

The Effects of Headquarters' Levels of Control and Subsidiaries' Local Experiences on Competency in Foreign Subsidiaries: A Quadratic Model Investigation of Korean Multinational Corporations^{*}

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Abstract

Purpose – This study aims to overcome the limitations of existing studies, which linearly determine the precedence factors of competency in overseas subsidiaries. The research objectives are as follows. First, what kind of nonlinear effects does the level of control held by Korean headquarters over foreign subsidiaries have in terms of competency in the subsidiaries? Second, what kind of nonlinear effects do the local experiences of overseas subsidiaries have on their competency?

Design/methodology – With data on Korean multinational corporations (MNCs), this paper analyzes the effects of control levels of headquarters (HQs) and host-country experiences of foreign subsidiaries regarding competency in overseas subsidiaries. In particular, this study focuses on nonlinear models, differentiating it from previous studies. In order to examine research hypotheses, this study conducted a survey of overseas subsidiaries of Korean corporations. Surveys were conducted through various methods including e-mail, online questionnaires, fax, and telephone calls. Copies of the questionnaire were distributed to a total of 2,246 overseas subsidiaries, and 409 completed responses were collected. Excluding 15 copies that were insufficiently answered, responses from a total of 394 copies were used for analysis.

Findings – This study presents the following results. First, there is a U-shaped relationship between levels of HQ control and competency in foreign subsidiaries. This means that higher levels of HQ control negatively impact the competency levels of subsidiaries because strict control undermines autonomy in subsidiaries. However, if the level of HQ control exceeds a certain point, then the transfer of knowledge between HQs and subsidiaries is facilitated. Knowledge transferred from HQs can be used as prior knowledge by foreign subsidiaries to the benefit of all parties. Accordingly, knowledge transfer negates the negative effects of excessive HQ control and positively affects competency in subsidiaries. Second, there is an inverted U-shaped relationship between the local (host-country) experiences of subsidiaries and competency in foreign subsidiaries. This means that foreign subsidiaries can overcome the liabilities of foreignness and contribute to capability building by accumulating unique knowledge about their host countries. However, if local experiences accumulate excessively beyond a certain point, then the host country-specific experiences of foreign subsidiaries will offset the benefits discussed above. Excessive local experiences not only increase organizational inertia, but also create a problem of goal incongruence due to information asymmetry between HQs and subsidiaries. Therefore, excessive local experiences have negative effects on competency in foreign subsidiaries.

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Originality/value – This study suggests the following implications. First, unlike existing studies based mainly on linear models, this study presents important theoretical implications in its focus on nonlinear models and its analysis of the effects of HQ control and local experiences on competency in foreign subsidiaries from perspectives of organizational learning theory and agency theory. Second, in terms of practical implications, the results of this study suggest that optimally raising levels of HQ control and managing the local experiences of subsidiaries without increasing organizational inertia is important for enhancing competency in foreign subsidiaries.

Keywords: Competency in Foreign Subsidiary, Level of HQ Control, Local Experience of Foreign Subsidiary, Quadratic Model

JEL Classifications: F20, F23, F29

1. Introduction

The networks of multinational corporations (MNCs) comprise headquarters and overseas subsidiaries, which are dispersed throughout various countries. For a multinational corporation that functions this way, the control, coordination, and management of overseas subsidiaries is extremely important scaffolding, which is closely related to the survival and growth of the multinational corporation itself (Birkinshaw and Hood, 1998; Frost, 2001; Holm, Holmström and Sharma, 2005; Werner, 2002). The overseas subsidiaries of an MNC play a special role in forming a connection between the environments of the host countries and the network of the MNC (Sumelius and Sarala, 2008). In addition, subsidiaries can provide firm-specific advantages to MNCs when the knowledge produced by the overseas subsidiaries in host countries is incorporated into existing knowledge within MNC networks (Almeida and Phene, 2004; Birkinshaw et al., 1998; Kogut and Zander, 1992). In other words, the knowledge developed in overseas subsidiaries is transferred to and utilized by headquarters or other overseas locations around the world, thus becoming an important competitive advantage for MNCs on a global scale (Sumelius and Sarala, 2008). Accordingly, optimizing the control, coordination, and management of overseas subsidiaries has become an important area of research in the field of global strategic management, receiving the attention of numerous scholars and experts (Ambos, Asakawa and Ambos, 2011; Ghoshal and Nohria, 1989; O'Donnell, 2000; Sumelius and Sarala, 2008; White and Poynter, 1984). In particular, certain studies have focused on the importance of MNC competency levels in retaining overseas subsidiaries with outstanding capabilities in order for whole MNC networks to gain a competitive advantage. Thus, researchers have conducted studies pertaining to the competencies of overseas subsidiaries (Andersson and Forsgren, 2000; Frost, 2001; Holm and Pedersen, 2000). These studies refer to overseas subsidiaries that provide important resources or capabilities, thus contributing to an MNC's competitive advantage as "centers of excellence". The existing research has investigated how these centers of excellence improve the overall competitiveness of MNCs (Andersson and Forsgren, 2000; Frost, 2001; Holm and Pedersen, 2000). Similarly, another group of studies is based on a framework suggested by Bartlett and Ghoshal (1998), which establishes the strategic significance of local environments and competency of overseas subsidiaries as two important axes. Using this framework, previous research has emphasized that competency in overseas subsidiaries is a significant precedence factor for success outcomes in MNCs (Birkinshaw and Morrison, 1995; Delios and Beamish, 2001).

Many scholars in the field of global strategic management have focused on how competency in overseas subsidiaries is an extremely important influencing factor in the survival and growth of MNCs, as well as the success of overseas subsidiaries themselves. Numerous studies have investigated the relationships between the competency levels of

overseas subsidiaries and competitiveness and success outcomes in MNCs. Unfortunately, despite the strategic importance of optimizing competency in overseas subsidiaries within MNC networks, studies attempting to investigate the factors that influence competency in overseas subsidiaries have not received much attention. Some exceptional existing studies have attempted to identify influencing factors on competency in overseas subsidiaries with respect to Korean multinational corporations. Such studies have been mostly based on a linear model to determine these factors. In contrast, the present study differs from existing studies by presenting a nonlinear model.

In this way, the present study aims to overcome the limits of existing studies that attempt to linearly determine the precedence factors of competency in overseas subsidiaries. In pursuing this objective, this study attempts to use a nonlinear model to establish the extent of influence of the level of HQ control and the impact of local experiences for overseas subsidiaries on competency in overseas subsidiaries. Because multinational corporations possess many overseas subsidiaries that are geographically dispersed (Roth and Nigh, 1992), the level of control exercised by MNC headquarters upon overseas subsidiaries can have immense effects on the comprehensive activities of the overseas subsidiaries (Birkinshaw, 1997; Johnston and Menguc, 2007; Luo, 2003). Furthermore, while overseas subsidiaries are members of MNC networks, they are also members of networks in their host countries (Collinson and Wang, 2012). As such, the local experiences of the overseas subsidiaries have significant effects on their production knowledge and on their competency development (Delios and Beamish, 2001). For these reasons, the present study considers the level of control by headquarters and the local experiences of overseas subsidiaries as important precedence factors for competency in overseas subsidiaries.

The ultimate research objectives of the present study are as follows. First, what kind of nonlinear effects does the level of control held by Korean headquarters over foreign subsidiaries have on competency in the subsidiaries? Second, what kind of nonlinear effects do the local experiences of overseas subsidiaries have on their competency?

2. Literature Review and Hypotheses

Many previous studies in the field of international business strategy have considered the impact of control levels by headquarters on overseas subsidiaries as a concept that is contrary to the autonomy of overseas subsidiaries. These studies tend to perceive trade-offs between HQ control and autonomy in overseas subsidiaries (Johnston and Menguc, 2007; Nobel and Birkinshaw, 1998). In other words, the question of how much control a headquarters exercises over its overseas subsidiaries tends to be equated with the question of how much autonomy the headquarters grants to these subsidiaries. Previous research on the level of control imposed by headquarters on overseas subsidiaries has focused on this duality. In arguing for and against the issue, the first group of research emphasizes the cons of control, with studies focusing on the negative effects of HQ control on the overall business operations of overseas subsidiaries (Birkinshaw et al., 1998; Hill and Hellriegel, 1994). These studies assert that excessive control over foreign subsidiaries by MNC headquarters impedes the autonomy of overseas subsidiaries. In turn, the opportunities of foreign subsidiaries to learn on their own in local markets are limited. According to these studies, such limitations create obstacles to growth and experience accumulation for subsidiaries in host countries worldwide (Birkinshaw et al., 1998; Birkinshaw and Hood, 1998; Luo, 2003). Furthermore, as many studies point out, autonomy in overseas subsidiaries has positive effects on their innovative abilities (Ghoshal and Bartlett, 1986), while a high level of control exercised by headquarters

can hinder the innovative activities of subsidiaries. The pursuit of innovation facilitates the development of new knowledge and capabilities through autonomous learning insofar as subsidiaries are free to discover new opportunities in local markets on their own (Birkinshaw et al., 1998; Birkinshaw and Hood, 1998).

A second group of research emphasizes the positive aspects of control. Most of these studies focus on the increased transfer of tangible and intangible assets from headquarters to overseas subsidiaries due to higher levels of HQ control. The research highlights the strict control of headquarters as a mechanism for stimulating the smooth transfer of knowledge between headquarters and overseas subsidiaries (Egelhoff, 1988). In other words, through the control of headquarters, overseas subsidiaries can effectively receive valuable proprietary resources and knowledge from headquarters. When such resources and knowledge are amassed by subsidiaries as prior knowledge in local markets, the absorptive competency of subsidiaries is bolstered (Cohen and Levinthal, 1990). Ultimately, the exploitation of control can be used as a primary source of learning (March, 1991). Moreover, from a perspective of global integration, the control of headquarters over overseas subsidiaries provides assistance in managing the overseas subsidiaries in a direction that will increase the overall competitive advantages of entire MNCs. In this way, overseas subsidiaries stand to develop abilities that MNC headquarters require within the framework of global strategic operations (Bartlett and Ghoshal, 1986/1998).

In particular, MNC overseas subsidiaries are an intersection of MNC networks and local business networks in host countries. Accordingly, overseas subsidiaries learn through their interactions with internal and external environments and internal and external organizations, acquiring unique knowledge and developing discrete capabilities (Collinson and Wang, 2012). Furthermore, because overseas subsidiaries have certain disadvantages due to being foreigner companies, they must learn to conduct their business operations according to the political, legal, economic, and sociocultural environments of their host country. In some cases, these aspects are significantly different than the environments of subsidiaries' home countries (Zaheer, 1995). In addition, useful knowledge for competitive superiority not only has implicit characteristics, but also is unique in that it is not easily transferrable due to knowledge stickiness (Jensen and Szulanski, 2004; Li and Hsieh, 2009; Szulanski, 1996/2000). Consequently, under low levels of control, knowledge transfer between headquarters and overseas subsidiaries is difficult to achieve smoothly. In fact, due to knowledge stickiness, the receipt of useful knowledge from headquarters is scarce for many foreign subsidiaries (Szulanski, 1996). In some aspects, the difficulty of paying foreigner costs (Zaheer, 1995) causes HQ control of overseas subsidiaries to negatively impact the development of capabilities in overseas subsidiaries. However, in the building of capabilities in overseas subsidiaries, any negative impact of control can in fact be alleviated by increasing levels of HQ control. As the level of HQ control increases, the transfer of knowledge between headquarters and overseas subsidiaries happens more easily (Gupta and Govindarajan, 2000), and the special knowledge of headquarters is utilized as prior knowledge of the overseas subsidiaries. This transaction establishes the absorptive competency of overseas subsidiaries (Cohen and Levinthal, 1990), which contributes to the strengthening of their capacities. Thus based on the discussion above, the following hypothesis can be deduced.

H1: The level of control of headquarters and the level of competency in overseas subsidiaries will have a U-shaped relationship. In other words, high levels of control of headquarters over foreign subsidiaries have a negative impact on competency in overseas subsidiaries. Above a certain threshold, however, the level of control of headquarters will have a positive impact on competency in overseas subsidiaries.

Organizational learning theory provides an abundance of perspectives on how organizational knowledge is produced and transformed (Özsomer and Gençtürk, 2003; Schulz, 2001). According to average standards, organizational learning signifies the development of knowledge and perceptions that promote behavioral changes in an organization to improve organizational performance (DiBella, Nevis and Gould, 1996; Fiol and Lyles, 1985; Sinkula, 1994; Slater and Narver, 1995). Organizational learning theory can be applied to the context of multinational corporations. Because multinational corporations are composed of headquarters and numerous overseas subsidiaries, MNCs can utilize overseas subsidiaries as a means to acquire, assimilate, and exploit various aspects of host country-specific knowledge in order to achieve a competitive advantage for the entire MNC (Liu et al., 2016). In other words, the competency of overseas subsidiaries in acquiring and exploiting host country-specific market knowledge may be an important competitive edge for MNCs in their entirety. Thus the local experiences of overseas subsidiaries must be considered as important precedence factors in their competency development (Eriksson et al., 1997; Eriksson, Majkgård and Sharma, 2000). Many previous studies emphasize the importance of experiential learning for honing MNC competitiveness from this perspective of organizational learning (Chang, 1995; Delios and Beamish, 2001). For example, because multinational corporations lack understanding of a local market's political, legal, economic, sociocultural, and institutional dimensions in comparison to local corporations, the foreign arms of MNCs are bound to carry liabilities by virtue of their being foreign (Zaheer, 1995). Such liabilities can be overcome through the accumulation of experience and competency (in other words, through experiential learning), which can be applied in the host country market (Chang, 1995; Delios and Beamish, 2001; Gao et al., 2008). In other words, the liabilities of foreignness that overseas subsidiaries encounter can be offset through various experiences that are accumulated through direct business operations on the part of overseas subsidiaries in host countries. Consequently, the local experiences of overseas subsidiaries allow them to effectively respond to unique requests or preferences of local consumers, thereby enabling them to acquire host country-specific knowledge that is necessary for optimal business operations (Eriksson et al., 1997). In turn, this process has a positive impact in the building of competency in overseas subsidiaries.

However, similar to the law of diminishing marginal utility in economics, it is difficult for the positive effects of experiential learning-based knowledge gained in any host country by subsidiaries to appear consistently and equally in levels of competency. Inevitably, this effect will decrease. If positive effects on competency in overseas subsidiaries' due to local experiences were consistent and equal, then corporations with abundant experiences would forever have a competitive edge in host countries based on this superior competency. However, as Kodak and Fuji have done in the photography industry, and as Nokia and BlackBerry have done in the cellular phone industry, corporations with abundant experiences do not always maintain high levels of competitiveness (Laamanen, Lamberg and Vaara, 2016; Lucas Jr. and Goh, 2009). Instead, an abundance of experience may be, in effect, a set of core rigidities for an organization, prohibiting them from effectively responding to quickly changing environments (Leonard-Barton, 1992). In particular, following Bennett and Lemoine (2014) in characterizing today's business environment as one of volatility, uncertainty, complexity, and ambiguity (VUCA), we see how, in certain cases, sustainable technology can become a major obstacle to the survival of a corporation (Christensen, 2016). Furthermore, some overseas subsidiaries cling to past successful experiences and end up relying too much on organizational routines that are behind the times, thus falling into competency traps (Levitt and March, 1988; March, 1991). This may impede the effective

response of subsidiaries to fast-changing environments and new opportunities due to organizational inertia (Hannan and Freeman, 1984; Kelly and Amburgey, 1991). In addition, from a perspective of agency theory, host country-specific knowledge accumulated by overseas subsidiaries through experiential learning can cause an asymmetry of information between headquarters (the principal) and overseas subsidiaries (agents). Information asymmetry, in turn, can cause goal incongruence between headquarters and overseas subsidiaries (Eisenhardt, 1985; Jensen and Meckling, 1976; Nohria and Ghoshal, 1994; O'Donnell, 2000). In this way, overseas subsidiaries with an abundance of local experiences may prioritize their own interests over the health or profit of the MNC as a whole (Jensen and Meckling, 1976; O'Donnell, 2000). This tension may strain close, cooperative relationships between headquarters and subsidiaries, thereby impeding the smooth transfer of knowledge between headquarters and subsidiaries.

In conclusion, the local experiences of overseas subsidiaries strengthen their levels of competency by allowing them to accumulate useful host country-specific knowledge. However, when local experiences are excessively accumulated or prioritized, organizational inertia also increases, thus making it difficult for subsidiaries to effectively respond to changing environments (Hannan and Freeman, 1984; Kelly and Amburgey, 1991). Furthermore, goal incongruence caused by information asymmetry between headquarters and overseas subsidiaries has the potential to disrupt the smooth transfer of knowledge between headquarters and subsidiaries. Ultimately, this has a negative effect on competency building in subsidiaries (Jensen and Meckling, 1976; O'Donnell, 2000). Accordingly, we formulate the following hypothesis.

H2: The local experiences of overseas subsidiaries and competency levels in overseas subsidiaries will have an inverted U-shaped relationship. In other words, the local experiences of overseas subsidiaries will have a positive effect on competency in overseas subsidiaries to a certain point. Beyond this threshold, however, local experiences will have a negative effect on competency in overseas subsidiaries.

3. Methodology

3.1. Data Selection

In order to verify the research hypotheses herein, the study conducted a survey of overseas subsidiaries of Korean corporations. First, a list of Korean corporations was collected using the Korea Chamber of Commerce and Industry (KochamBiz) and Korea Stock Exchange (KRX) websites, and information regarding overseas subsidiaries was acquired through the "Directory of Korean Corporations' Overseas Expansion" published by Korea Trade-Investment Promotion Agency (KOTRA). Subsequently, surveys were conducted based on these lists. Surveys were administered via various methods including e-mail, online platforms, fax, and telephone calls, and in order to increase response rates, respondents were asked to participate through international calls. Copies of the questionnaire were distributed to a total of 2,246 overseas subsidiaries, and 409 completed copies were collected. Excluding 15 copies that were insufficiently answered, responses from a total of 394 copies were used for final analysis. The national distribution of the sample is as follows. The countries with the largest number of subsidiaries were followed by China (138), the United States (57), Vietnam (26), Japan (18), Indonesia (13), Germany (12) and others (130).

3.2. Variables

3.2.1. *Dependent Variable*

The dependent variable in the present study is competency in overseas subsidiaries. Using the research of Frost, Birkinshaw and Ensign (2002) for reference, this variable is measured on a seven-point Likert scale (with scores ranging from 1 = very low competency to 7 = very high competency) for levels of competency in overseas subsidiaries. Competency is measured in discrete areas including research and development, production of products and services, marketing and sales, logistics and distribution, purchasing, and human resources management.

3.2.2. *Independent Variables*

Independent variables in the present study are headquarters' levels of control and the local experiences of overseas subsidiaries. Using the work of Ghoshal et al. (1994) and Johnston and Menguc (2007) for reference, headquarters' level of control is measured by examining which party executes decision-making (with scores ranging from 1 = decided by overseas subsidiaries to 7 = decided by headquarters) in differing areas including organization structure, production/sales/marketing, introduction and development of new products and services, personnel policies, financial affairs, and the establishment of business goals.

Using the work of Yang et al. (2008) for reference, local experiences were measured by determining the number of years elapsed from a subsidiary's founding year, and then taking the log of that value.

3.2.3. *Control Variables*

The present study includes the following control variables in the research model. First, the age and the size of the headquarters and the size of the overseas subsidiaries were controlled. The age and the size of a corporation are important factors that can influence the overall business operations of the corporation, and they can also influence the learning competency of the corporation (Brush and Vanderwerf, 1992; Dodgson, 1993; Park Jung-Min, Lee Jae-Eun and Jung Yun-Ho, 2018; Simonin, 1997). Using the research of Yang et al. (2008) for reference, the age of headquarters was calculated by determining the number of years elapsed from the year of HQ establishment, and then taking the log of that value. Headquarters' size was calculated by taking the log of the total number of HQ employees, using the work of Björkman et al. (2004) and Gupta and Govindarajan (2000) for reference. Again using Björkman et al. (2004) and Gupta and Govindarajan (2000) for reference, the size of overseas subsidiaries was calculated by taking the log of the total number of employees at the facilities of overseas subsidiaries.

Next, headquarters' percentage of shares was considered as a control variable. The percentage of shares of overseas subsidiaries owned by headquarters is a critical index in showing the importance of headquarters regarding the subsidiary. Using the research of Belderbos and Heijltjes (2005) for reference, the percentage of shares was measured by the ratios of shares in overseas subsidiaries owned by headquarters.

Furthermore, in order to control for the unique characteristics of each country and industry, some variable numbers were produced and used as control variables. First, in order to control for the economic standards of a host country, a country dummy variable was produced (for developed countries). This variable was coded as "1" for countries with a higher gross domestic product (GDP) per person than Korea and as "0" for countries without a higher GDP per person than Korea. The types of industries wherein overseas subsidiary

function has an impact on learning competencies in subsidiaries. Accordingly, industry was also used as a control variable (Li, 1995). Depending on whether the industry in which a certain overseas subsidiary functions is a capital intensive industry ("1" for capital intensive industry and "0" for other industries) and whether the industry is a global industry ("1" for global industry and "0" for other industries), capital intensive and global industry dummy variables were calculated and included in analyses.

In addition, cultural distance was established as a control variable. This variable is an index that calculates the cultural distance between two countries based on cultural dimensions suggested by Hofstede (1980) and explored in the work of Kogut and Singh (1988). Following the method proposed by Kogut and Singh (1988), the cultural distance between the home country (South Korea) and the host country was calculated and used in the analysis as follows.

$$CD_j = \sum_{i=1}^4 \left\{ (I_{ij} - I_{ik})^2 / V_i \right\} / 4 \quad (1)$$

CD_j: the cultural distance between Korea and country (*j*)

I_{ij}: country (*j*)'s score on the (*i*)th cultural dimension

I_{ik}: the score of Korea on the (*i*)th cultural dimension

V_i: the variance of the index of the (*i*)th cultural dimension

Another control variable was the level of support provided by headquarters, because HQ support for overseas subsidiaries can promote the transfer of various aspects of knowledge and expertise (Gupta and Govindarajan, 2000). Using the research of Hong and Choe (2006) for reference, the level of support of headquarters was measured by the degree of support for overseas subsidiaries provided by headquarters (with scores ranging from 1 = no support provided at all to 7 = active support provided) in discrete areas including skills and expertise, dispatching of experts for support, education and training, and methodological guidance.

Finally, the local embeddedness of overseas subsidiaries was established as a control variable. When overseas subsidiaries are more embedded in local networks, their ability to develop new products increases. This, in turn, positively impacts their competitive advantage (Andersson et al., 2002; Lane and Lubatkin, 1998). Using the research of Andersson et al. (2002) for reference, the local embeddedness of overseas subsidiaries was measured by the degree to which overseas subsidiaries reflect the demand of companies with whom they do business in host countries (with scores ranging from 1 = not reflected at all to 7 = actively reflected) in various domains including product design and standards, general business practices, and standard business administration processes.

4. Results

Before testing the research hypotheses, analysis for validity and reliability was conducted. The results of analysis are presented in Table 1. As shown, the constructs used herein are clearly classified. The load values of all of the factors were over 0.5, confirming the validity of the study. Furthermore, the study's reliability was tested using Cronbach's alpha values, with analysis showing that the Cronbach's alpha values of all of the variables were over 0.7. These results confirm that the measured values of the study have no problems in reliability (Nunnally, 1978).

Some variables in this study were measured in questionnaires and therefore the possibility

of common-method bias (CMB) cannot be completely ruled out. We tried to reduce the possibility of CMB through the following process. First, we tried to minimize the possibility of CMB by measuring each variable with a number of questions (Podsakoff and Organ, 1986). Second, we also conducted the Harman's one-factor test (Podsakoff and Organ, 1986), to check the possibility of CMB. According to the analysis, it was found that the factor with the greatest explanatory power constituted only 23.476% of the total variance. Therefore, we were able to conclude that the probability of CMB in this study was not serious (Podsakoff et al., 2003).

Table 1. Validity and Reliability Analysis

	(1) Level of HQ control	(2) Level of HQ support	(3) Local embeddedness of subsidiary	(4) Subsidiary competency
Level of HQ control 1	.776	.02	.103	-.076
Level of HQ control 2	.823	.124	-.025	-.035
Level of HQ control 3	.724	.139	-.153	.010
Level of HQ control 4	.709	-.052	.021	-.133
Level of HQ control 5	.580	-.031	.090	.087
Level of HQ control 6	.727	.038	.067	.015
Level of HQ support 1	.070	.892	.107	.014
Level of HQ support 2	.068	.878	.030	.020
Level of HQ support 3	.014	.871	.012	.087
Level of HQ support 4	.027	.902	.089	.028
Local embeddedness of subsidiary 1	.031	.031	.701	.039
Local embeddedness of subsidiary 2	-.018	.022	.797	.026
Local embeddedness of subsidiary 3	.060	.053	.800	.021
Local embeddedness of subsidiary 4	.045	.102	.793	.011
Subsidiary competency 1	.067	.035	.002	.854
Subsidiary competency 2	-.054	.087	.012	.861
Subsidiary competency 3	.002	.018	.011	.812
Subsidiary competency 4	-.056	.012	.049	.937
Subsidiary competency 5	-.058	.022	.029	.890
Subsidiary competency 6	-.030	.006	.039	.922
Eigen value	4.695	3.203	3.202	2.470
Communality (%)	23.476	16.014	16.011	12.348
Accumulate communality (%)	23.001	39.490	55.501	67.849
Cronbach's alpha	0.826	0.914	0.779	0.941

Table 2 presents descriptive statistics and correlation analysis results of the variables used in this study. As shown, the correlations between each of the variables in the study were at satisfactory levels. However, in order to examine the possibility of multicollinearity, additional analysis was conducted. Previous studies on this topic suggest that the possibility of multicollinearity is not a concern if the value of the variance inflation factor (VIF) is lower than 10 and if the condition index (CI) is lower than 30 (Chatterjee and Hadi, 2006; Hair et al., 1998). The results of analysis show that the maximum value of VIF was 1.973 (minimum value = 1.065, mean = 1.296), while the maximum value of CI was 26.451 (minimum value = 1.000, mean = 8.610). Because the values are within acceptable ranges as suggested by previous studies, the present study has no concerns of multicollinearity.

Table 2. Validity and Reliability Analysis

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬
① Subsidiary competency	1												
② HQ age	.050	1											
③ HQ size	.085	.148**	1										
④ Level of HQ support	.317**	-.002	.198**	1									
⑤ Subsidiary size	.194**	-.019	.202**	.221**	1								
⑥ Local embeddedness	.299**	-.033	-.041	.132**	.024	1							
⑦ Ownership	.064	-.067	-.151**	.023	-.045	.105*	1						
⑧ Country dummy	.016	.103*	.003	-.151**	-.433**	.063	.124*	1					
⑨ Industry dummy (capital intensive)	-.028	.203**	-.158**	.033	-.009	-.075	-.035	-.085	1				
⑩ Industry dummy (global)	-.015	-.075	.157**	.113*	.229**	-.072	.040	-.035	-.296**	1			
⑪ Cultural distance	-.017	-.029	-.050	-.088	-.221**	.022	.142**	.604**	-.031	.033	1		
⑫ Level of HQ control	-.052	-.027	-.049	.102*	-.036	.060	.062	.067	-.081	.026	.011	1	
⑬ Local experience	.128*	.080	.001	.007	.028	-.008	.030	.094	.073	-.040	.079	-.055	1
Mean	4.81	41.38	6761.764.63	4.42	4.74	92.03	.32	.32	.31	2.12	3.90	17.10	
Standard deviation	.98	14.92	13914.41.33	1.84	1.09	17.14	.47	.47	.46	1.06	1.31	101.4	
Minimum value	1.67	5.00	18.00	1.00	0.00	1.00	10.00	.00	.00	.10	1.00	1.00	
Maximum value	7.00	87.00	85094	7.00	9.10	7.00	100.00	1.00	1.00	1.00	5.58	7.00	55.0

Note: * $p < 0.05$, ** $p < 0.01$ (two-tailed tests).

The results of final regression analysis are presented in Table 3. First, Model 1, including only control variables, is the standard model for which regression analysis was conducted. The results of analysis show that the following variables had a positive (+) impact at a significant level on the competency of overseas subsidiaries: level of support provided by headquarters ($p < 0.01$), size of subsidiaries ($p < 0.01$), local embeddedness of subsidiaries ($p < 0.01$), and country dummy (for developed countries) ($p < 0.01$).

Model 2 shows the results of regression analysis including the level of control by headquarters, which was an independent variable, together with the squared terms of this variable. The results of analysis show that the following variables had a positive (+) impact at

Table 3. Regression Analysis

Variable	Subsidiary competency			
	Model 1	Model 2	Model 3	Model 4
HQ age	0.050 (1.042)	0.051 (1.070)	0.011 (0.230)	0.014 (0.288)
HQ size	0.006 (0.122)	-0.006 (-0.128)	-0.004 (-0.079)	-0.015 (-0.317)
Level of HQ support	0.266*** (5.481)	0.289*** (5.967)	0.279*** (5.833)	0.300*** (6.278)
Subsidiary size	0.197*** (3.657)	0.187*** (3.510)	0.168** (3.154)	0.161*** (3.054)
Local embeddedness of subsidiary	0.241*** (5.108)	0.234*** (5.021)	0.239*** (5.152)	0.234*** (5.088)
Ownership	0.036 (0.754)	0.043 (0.915)	0.020 (0.425)	0.027 (0.593)
Country dummy (developed countries)	0.134** (2.084)	0.150** (2.357)	0.075 (1.164)	0.094 (1.464)
Industry dummy (capital intensive)	-0.038 (-0.751)	-0.044 (-0.881)	-0.039 (-0.784)	-0.045 (-0.923)
Industry dummy (global)	-0.075 (-1.507)	-0.052 (-1.037)	-0.057 (-1.161)	-0.038 (-0.777)
Cultural distance	-0.039 (-0.663)	-0.052 (-0.896)	-0.033 (-0.582)	-0.045 (-0.801)
H1 Level of HQ control		-0.814*** (-3.285)		-0.705*** (-2.871)
(Level of HQ control) ²		0.724*** (2.930)		0.610** (2.489)
H2 Local experience			2.063*** (3.482)	1.953*** (3.304)
(Local experience) ²			-1.951*** (-3.304)	-1.850*** (-3.141)
R ²	0.205	0.232	0.239	0.262
Adjusted R ²	0.184	0.208	0.215	0.234
ΔR ²		0.027***	0.034***	0.057***
F	9.782***	9.510***	9.875***	9.498***

Notes: 1. Standard coefficients are shown with t-value in parentheses.

2. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed tests).

a significant level on competency in overseas subsidiaries: level of support provided by headquarters ($p < 0.01$), size of subsidiaries ($p < 0.01$), local embeddedness of subsidiaries ($p < 0.01$), and country dummy (for developed countries) ($p < 0.01$). Furthermore, the results of verifying the effectiveness of the independent variable show that the level of control by headquarters ($p < 0.01$) had a significant negative (-) correlation with competency in overseas subsidiaries, but the squared term of this independent variable ($p < 0.01$) had a significant positive (+) correlation with competency in overseas subsidiaries. Ultimately, as predicted in Hypothesis 1, the level of control by headquarters and the success of subsidiaries are shown to have a U-shaped relationship. Consequently, the study's findings support Hypothesis 1.

Using the same method, Model 3 presents the results of regression analysis including the local experiences of overseas subsidiaries and the squared terms of this variable. The results of analysis show that the following variables had a positive (+) impact at a significant level on competency in overseas subsidiaries: level of support provided by headquarters ($p < 0.01$), size of subsidiaries ($p < 0.01$), and local embeddedness of subsidiaries ($p < 0.01$). Furthermore, the results of verifying the effectiveness of the independent variable show that the local experiences of subsidiaries ($p < 0.01$) had a significant positive (+) correlation with competency in overseas subsidiaries, but the squared term of this independent variable had a significant negative (-) correlation with competency in overseas subsidiaries. Ultimately, as predicted in Hypothesis 2, the local experiences of overseas subsidiaries and the success of subsidiaries are shown to have an inverted U-shaped relationship. Consequently, the study's findings support Hypothesis 2.

Finally, Model 4 presents the results of regression analysis including all of the control variables, independent variables, and squared terms of the independent variables. The results of analysis are the same as the results verified in the previous models, thereby confirming the reliability of analyses results.

5. Discussion and Conclusion

The present study conducts empirical analysis of the effects of levels of control by headquarters and local experiences of overseas subsidiaries on competency in overseas subsidiaries, using Korean corporations and a nonlinear model. First, the results of empirical analysis show that the level of control by headquarters on overseas subsidiaries has a U-shaped relationship with competency in overseas subsidiaries. In other words, strict levels of control on the part of headquarters impede autonomy and innovative activities in overseas subsidiaries in host countries, thus having a negative effect on their overall business operations (Birkinshaw et al., 1998; Ghoshal and Bartlett, 1998; Luo, 2003) and a negative impact on competency building in overseas subsidiaries (Birkinshaw et al., 1998; Hill and Hellriegel, 1994). After a certain threshold, however, heightened levels of control by headquarters promote smooth knowledge transfer between headquarters and subsidiaries (Gupta and Govindarajan, 2000) such that overseas subsidiaries can, in turn, utilize transferred knowledge as prior knowledge (Cohen and Levinthal, 1990). This process positively impacts competency building in overseas subsidiaries. Second, the local experiences of overseas subsidiaries have an inverted U-shaped relationship with competency in overseas subsidiaries. In other words, from the framework of experiential learning, overseas subsidiaries can accumulate host country-specific knowledge through local experiences, which can help them overcome the inherent disadvantages of being foreigner corporations (Zaheer, 1995). Ultimately, this process contributes to the strengthening of competency in overseas subsidiaries (Delios and Beamish, 2001; Gao et al., 2008). If local experiences are accumulated beyond a certain point, however, these experiences may become core rigidities in any organization (Leonard-Barton, 1992). Rigidity of organizational practices potentially increases organizational inertia, which makes effective adjustment to new opportunities and flexible responses to environmental changes more difficult in overseas subsidiaries (Hannan and Freeman, 1984; Kelly and Amburgey, 1991). Furthermore, excessive local experiences can give rise to issues of goal incongruence due to an asymmetry of information, thereby hindering healthy communication and knowledge transfer between headquarters and subsidiaries and negatively affecting competency in overseas subsidiaries.

Based on conclusions drawn herein, the following implications can be suggested. First,

unlike previous studies in this topic, which have focused on linear models, the present study provides significant theoretical implications based on investigation of the effects of headquarters' levels of control and overseas subsidiaries' local experiences using a nonlinear model from the perspectives of organizational learning theory and agency theory. Therefore, this study suggests the theoretical implication that there may be an optimal point for enhancing competency of foreign subsidiary in such nonlinear relationships based on the organizational learning theory and agent theory.

Second, the results of our empirical analysis stand to provide practical implications regarding the importance of effective management of overseas subsidiaries for strengthening competency in overseas subsidiaries. The strengthening of competency can be done by increasing headquarters' levels of control of overseas subsidiaries beyond a certain threshold, and by ensuring that goal incongruence does not occur due to excessive accumulation of local experiences in overseas subsidiaries. In other words, the results of this study suggest management implications that not only appropriate level of control but also management of local experience are essential to strengthen the competency of subsidiaries.

The present study is not able to overcome the following limitations. First, because empirical analysis was conducted based solely on overseas subsidiaries of Korean corporations, the results of analysis may be difficult to generalize. For example, in comparison to Western multinational corporations, Korean multinational corporations have more ethnocentric tendencies. This characteristic may be the reason that HQ control of overseas subsidiaries has a positive impact after a certain threshold in Korean MNCs. In order for the results of this research to be generalized, it is necessary to conduct comparative studies in MNCs and overseas subsidiaries of various nations. Second, while the present study considers headquarters' levels of control and subsidiaries' local experiences as two separate independent variables, these two variables can actually influence each other. The sample in the present study does not show a high correlation between the two variables. Nevertheless, there is a need to conduct further analysis by including interaction parameters between these variables in analysis models.

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