts; namely knowledge transfer capacity and relational capital.

Theoretical Development and Hypotheses

Theoretical Background: Knowledge Transfer Capacity and Relational Capital

Subsidiaries, as parts of MNC networks, often have a chance to access various local resources or to acquire diverse knowledge residing in different countries, which may mean that their internal characteristics and ability to innovate can influence the extent to which they share knowledge with MNCs (Joao, Serralvo, & Cardoso, 2011). Meanwhile, knowledge exchange between MNCs and overseas subsidiaries is critical for both in that MNC technology helps subsidiaries to improve the quality of new products for gaining competitive advantage (Lee, Chen, Kim & Johnson, 2008), whereas subsidiaries' ability to cultivate and then transfer LMK may determine the creation of new competitive advantages for MNCs (Minbaeva, Pedersen, Bjorkman, Fey & Park, 2003). Even though LMK is available, not every organization shares it successfully, mainly due to subsidiaries' different learning capability and their insufficient

knowledge transfer capacity (Park, 2011). When subsidiaries obtain LMK, knowledge often needs to be modified in the digestion process, and thus RKT is significantly affected by the extent to which the absorbing units are eligible to further develop and exploit it for their own business purposes (Minbaeva et al., 2003). Therefore, the substantial volume of reverse transfer of LMK by subsidiaries is influenced considerably by the knowledge sender's capability to transmit the knowledge, which eventually influences MNC competitiveness (Tang, Mu, & MacLachlan, 2010). For this reason, the ability to transfer and deploy LMK has become one of the main competitive priorities for many overseas subsidiaries (Subramaniam & Venkatraman, 2001). According to Park (2011), this ability is frequently promoted by the skill sender's *knowledge development capability, possession of prior related knowledge, willingness and autonomy* (emphasis added).

Another pivot which needs to be considered in the RKT discussions is relational capital between knowledge senders (i.e., subsidiaries) and recipients (i.e., MNCs). Relational capital in the MNC networks refers to firm-specific relationships that MNCs develop with other subsidiaries through interactions and plays a critical role in developing intra-organizational learning (Evangelista & Hau, 2009). Similarly, Lee et al. (2008) argue that the effect of RKT between subsidiaries and MNCs depends greatly on relational capital encompassing knowledge integration mechanisms, such as social interactions. Active social interactions facilitate knowledge exchange by enhancing both parties' coordination capabilities (Li, Barner-Rasmussen & Bjorkman, 2007). Socialization is related to the capability to enhance the sense of closeness and intimacy between units, which logically facilitates their knowledge sharing (Borini, Oliveira, Silveira, & Concer, 2012). In particular, knowledge acquiring firms may learn more easily and move quickly in the case of explicit knowledge learning, but the acquisition of tacit information, such as LMK, is a frustrated and complicated process, and thus

for efficient RKT, social ties, in part, determining *knowledge integration mechanisms* influencing RKT from subsidiaries to MNCs should be essential. *Trust* plays a critical role in deterring opportunistic behavior. Mutual trust facilitates knowledge transfer from MNCs to subsidiaries and also RKT by saving transaction costs and the time for screening and recognizing the perceived value of transferred knowledge (Li et al, 2007). The presence of relational trust signifies a capability to exchange a high degree of mutual understanding, which indicates that trust is a prerequisite for the exchange of knowledge and especially to take the place of the transmission of tacit knowledge (e.g., LMK) (Roberts, 2000). MNCs' success in the global marketplace is largely dependent on the effective management of relationships between MNCs and subsidiaries, but this is influenced by the degree of their organizational heterogeneity (i.e., *organizational distance*) (Hewett & Bearden, 2001). Hewett and Bearden (2001) argue that the behavior and attitudes of employees in foreign subsidiaries are likely to differ from those of employees at the headquarters when their organizational culture is not identical. In this vein, relational capital between subsidiaries and MNCs can be characterized by their level of sharing common processes and values representing organizational distance (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004).

Detailed explanations of both subsidiary knowledge transfer capacity and relational capital and their impacts on RKT will be further illustrated below:

Knowledge Transfer Capacity

Knowledge Development Capability. The reverse transfer of knowledge from subsidiaries to their headquarters can take place when the former has a stock of knowledge that is firm-specific but is valuable for MNCs (Mudambi, Piscitello & Rabbiosi, 2014). Thus, the starting point of RKT is perhaps subsidiaries' successful development of knowledge learnt in local markets

(Martins, 2012). Meanwhile, knowledge development would not be possible without appropriate knowledge absorption and assimilation. Some subsidiaries are better able to enhance the value of their own knowledge by absorbing new local information and blending it with existing knowledge and then using it for business operations in local markets. These subsidiaries often achieve superior performance and competitiveness, compared to other subsidiaries within MNCs. Therefore, MNCs have a motivation to support such subsidiaries in order to seek an opportunity to learn invaluable LMK through RKT (Rugman & Verbeke, 2001). Once a MNC views a subsidiary as an attractive cooperation counterpart possessing adequate capability to assimilate LMK and turn it into a competitive advantage, the MNC will attempt to learn and acquire subsidiary knowledge (Davenport & Prusak, 1998). Gupta and Govindarajan (2000) argue that in this circumstance, RKT to MNCs will rise and MNCs will tend to try to provide more education and training opportunities to subsidiaries so that the latter will be able to develop unique and non-duplicable skills, such as specific market knowledge, for MNCs (Bjorkman, Barner-Rasmussen & Li, 2004). In addition, RKT becomes particularly effective when these relationships between subsidiaries and MNCs trigger the virtuous circles above for knowledge exchange and MNCs endeavor to apply the reversely transferred knowledge to commercial ends. In this regard,

H1: Knowledge development capability by subsidiaries will positively increase their reverse knowledge transfer to MNCs

Possession of Prior Related Knowledge. There is a common wisdom that the size of a knowledge reservoir is critical for any organization and often determines its destiny and the long-term existence of the firm. Similarly, from the perspective of MNCs, RKT from subsidiaries ought to function as a vehicle not only to maintain their competitive-edge but also

to further improve their market position in the global arena. However, knowledge has sticky characteristics and it can be difficult to transfer from one firm to another (Gupta & Govindarajan, 2000). Thus to overcome such a difficulty, a subsidiary's existing knowledge base can be crucial to the achievement of RKT. In other words, for knowledge transferors (i.e., subsidiaries), an organizational knowledge base stemming from the possession of relevant knowledge stands for the level of familiarity in a certain area and offers organizational confidence in teaching, which helps knowledge recipients (i.e., MNCs) to successfully receive new information from knowledge senders (Park, 2011). According to Cohen and Levinthal (1990), when organizations own prior related knowledge, they are better able to achieve difficult organizational missions in that it provides a clue to solve problems that they encounter in the process of business operations. Park (2011) punctuates these discussions by pointing out that the possession of prior relevant knowledge is a key for knowledge transferors to support acquirers to effectively learn new knowledge from them. The same researcher also argues that stored relevant knowledge in subsidiaries' memory helps them to lessen operational uncertainties by increasing MNC attention through effectively transferring local information in foreign markets, which implies that subsidiaries' ability to transfer LMK based on the holding of a relevant knowledge base is one of the main competitive advantages of MNCs (Ghauri & Park, 2012). Likewise, the sharing of prior relevant knowledge between subsidiaries and MNCs promote their knowledge exchange and subsequent usage (McGuinness, Dermirbag & Bandara, 2013). Hence,

H2: The possession of prior related knowledge by subsidiaries will positively increase their reverse knowledge transfer to MNCs

Subsidiary Willingness. Knowledge is deeply embedded in organizations, and therefore RKT

is a time and resource consuming process. Due to this, a subsidiary is sometimes unwilling to contribute to the knowledge base of its parent firm (Najafi-Tavani, Giroud, & Sinkovics, 2012). Szulanski (1996) contends that the major reasons behind the knowledge transferor's protectiveness are generally fear of losing ownership, a desire to remain in a superior position, inadequate reward for sharing hard-won success, and unwillingness to dedicate time and resources for transferring knowledge. Husted and Michailova (2002) illustrate six reasons for knowledge senders' hostility towards sharing knowledge: 1) possible loss of market value and bargaining power and sustaining individual competitive advantage; 2) reluctance to spend time and resources on knowledge sharing; 3) unwillingness to share knowledge with the other party who put less or no effort into knowledge development; 4) protecting against external assessment of the quality of the knowledge possessed; 5) uncertainty of the knowledge recipients' interpretation and perception about the shared information; and 6) high respect for hierarchy and official power in the case of holding knowledge. These arguments conversely indicate that subsidiaries' willingness to share information can play a pivotal role in substantially occurring RKT (Najafi-Tavani et al., 2012). Park (2011) suggests that some organizations are more open to knowledge acquirers and allow the latter to access their own precious information more than other transferors, for a variety of reasons, and such transparency determines the potential for RKT. Moreover, a subsidiary structured in a way conducive to sharing of own LMK will achieve better knowledge transfer capacity. In other words, when subsidiaries decide to be completely open in sharing knowledge by various means (e.g., codified documentations, facilities or systems), they can become a more effective device for MNCs to learn LMK (Inkpen and Dinur, 1998). Accordingly,

H3: Subsidiaries' willingness to share own information will positively increase their reverse knowledge transfer to MNCs

Subsidiary Autonomy. As business wars intensify in many geographical areas, MNCs need to undertake country-specific strategies to compete effectively against their rivals. Due to this, many subsidiaries often obtain substantial strategic independence in various aspects of their operations, which subsequently results in intra-firm bargaining power affecting the distribution of the firm's resources and this plays a critical role in the flow of organizational knowledge within MNC networks (Mudambi & Navarra, 2004). When a position of strategic importance is increased, subsidiaries are likely to receive better support from headquarters and to be able to fit quickly into changes in business environments in local markets, which enlarge the extent to which they share LMK with MNCs (Joao et al., 2011). In contrast, when the connection of the subsidiary's destiny to the MNC network is tightly controlled and subsidiary autonomy is not guaranteed, the subsidiary probably has to subordinate its own decisions to those of the network. Then, often, it finds itself locked into a trajectory shaped by the parent (i.e., MNC), which lessens the subsidiary's capability to adapt to change in the local business environment. Similarly, Berdrow and Lane (2003) claim that the enlarged control by the parent reduces the subsidiary's organizational flexibility, which again impedes the improvement of its own ability to adapt internal resources to local demands, and to develop new capabilities by itself. In a modern competitive environment, the key to any successful strategy seems to be related to organizational flexibility, in that it not only helps to adjust quickly to changing demand and resource requirements, but also facilitates the absorption of new knowledge from external sources, which is the crucial foundation of RKT (Mohr & Sengupta, 2002). These discussions lead to the following hypotheses:

H4: Subsidiaries' autonomy is positively associated with their reverse knowledge transfer to MNCs

Relational Capital

Knowledge Integration Mechanisms. When overseas subsidiaries and their headquarters (i.e., MNCs) have a complementary knowledge integration mechanism, RKT will be accelerated. Knowledge integration mechanism means organizational cooperative connectors which are used for inter-unit knowledge and skill sharing (Jeong, Chae & Park, in press). According to Gupta and Govindarajan (2000), such knowledge integration mechanisms can be divided into two components: formalization and socialization. Formalization mechanisms, such as liaison personnel, task forces and permanent committees, play a critical role in mixing multiple units. Formal integrative mechanisms have positive impacts on the density of communication interfaces and knowledge outflows from subsidiaries to headquarters. On the other hand, socialization mechanisms create interpersonal familiarity and personal intimacy between subsidiaries and other units. Socialization mechanisms significantly enhance the extent to which subsidiaries reversely transfer locally specialized knowledge and the level of interactions between subsidiaries and headquarters (Khan, Shenkar & Lew, 2015; Najafi-Tavani et al., 2012). Rabbiosi and Santangelo (2013) also propose that socialization mechanisms, such as teamwork involving people, meetings and visits between subsidiaries and parent firms (i.e., MNCs) function as “grease” in the RKT process. This is because it guides managers in knowledge acquiring organizations to paths to initially recognize the characteristics of knowledge, effectively understand the value of new information, and apply it appropriately to business operations, which leads logically to the enhancement of knowledge sharing between them. So,

H5: Knowledge integration mechanisms will positively increase subsidiaries' reverse knowledge transfer to MNCs

Trust. While organizations mutually exchange own knowledge (as said earlier, MNCs may transfer technology to subsidiaries and subsidiaries transmit LMK to their headquarters), they may encounter numerous unanticipated problems. This is due, in part, to the differences in business environments that knowledge transferors and acquirers operate (e.g., institutional incongruence). In this situation, a common phenomenon is that although knowledge transferors possess adequate knowledge transfer capacity or acquirers equip them with appropriate absorption abilities they perhaps suffer from difficulties in performing their jobs. Therefore, for effective knowledge sharing, those firms need to build favorable learning environments based on a trust relationship that plausibly facilitates mutual understanding between transferors and acquirers and then it will help them to solve any complications that may arise in the knowledge transfer process (Najafi-Tavani et al., 2012). In this sense, an important lubricant, facilitating knowledge flow between knowledge transferring and acquiring firms, is trust. Trust positively influences the extent of knowledge disclosure, the authenticity of knowledge, and knowledge embracement by the members involved (Sié & Yakhlef, 2009). Additionally, the presence of trust lessens knowledge possessors' efforts to protect their own crown jewels and increase the level of transparency and openness to knowledge recipients (Buckley & Park, 2013). When knowledge possessors take the risk of losing a competitive advantage from delivering and distributing valuable knowledge over other organizations, trust provokes acceptance of vulnerability and enhances the quality and frequency of communication between knowledge exchanging parties (Sankowska, 2013). In contrast, mistrust results in an enlarged propensity for knowledge transferors to pause to take-off their protective coats, which logically disturbs knowledge sharing between subsidiaries and MNCs and deters the reverse flow of knowledge. Therefore trust plays a pivotal role in escalating subsidiaries' motivation to share

various and potentially valuable LMK with headquarters (Inkpen & Tsang, 2005). Therefore,

H6: Trust will positively increase subsidiaries' reverse knowledge transfer to MNCs

Organizational Distance. Organizational distance is often referred to as a risk factor increasing ambiguity in the knowledge exchange process (Ambos, Ambos, & Schlegelmilch, 2006). The reason is because a large organizational distance may lead to a misunderstanding of the logical linkages between business activities and outcomes, inputs and outputs, and the causes and effects of specific market-based competency and thus diminish subsidiaries' knowledge transferability to MNCs (Simonin, 1999). Organizational distance is defined as the difference between headquarters and subsidiaries in terms of values, practices and structures (Ambos et al., 2006). Simonin (1999) also defines organizational distance as the degree of dissimilarity in business practices, organizational heritage and culture. Taken together, organizational distance stands for the difference between headquarters and subsidiaries in terms of organizational culture, vision, goals and operational directions.

Previous studies (e.g., Ghauri & Park, 2012; Gupta & Govindarajan, 2000) claim commonly that knowledge is one of the most critical assets of MNCs in order to keep up with other competitors and efficiently cope in a global competitive market. According to this premise, organizational distance (that is, incompatibility of organizational culture, recurrent conflicts in corporate vision and goals and dissimilar operational directions) between subsidiaries and headquarters within MNC networks yields serious barriers which obstruct their knowledge flows (Martins, 2012). Moreover, such firms experience difficulties in sharing corporate vision and missions through similar processes and value chains and harmonious norms of behavior cannot win in a mutual learning race, which plausibly causes a situation in which subsidiaries are not able to reversely transfer LMK (Ambos et al., 2006). According to

Hennart and Zeng (2002), this result emerges particularly in the case where organizational distance can become a fuse preventing organizational members from promoting communication, interacting in routine activities and sharing mutual ideas and these obstacles subsequently bring about a reduction in the motivation to collaborate. These discussions lead to the following hypothesis:

H7: Organizational distance will decrease subsidiaries' reverse knowledge transfer to MNCs

Method

Data Sources and the Sample

The targets for this paper are subsidiaries established by MNCs in order to examine the subsidiaries' RKT to their headquarters. The initial population is founded on *Foreign Direct Investment* (2014) published by the Korean Ministry of Trade, Industry and Energy (MOTIE). *Foreign Direct Investment* (2014) includes important information on all different types of foreign investments that have been operating in various business types in Korea. The information is trustworthy in that it is an official government resource and it provides a comprehensive data list of 15,566 foreign investments. For this reason, previous studies (e.g., Ghauri & Park, 2012; Park & Choi, 2014), which have attempted to examine the influence of FDI in Korea, also used the same source of data for their research.

To reiterate, this paper attempts to identify key factors affecting RKT from subsidiaries to their headquarters and observe the phenomenon from the perspective of the subsidiaries. This may mean that the population for this study consists of foreign subsidiaries which have a non-Korea parent company and are operating in Korea. In this regard, this paper adopts the

following sampling criterion for the empirical investigations:

(1) Subsidiaries must have more than 50 employees. (Micro-sized subsidiaries may be run like personal or family businesses; thus they may be unlikely to be involved in knowledge transfer to headquarters);

(2) Subsidiaries must have had at least two years of operational experience by 2013. (Rowley et al. (2013) argue that it may be difficult to accumulate LMK when a business has been run only for a short period of time);

(3) Foreign wholly owned subsidiaries or subsidiaries in which MNCs possess more than 50 per cent equity ownership. They are potentially liable for providing LMK to their headquarters as foreign investors hold dominant power in their subsidiaries' operations. Likewise, in a study about the transfer of LMK in IJVs, Park et al. (2012) also include only IJVs in which MNCs own more than 50 per cent of the equity.

After three sampling processes, subsidiaries were double-checked by using web-site data. The information was obtained by using an online website (<http://dart.fss.or.kr/>) which is a web site of Data Analysis, Retrieval and Transfer System authorized by the Financial Supervisory Service, a government department. By using the website, it is possible to find out the current corporate names and their homepage addresses. The data is updated every year by the Korean government, but it is possible that some subsidiaries might not run the business any more, due to a switchover to domestic firms, withdrawal of foreign investments, liquidation, termination of contract, or other reasons. Therefore, it was decided to confirm the business situation by visiting the corporate homepages of the directory. This was also necessary in order to find out the business year of the subsidiaries. In addition, in cases where homepage addresses had been changed, an online database was able to trace it, and thus it is also useful to obtain the precise information on the website addresses. Through these processes, a total number of 1,343 firms

were identified as a sample.

We pursued several changes of the questionnaire drafts as follows. Firstly, the first version of the questionnaire was developed in English and reviewed by the English native speaking co-author. Then, the contents of the covering letter and the order of the questions were revised several times according to the feedback of other colleagues. For instance, the definition of a term, 'knowledge', was changed from local marketing knowledge to local market knowledge, in that subsidiary transfer of knowledge in the questionnaire includes various information on host markets rather than specific marketing skills. Secondly, the questionnaire was translated into Korean and then back-translated to English by one of the authors, Korean research students and a colleague who is teaching English education in order to confirm the accuracy of the initial English version of the questionnaire and search for more appropriate words in the Korean version of the questionnaire. By doing so, some grammatical errors and expressions were also amended. The questionnaires were sent to CEOs and executives in both the English and Korean languages in order to help respondents to use the questionnaire designed in their mother tongue and subsequently enhance response rates. A total of 432 responses to the survey were returned, giving a response rate of 32.2%.

In addition, we tested the responses for non-response bias by using key parameters (industry characteristics, the mode of entry and a comparison between subsidiaries established before the Asia crisis vs. after the event). However, we did not find a significant difference with regard to those three parameters, which indicates that the non-response bias is minimal (Ambos & Birkinshaw, 2010; Chung, 2014).

Variable Measurements

Local market knowledge was measured by a five-point Likert scale (1 = very little, 5 = to

very much) and by asking respondents to answer the question “ To what extent has this firm successfully transferred market data about (a) customers, (b) competitors, (c) marketing know-how, (d) distribution know-how, (e) market-specific technological know-how, (f) purchasing know-how, and (g) overall LMK to headquarters?” (adapted from Gupta & Govindarajan, 1994; Najafi-Tavani et al., 2012; alpha = 0.926).

To measure knowledge development capability, the following three items were used: (a) “Our employees in the firm have adequate academic background to understand and use local market knowledge very well.” “We commit significant resources to educating and training (b) non-managerial and (c) managerial employees to master local market knowledge” (adapted from Andersson, Forsgren, & Holm, 2002; Wang, Tong, & Koh, 2004; alpha = 0.731).

In contrast, the possession of prior related knowledge was gauged by five items asking “compared to headquarters, how similar are (is) (a) the products, (b) the service, (c) the customers, (d) the basic technology, and (e) the basic skills which are (is) produced (or provided and shared) by this firm” (adapted from Park, 2011; alpha = 0.912).

Subsidiary willingness was calculated by the average of four items summarizing the levels of (a) its motivation to transfer knowledge to headquarters, (b) organizational commitment to knowledge transfer within MNC networks, (c) relations with its main establishment purpose with knowledge transfer, and (d) relations between subsidiary knowledge transfer and appraisal by headquarters (adapted from Najafi-Tavani et al., 2012; alpha² = 0.557).

Subsidiary autonomy was measured by four items summarizing the levels of subsidiaries’ freedom to make decisions in terms of (a) developments and changes in products/services for the domestic and export markets, (b) subsidiary human resource management, (c) financial management including pricing policy, and (d) marketing activities” (adapted from Miao, Choe, & Song, 2011; alpha = 0.628).

With respect to knowledge integration mechanisms, the first two items were based on Ghauri, Cave and Park (2013) capturing whether there are (a) efficient channels for communication and (b) frequent interfaces (i.e., visits and meetings) between subsidiaries and their headquarters. Respondents were also asked to indicate the extent of the following two items: (c) “Our employees are often dispatched to co-work with headquarters” and (d) “managerial collaborative support by headquarters is common for this firm” (revised from Najafi-Tavani et al., 2012; Rabbiosi & Santangelo, 2013; $\alpha = 0.553$).

Trust was calculated by the average of three items summarizing (a) overall feature of trust in working relationship between headquarters and top management of this firm, and the levels (b) of headquarters’ trust that subsidiaries will make no decisions detrimental to them and (c) of trust of this firm in its headquarters’ contribution to subsidiary (created by this study; $\alpha = 0.899$).

Finally, organizational distance was assessed by the average of five items summarizing (a) cultural misunderstanding, (b) cultural dissimilarity, and differences in (c) corporate vision, (d) the way for business practices and (e) organizational goals between subsidiary and its headquarters (adapted from Li et al., 2007; $\alpha = 0.645$). All responses were computed by using a Likert-type scale grading from 1 (entirely disagree/very little) to 5 (extremely agree/very much).

In order to control for the potential influence of other factors, we also employed five control variables in the framework. (1) Mode of establishment. Mudambi et al. (2014) suggest that the levels of RKT can be affected by the entry mode through which a subsidiary has been established, and thus a dummy variable was created (1 for Greenfield subsidiaries and 0 otherwise). (2) Industry characteristics. Industry characteristics may be the critical influences on knowledge transfer within MNCs since the level of knowledge exchange differs according

to industries (Minbaeva et al., 2003). Therefore, industry characteristics were controlled as a dummy variable to indicate whether the subsidiary was in services or manufacturing (1 for service sector and 0 otherwise). (3) Size was measured by the number of employees. This was the same method used in the previous studies (Minbaeva et al., 2003; Tsai, 2001). (4) Following Anh, Baughn, Hang and Neupert (2006), age was assessed by the number of years since creation of the subsidiary. (5) Knowledge tacitness. It has been argued that it should be harder to transfer information in the case where it has more tacit characteristics (Rabbiosi & Santangelo, 2013), and thus we measured it by the average of twelve items asking whether 1) “it is hard to verbally transfer market data about (a) customers, (b) competitors, (c) marketing know-how, (d) distribution know-how, (e) market-specific technological know-how, (f) purchasing know-how to headquarters” and 2) “it is hard to encode and write down the same six different knowledge elements above in reports or documents with the purpose of transferring the knowledge to headquarters.”

Common Method Variance. Respondents were asked to perceptually judge both dependent and independent variables, and in this situation, researchers usually suggest that the minimum presence of common method variance (CMV) needs to be confirmed. According to Podsakoff, MacKenzie, Lee and Podsakoff (2003), Harman’s one factor analysis is a common technique to check the problem (see also Podsakoff & Organ, 1986). Based on explanations given by previous studies, we injected all variables assessed by respondents’ perceptual measurement into the analysis. The proportion of variance criterion shows four factors: ‘subsidiary willingness’ and ‘organizational distance’ have high loadings on the first factor (22.26%); ‘possession of prior related knowledge’, ‘subsidiary autonomy’, ‘trust’ and ‘reverse transfer of LMK’ have high loadings on the second factor (16.54%); ‘knowledge development capabilities’

and ‘knowledge integration mechanism’ have high loadings on the third factor (15.68%); and ‘knowledge tacitness’ has high loadings on the fourth factor (11.63%), representing 66.11% of total variance. This result clearly confirms that the data used in this paper do not suffer from this problem.

In order to minutely verify further that the issue is negligible, we interviewed 10 respondents to check their response consistency posterior to the completion of the survey. We did not uncover a significant difference between the respondents’ interview reports and their survey answers. We also re-sent the same 50 questionnaires to different people (e.g., directors and general managers) whose CEOs or executives had participated in the survey earlier. We did not find any substantial inconsistencies between the two informants from each firm. These series of results show the minimum presence of CMV (Luo, 2006).

Results

Prior to implementing OLS regression analyses, it is necessary to confirm that a multicollinearity problem does not exist as a pre-condition. Multicollinearity occurs when the independent variables are correlated with one another and becomes a serious problem when two or more independent variables are highly correlated. As the first step to verify the non-presence of the issue, Table 1 presents the means, standard deviations and correlations among the five control variables, seven independent variables and their correlations with the dependent variable (Extent of RKT). According to Table 1, the problem of multicollinearity is tiny, in that all of the correlations are below .4 (Hair, Anderson, Tatham & Black, 2005).

However, this paper also detects an exception in that the correlation between ‘subsidiary willingness’ and ‘organizational distance’ is quite high, indicating that the variance inflation

factor (VIF) values need to be examined more precisely in order to check the level of multicollinearity among the variables. Hair et al. (2005) point out that the VIF value should not exceed 5.0 and as long as the value is under the cut-off point the data are usable for further analysis. The results from the additional assessment are shown in Table 2, and it confirms that multicollinearity is not high enough to engender problems (the maximum value is 4.860).

Table 1

OLS Regression Analyses

The focus of this paper is to identify key factors affecting RKT from overseas subsidiaries to headquarters, indicating that the primary target is to find a cause-and-effect relationship between independent and dependent variables. In this situation, OLS regression is the best technique to achieve the target goal explained (Hair, Anderson and Tatham, 1987). Table 2 shows OLS regression results. Both control variables and factors in knowledge transfer capacity were entered into Model 1, whereas controls and components in relational capital were inputted into Model 2. Model 3 is a full model. The results indicate that all regression models are highly significant ($p < 0.001$).

Table 2

With respect to control variables, firm size and age are statistically significant in all models (size is positively significant, but age turns out to be negative). These results mean that large subsidiaries have a propensity to possess better knowledge transfer capacity than small ones. This is probably because large affiliated firms denote strategically important subsidiaries,

and thus parent firms may tend to invest more organizational resources in the former, which motivates large subsidiaries to transfer high-quality LMK to their headquarters. Meanwhile, older organizations may suffer from inertia, which functions as a hindrance to the transfer of market information to their parent firms. Likewise, Ghauri and Park (2012) suggest that most researchers believe that due to age-long operations with parents who own firm-specific capabilities, it is often expected that older organizations tend to have a better knowledge reservoir and information management capability. However, they argue that the general view may not be applicable when firms operate in business environments experiencing rapid economic changes, such as Korea.

In terms of the first dimension, ‘knowledge transfer capacity’, most of the variables included in the research framework are positively significant. ‘Knowledge development capability’ has a strong positive association with ‘the extent of RKT’ in Models 1 and 3 ($p < 0.01$), so *hypothesis 1* is accepted. Both ‘subsidiary willingness’ and ‘its autonomy’ are also significant ($p < 0.001$ in all Models), and positively related to the level of RKT to MNCs, which supports *hypotheses 3* and *4*. However, ‘possession of prior related knowledge’ does not reveal any statistically meaningful relationship with ‘the extent of RKT’. So *hypothesis 2* is not supported.

The second dimension is ‘relational capital’, and all variables are selected as crucial factors determining knowledge exchange between MNCs and their subsidiaries. First, the regression results highlight the importance of ‘knowledge integration mechanism’ to teach LMK to parent firms ($p < 0.5$), and thus *hypothesis 5* is supported. Second, trust is statistically significant in Model 2 ($p < 0.01$) and its power remains in Model 3 ($p < 0.05$), which indicates their positive associations. So, *hypothesis 6* is supported. Third, this paper anticipated initially that organizational distance would bring a detrimental effect to subsidiaries’ teaching

environments. Interestingly, its negative effect on RKT is not found in Model 2 ($p < 0.001$), though it is marginally significant in Model 3 in the expected directions ($p < 0.1$). Hence, *hypothesis 7* is partially supported.

Table 3

Discussion

Summary

We have identified two key findings: First, the knowledge transfer capacity of subsidiaries plays a pivotal role in reversely transferring LMK to their headquarters. However, surprisingly, prior related knowledge possessed by subsidiaries does not show a significant relationship with RKT, though most previous studies suggested that it (i.e., the possession of relevant knowledge) is a short-cut to enlarge the extent of knowledge exchange (this is one of the unique findings of this paper, which is different from existing studies). For instance, Park (2011: 82), focusing on the effects of knowledge transfer capacity, argues that “pre-ownership of appropriate information is not only an important precondition for knowledge acquirers but is also a key requirement for foreign firms (in his paper, they are knowledge transferors) to transfer proprietary organizational knowledge efficiently. In other words, knowledge transferors may need sufficient prior related knowledge in order to teach, instruct and ultimately incorporate their own new knowledge in IJVs (in his paper, they are knowledge recipients) in order to raise the latter’s learning effect. This is because knowledge acquisition is highly associated with the sharing of a cognitive business structure between knowledge transferors and acquirers.” Despite the explanations given by extant empirics, the result can be understandable if we

change our way of thinking. If knowledge owned by subsidiaries is too closely related to knowledge stored by their headquarters, the latter may think that reversely transferred knowledge from the former is perhaps redundant information, and this leads to the inhibition of subsidiaries' RKT (Asmussen, Foss and Pedersen, 2013). Another possible reason is perhaps associated with knowledge characteristics. In other words, technological knowledge is not generally influenced by the context of knowledge formation, which means that what can be learnt is crucially affected by what is already known. However, LMK is particularly culture-specific, and thus sharing of a congruent cognitive structure between knowledge senders and recipients is not a common phenomenon.

Second, the findings from factors associated with relational capital are not much different, and they are all confirmed in the predicted direction, except organizational distance (organizational distance is negatively significant only in the full model). In order to explore the reason, we tested the interaction effects of organizational distance with other factors in the first dimension (i.e., knowledge transfer capacity). As shown in Figures 1 and 3, organizational distance functions particularly negatively in the presence of both 'knowledge development capability' and 'subsidiary's willingness to transfer'.

Figures 1, 2, 3 and 4

Contributions to Scholarship

The primary contribution of this paper is to extend our understanding of RKT and to up-build the two theoretical concepts, 'knowledge transfer capacity' and 'relational capital' as a critical device helping the enlightenment of the phenomenon. Given the importance of the issue, researchers have attempted increasingly to identify major factors influencing the RKT from

subsidiaries. Although empirical studies of RKT have been undertaken recently, there still exists a critical hole in our understanding of the phenomenon because previous studies have employed fragmentary theoretical concepts. Some studies have emphasized either relational capital between knowledge transferors and acquirers as a catalyst to enhance a favorable learning environment (e.g., Lee et al., 2008) or knowledge possessors' transfer capacity improving recipients' learning effects (e.g., Park, 2011). Some other scholars who have explored knowledge acquisition by headquarters suggest that learning is not possible without social embeddedness (i.e. subsidiary is deeply embedded in the local social network and thus needs to enjoy organizational autonomy) (e.g., Joao et al., 2011; Mudambi & Navarra, 2004) or knowledge relevance between information exchanging parties (e.g., Ghauri & Park, 2012), which is, in part, critically linked to subsidiaries' absorptive capacity in their knowledge development process in local markets. In contrast, Gupta and Govindarajan (2000) perceive that the maximization of knowledge flow within MNC networks is not plausible without the presence of appropriate knowledge integration mechanisms (see also Khan et al., 2015). These explanations imply that the debate discussing the primary determinants influencing RKT has not reached an academic consensus and therefore this should be one of the central research themes for academics. Within this idea, we tried to draw an overall picture encompassing all these elements for RKT in the research framework.

From a theoretical point of view, we suggest that a subsidiary's knowledge transfer capacity to teach and instruct locally embedded tacit know-how is strengthened when it owns abilities to absorb and assimilate new information and as a result, adequately develop it within its cognitive structure. Also, subsidiary motivation to teach knowledge (i.e., willingness) and unconstrained business autonomy functions as a stimulant to be a better knowledge transferor. In contrast, relational capital between subsidiaries and MNCs is significantly upgraded in the

case where knowledge integration mechanisms work properly and mutual trust is present. This may mean that RKT cannot be plausible if interactions based on socialization are uncommon and this triggers mistrust and conflicts in the headquarter-subsidary relationship. These explanations theoretically impart what concepts need to be complemented to strengthen conventional theories and achieve theoretical evolutions in the recent IB area. They also circuitously provide a clue to solve an on-going query about why MNCs having headquarters in emerging or developing countries try to externalize their activities in developed economies despite the presence of the liabilities of foreignness. In other words, considering the recent new trend of an increasing proportion of global FDI undertaken by emerging market MNCs, which do not probably possess sufficient ownership and internalization advantages, IB theories need to take a step further by blending their motivations for knowledge search from external sources with current conventional wisdom. We believe that our results, based on two theoretical concepts, can contribute to rebuilding and remodeling theoretical debates in IB domains.

Applied Implications

This paper offers potentially critical implications for MNC managers. First, our study finds that subsidiary willingness is a key pre-condition for RKT to take place by enhancing knowledge transfer capacity. This suggests clearly that MNC managers need to think carefully how to improve subsidiary motivation to transmit locally residing information. Second, our results also reveal that subsidiary autonomy may yield better knowledge transfer than exercise of tight control over subsidiaries by headquarters. This implies that the hierarchical relationship in MNC networks and subsequent heavy control by MNCs can make it difficult for subsidiaries to demonstrate the latter's teaching capability. Thus, we would like to provide guidance for MNC managers that they should nurture an amicable relationship with their subsidiaries and

collaboratively support subsidiaries rather than closely supervise them and help subsidiaries in overcoming obstacles encountered in business operations, which will logically ameliorate their knowledge transfer capacity. Third, another practical implication for MNC managers is that they should be well-informed of the fact that tacit knowledge, such as LMK, is often embedded in the human body, and thus MNC managers should pay particular attention to providing training and education programs to subsidiaries' organizational members as a way of increasing their knowledge development capability. Finally, MNC managers should strive to build a network of trust with subsidiaries; otherwise RKT from subsidiaries to headquarters can be difficult.

Limitations and Future Research Directions

Although this paper contributes significantly to current knowledge on RKT and relevant theoretical discussions, as well as providing practical implications to MNC managers, we acknowledge that it also suffers from some limitations. First, our empirical examination is geographically restricted to Korea. Results could be different in other contexts and therefore our research results needs to be compared with investigations undertaken in other countries. We believe that this will also possibly extend the generalizability of our findings. Second, in the same vein, as the data is obtained only from one country and is cross-sectional there is a possibility of reverse causality between the dependent and some of the key independent variables. Third, knowledge can be divided into various idiosyncratic types, but we employed only LMK. This suggests that future studies should test other knowledge forms. Fourth, as we examined a cause-and-effect relationship between dependent and independent variables, we do not know the presence of interactions among predictors. In this vein, another future research avenue is to use, for example, structural equation modelling, to investigate the relationships

among variables. Fifth, we were not able to statistically uncover a reason why organizational distance specially interacts with certain factors (i.e., the interaction effects of organizational distance with certain factors) and we believe that without further, detailed investigation, this question will not be answered. Moreover, we acknowledge that the measurement of organizational distance by respondents' perceptual judgement is also one of the key limitations in this paper. The possible remedy for this is, for example, the use of the index designed by Kogut and Singh (1988) or dimensions in GLOBE model.

Notes

1. This paper is different from Park et al. (2012) and Rowley et al. (2013) in that those previous studies have used a single theoretical perception whereas we have tried to blend diverse theoretical aspects to draw a clearer overall picture.
2. Hair et al. (2005) advise that the minimum acceptable Cronbach's alpha value is .5 (that is, researchers can consider the data collected through survey are reliable if alpha values are above .5).

JEL Classifications: M10, M16

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Table 1*Correlation Matrix*

	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11	12
1. Mode of establishment	0.37	0.48	1.00											
2. Industry characteristics	0.34	0.47	0.10*	1.00										
3. Size	258.82	951.73	0.04	0.02	1.00									
4. Age	17.65	12.47	-0.02	0.14**	0.27**	1.00								
5. Knowledge tacitness	3.60	0.44	0.03	0.05	-0.01	0.01	1.00							
6. Knowledge development capability	3.30	0.77	-0.16**	0.00	0.09	-0.10	-0.06	1.00						
7. Possession of prior related knowledge	2.55	1.09	0.13**	-0.13**	-0.03	0.02	-0.01	-0.06	1.00					
8. Subsidiary willingness	3.49	0.61	0.05	0.05	0.05	0.05	-0.03	0.19**	0.09	1.00				
9. Subsidiary autonomy	2.49	0.67	0.09	0.05	0.03	-0.06	-0.03	0.13**	0.12*	0.19**	1.00			
10. Knowledge integration mechanism	3.11	0.60	-0.08	0.03	0.00	-0.05	-0.02	0.20**	-0.05	0.11*	0.06	1.00		
11. Trust	2.63	1.09	0.08	-0.00	-0.02	0.07	0.08	0.13**	0.27**	0.24**	0.17**	0.23**	1.00	
12. Organizational distance	3.54	0.57	-0.00	0.03	0.06	0.03	-0.03	0.22**	0.07	0.89**	0.16**	0.17**	0.27**	1.00
13. Extent of RKT	2.69	0.75	-0.08	-0.02	0.02	-0.09	0.04	0.22**	0.10*	0.36**	0.30**	0.19**	0.26**	0.31**

N = 432

** p < 0.01; * p < 0.05

Table 2*OLS Regression Analyses for Reverse Knowledge Transfer from Subsidiaries*

Variables	Model 1	Model 2	Model 3	VIF
<i>Controls</i>				
Mode of establishment	-0.077 [†]	-0.055	-0.083 [†]	1.105
Industry characteristics	-0.028	-0.018	-0.036	1.070
Size	0.090 [†]	0.124 [*]	0.097 [*]	1.111
Age	-0.100 [*]	-0.134 ^{**}	-0.106 [*]	1.140
Knowledge tacitness	0.079 [†]	0.051	0.064	1.020
<i>Knowledge Transfer capacity</i>				
Knowledge development capability	0.152 ^{**}		0.123 ^{**}	1.168
Possession of prior related knowledge	0.036		0.024	1.116
Subsidiary willingness	0.295 ^{***}		0.435 ^{***}	4.772
Subsidiary autonomy	0.235 ^{***}		0.224 ^{***}	1.108
<i>Relational capital</i>				
Knowledge integration mechanism		0.104 [*]	0.105 [*]	1.112
Trust		0.170 ^{**}	0.113 [*]	1.229
Organizational distance		0.252 ^{***}	-0.182 [†]	4.860
	R ²	0.254	0.176	0.290
	Adjusted R ²	0.236	0.159	0.268
	F	14.532 ^{***}	10.272 ^{***}	12.943 ^{***}

Notes:

Coefficients are standardized.

N = 432; [†] p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

Table 3*Summary of Hypothesis Testing*

Hypothesis 1	Knowledge development capability by subsidiaries will positively increase their reverse knowledge transfer to MNCs.	Supported
Hypothesis 2	The possession of prior related knowledge by subsidiaries will positively increase their reverse knowledge transfer to MNCs.	Rejected
Hypothesis 3	Subsidiaries' willingness to share own information will positively increase their reverse knowledge transfer to MNCs.	Supported
Hypothesis 4	Subsidiaries' autonomy is positively associated with their reverse knowledge transfer to MNCs.	Supported
Hypothesis 5	Knowledge integration mechanisms will positively increase subsidiaries' reverse knowledge transfer to MNCs.	Supported
Hypothesis 6	Trust will positively increase subsidiaries' reverse knowledge transfer to MNCs.	Supported
Hypothesis 7	Organizational distance will decrease subsidiaries' reverse knowledge transfer to MNCs.	Partially supported

Figure 1

Interaction effects of 'knowledge development capability' and 'organizational distance' on subsidiary's RKT

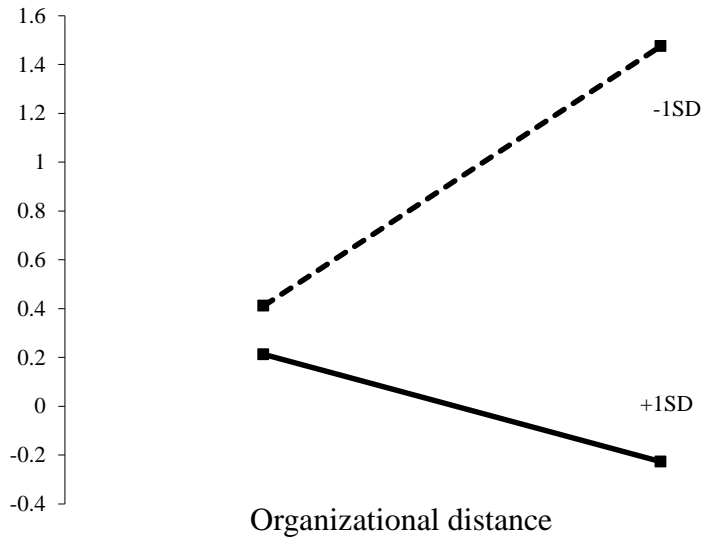


Figure 2

Interaction effects of 'possession of prior related knowledge' and 'organizational distance' on subsidiary's RKT

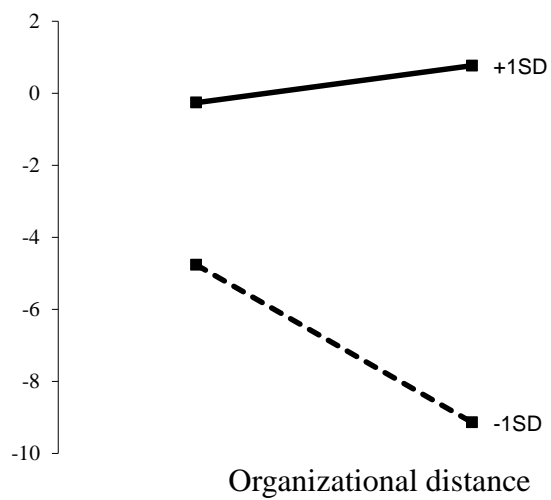


Figure 3

Interaction effects of 'willingness' and 'organizational distance' on subsidiary's RKT

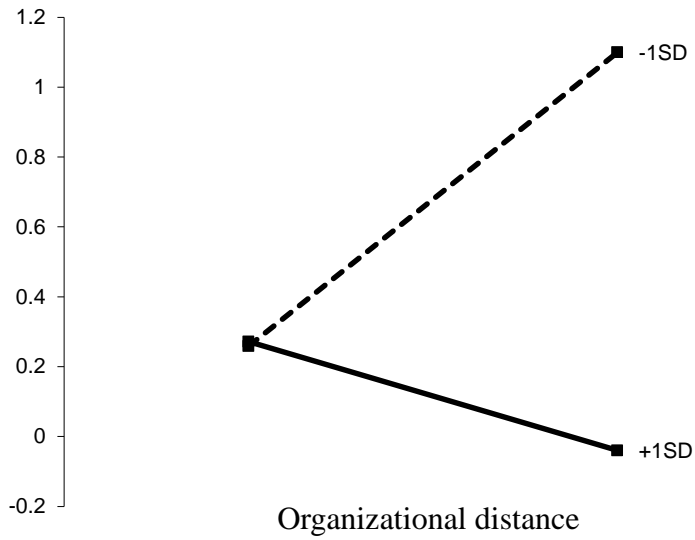


Figure 4

Interaction effects of 'autonomy' and 'organizational distance' on subsidiary's RKT

