

What Attracts Corporate Headquarters? : Evidence from Seoul Metropolitan Area in Korea

Mingyu Kang

Researcher, Planning and Management Division,
Korea Research Institute for Human Settlements, Anyang, Korea

Jungho Park

Researcher, National Territorial Planning and Research Division,
Korea Research Institute for Human Settlements, Anyang, Korea

MijinJoo

Lecturer, Department of Urban Planning and Real Estate,
College of Social Sciences, Chung Ang University, Anseong, Korea

Abstract

Headquarters (HQs) play a pivotal role in managing, evaluating, and coordinating internal firm activities. It is well known that HQs not only perform such a core managerial function at an individual firm level, but they are also main agents of urban economic activities at a regional level. There has been a growing interest in geographical concentration of HQs as a fundamental engine of urban economic growth, while it often results in interregional conflicts.

This study provides insight into where HQs are located in Seoul Metropolitan Area (SMA) and what decision factors significantly influence their location. In Korea, HQs consistently continued to be attracted by SMA over the last decades resulting in the overwhelming regional disparity between SMA and non-SMA. Using both absolute and relative LISA analysis, concentration patterns of HQs revealed the rise of suburban areas and the fall of downtown area in SMA.

To measure firms' decision factors on their headquarters location, the Hierarchical Linear Model (HLM) is applied to headquarters located in SMA as of 2010. A firm's choice about where to locate its headquarters is significantly affected by diverse regional factors such as regional potential for economic growth, quality infrastructure, public investment, and amenity.

Such findings provide a fundamental basis for managing deeply conflicting policy goals such as promoting regional economic development and narrowing regional disparity in terms of HQs location.

Keyword: *Headquarters Location, LISA analysis, Hierarchical Linear Model*

1. Introduction

Corporate activities are the backbone of urban economies. Corporations activate the urban economy through the flow of capital, create jobs, and are a powerful force that attracts populations. In result, it eventually changes the spatial structure of cities (Kim Chang-seok, Nam Jin, 1996). This is why many cities spare no effort to attract corporations. In particular, corporate headquarters are where the pivotal functions of such corporate activities are concentrated in. Corporate headquarters are where strategic decision-making such as entry into new businesses, restructuring of existing businesses, and withdrawal from marginal businesses are made, and it also determines priority in resource distribution such as advertisements, accounting and legal services. Furthermore, they intervene in the relations of sub-organizations to look for ways to create synergy and also take on the role of controlling them (Henderson & Ono, 2008, HeoMun-gu, et al, 2002). In such multi-faceted corporations, the decisions of the headquarters have a huge effect on the overall performance of the corporation (Goold& Campbell, 1987). According to such context, the corporate headquarters is the face of the urban economy.

With the growth of companies and the scale of business, the single-corporation, single-factory system has gradually crumbled. Large corporations in which capital, technology and manpower are concentrated in have become a compound organization with one or more subsidiary companies, branch factories or branch offices (Kim Hyeong-guk, 2002). The mechanism in which a massive compound made up of a headquarters and branch offices was also discussed through the branch factory economic theory.

Such corporate headquarters is, naturally, metropolis-oriented. The reason behind this is because administrative, financial and business services are readily accessible and it is easier to procure information and high-end labor forces. The reason why several cities in Korea, with Seoul at its pinnacle, could grow so explosively was largely due to the outstanding performance of such corporate headquarters and its spatial concentration (Kim Chang-seok, Nam Jin, 1996). From this context, Korea's economic growth that began centering on private companies from the mid 1960s naturally led to an increase in corporate headquarters (Han Joo-seong, 2009). Basically, theories and studies that explain the functions, position and behavior of corporate headquarters went under the limelight. For example, neo-spatial division theories explained the separation of headquarters and branch offices due to the increased scope of businesses, and the phenomenon in which management functions focusing on the headquarters became concentrated in a handful of metropolises was analyze. Also, Semple&Phippes (1982) discussed how a headquarters that began as a single corporation selects an ideal location for their headquarters through a four-stage model.

A problem with this is that the concentration of corporate headquarters in metropolises is not unrelated to the regional gaps. The spatial separation of corporate headquarters that play pivotal management roles and branch offices that provide direct production activities and services differentiates the type of jobs in the regions. The corporate headquarters is mainly made up of office and managerial positions. Meanwhile, factories are mostly composed of production and service position. Differences in positions represent differences in income, which leads to an income gap among the communities. Likewise, the selection of location by corporate headquarters has a direct effect on the region's type of jobs and resource distribution, which will eventually lead to a difference in economic standings of the region (Lee Beon-song, Kim Seok-young, 2005). This phenomenon, which was coined as spatial division of labor, goes beyond

simply being an income gap, but creates a hierarchy of regions based on the controlling relationship of 'command-execution' (Kim Chang-seok, Nam Jin, 1996). In other words, as the headquarters of large corporations with high economic influence are concentrated in a specific city, that city obtains the function of giving commands to and controlling other cities (Kim Heon-min, Park Ji-yoon, 2005).

There are, however, quite a bit of objections against this. Many claim that corporations that are active in various regions actually contribute to the balanced development among various regions. According to Erickson (1976, 1980), branch factories of multi-regional corporations in the US contributed to regional development and also played a big role in reducing the gaps between different regions in America.

The different perspectives on the relationship of headquarters locations and regional gaps according to the division of corporate organizations are due to the lack of empirical studies. Despite the fact that the location of corporate headquarters and branch offices is a crucial factor explaining regional economies, there are no studies in Korea that closely examine what the level of inequality of corporate headquarters distributions is and what are the conditions for locations of headquarters. Meanwhile, a considerable amount of research related to the location of corporate headquarters have been conducted overseas. First, Davis & Henderson (2003) analyzed the factors for major corporations to decide upon the location of their headquarters from 1977 to 1997. According to them, headquarters located in urban areas separated the headquarters functions and plants. It was analyzed the factors for headquarters locations were based on the services offered by local governments and the benefits that were available by locating them near other headquarters. Also, Holt et al. (2006) analyzed the factors for selecting the location of headquarters among multi-national corporations. According to this study, the locational factors of multi-national corporate headquarters differed based on the main target market, regional infrastructure and industrial classification. Aside from this, Henderson (2008) analyzed that when determining the location of the headquarters, distance to branch offices, level of business services offered, and location of headquarters of other corporations were all taken into consideration.

Unlike the various preceding studies abroad, studies on corporate headquarters are relatively inactive due to the lack of data in Korea. Most studies stopped short at analyzing the locational patterns of corporate headquarters and the phenomenon in which they were concentrated in certain areas (Kwon Young-seob, 1992; Kim Chang-seok, Nam Jin, 1996). Meanwhile, most of the studies that analyzed the locational factors of corporate headquarters were based on qualitative methodologies such as questionnaires (Park Yang-ho, Kim Chang-hyeon, 2002; Yang Jae-seob, Kim Jeong-won, 2007). Though these studies may be appropriate for examining the macroscopic meanings that corporate headquarters in Korea hold, it is undeniable that they lack the ability to explain the corporate headquarters locational factors microscopically.

This study examines the locational status and factors of corporate headquarters in the Seoul metropolitan area in which the headquarters of Korean corporations are concentrated in. For this purpose, the phenomenon in which population and resources were concentrated in the Seoul metropolitan area for the past fifty years was reviewed and the overall industrial status of the region was analyzed. In addition, empirical analyses were made on the locational factors of corporate headquarters based on the national business survey (2010), and in particular, the regional features that have been overlooked in the past were separated from corporate features to analyze via a hierarchical linear model.

2. Development and Concentration of the Seoul Metropolitan Area

Urbanization in Korea for the past fifty years focused mainly on the Seoul metropolitan area. The background to how Korea could develop so quickly after passing a short period of modernization, which is called the 'Miracle of the Han River', was based on the concentration of the population in the Seoul metropolitan area (Kim Hyeong-guk, 1997). As the total population increased, population structure changed and the spatial distribution of the population changed simultaneously after the Korean War, the urbanization of Korea that was only 40.7% in 1970, rose to 73.8% in 1990, in a matter of just two decades. In 2010, it reached 82.9%, being at the same level of advanced nations such as the US (82.1%), Germany (73.8%), France (85.2%), England (79.5%), and Japan (90.5%) (UN, 2012).

The most prominent feature that appears during the course of Korean urbanization is that the population is concentrated in the Seoul metropolitan area. Normally, in the early stages of urbanization, population and industry is concentrated on the primate city because of the benefits it offers. However, the urbanization process in Korea was extremely dense that could shake the very settlement system of the entire territory, resulting in various urban problems.

Source: UN 「<http://esa.un.org/unpd/wup>, World Urbanization Prospects, the 2011 Revision」 2012. 6



Fig 1. Urbanization Trend and Prospect in Korea

Such problems can be confirmed through numbers. Compared to the nation's annual average population increase of 1.9% from 1966 to 1970 when industrialization started in earnest, Seoul's population increased by 9.4 times, five times more than the rest of the nation (Lee Hee-yeon, 2011). Through population dispersion policies afterwards, the rate of increase slowed down, but because of the excessive concentration of population and industries, it resulted in problems in a range of sectors including traffic, housing and environment.

After reaching complete saturation of population in the 1990s, Seoul began extending out to nearby areas, resulting in the development of five new cities in the Seoul metropolitan area. In result, the population of Seoul peaked in 1990 (24.4% of the entire population) and continued to drop until it dropped by 20.1% in 2010. When looking at only Seoul city, the population began its dispersion (Lee Hee-yeon, 2007; Lee Hee-yeon, 2011).

In contrast to the reduced population of Seoul city, the population of the Seoul metropolitan

area increased greatly. The population of new cities included in the metropolitan area began to increase quickly with the population dispersion policies of Seoul in 1990. Thus, the total population of the Seoul metropolitan area that includes Seoul, Incheon and Gyeonggi rose from 208% of the entire population in 1960 to 49.0% in 2010. In result of the highly compressed economic development urbanization since the 1960s, one in every two Koreans now live in the Seoul metropolitan area, which takes up only 11.8% of the total area of Korea.

3. Concentration of Headquarters in the Seoul Metro Politan Area

The Seoul metropolitan area is the cradle of life in which half of all Koreans live in and is the center of corporate activities. Korea maintained high economic growth since the 1960s, which is called the Miracle of the Han River, and pursued pan-national development base policies (Kwon Young-seob, 1992). In result, population and industries rapidly flocked into Seoul and most of administrative, social and cultural administration functions, including headquarters of private companies, rushed to Seoul. Moreover, as business support service industries such as legal, accounting and financial sectors also became concentrated in Seoul, corporate headquarters in other provinces also began moving to Seoul (Kim Chang-seok, Nam Jin, 1996).

Table1. Distribution of Headquarters

Category Region	Whole Industry		Primary Industry		Secondary Industry		Tertiary Industry	
	%	LQ	%	LQ	%	LQ	%	LQ
Seoul Metro politan Area	58.9	1.25	22.2	2.12	50.0	1.02	62.8	1.34
Seoul	34.6	1.59	4.8	5.10	16.2	0.94	42.5	1.89
Gyeonggi	20.1	0.98	15.9	1.83	28.2	1.08	16.8	0.85
Incheon	4.1	0.84	1.6	1.78	5.6	0.96	3.5	0.74
Busan	6.4	0.83	1.6	0.44	5.4	0.72	6.9	0.89
Daegu	3.6	0.66	1.6	2.34	3.7	0.56	3.6	0.67
Gwangju	2.4	0.82	0	0	2.4	0.95	2.5	0.81
Daejeon	2.6	0.90	0.8	2.08	2.2	1.01	2.7	0.93
Ulsan	1.5	0.73	0	0	2.1	1.21	1.3	0.61
Gangwon	2.1	0.61	9.5	1.43	2.1	0.85	2.1	0.58
Chungbuk	3.0	0.96	7.1	1.42	4.8	1.56	2.3	0.72
Chungnam	3.6	0.90	10.3	1.00	5.9	1.55	2.6	0.65
Chunbuk	2.7	0.72	7.9	0.81	3.1	0.99	2.5	0.65
Chonnam	3.2	0.84	9.5	0.66	4.1	1.17	2.7	0.72
Gyeongbuk	4.2	0.76	9.5	0.80	6.6	1.11	3.2	0.59
Gyeongnam	4.9	0.73	10.3	1.16	7.3	0.94	3.8	0.59
Jeju	0.8	0.61	9.5	0.58	0.4	0.53	1.0	0.67
	100.0	1.00	100.0	1.00	100.0	1.00	100.0	1.00

Source: The National Business Survey(2010)

As development for new cities around the Seoul metropolitan area began in the mid 1990s, the population of Seoul began to spread to other parts of the metropolitan area. Accordingly, some corporate headquarters also began moving their headquarters to the new cities in the Seoul metropolitan area. However, despite such trends to extend outwards, the concentration of industries in the Seoul metropolitan area still continues. On average from 1995 to 2010, 60% of the headquarters of all corporations in the nation were located in the Seoul metropolitan area and 80% of the headquarters for the top 3,000 companies and 90% of the top 100 companies were located in the Seoul metropolitan area. Furthermore, 83% of central administrative

institutes and 86% of institutes under the government were located in the Seoul metropolitan area (Lee Hee-yeon, 2011).

In order to examine the concentration level of corporate headquarters in the Seoul metropolitan area in this study, the national business survey (2010) was used to conduct analysis. Upon analyzing by business type and region, over half (58.9%) of the headquarters of industrial companies were located in the Seoul metropolitan area. Furthermore, primary industries were at 22.2%, secondary industries were at 50.0% and tertiary industries were at 62.8%, showing that the more advanced the industry, the higher the concentration in the Seoul metropolitan area.

In addition, this study analyzed the HLQ (Headquarter Location Quotient) that shows how much the location of the headquarters was specialized by using LQ (Location Quotient) used to judge the level of specialization. In result, primary industry (2.12), secondary industry (1.02), tertiary industry (1.34), and all industries (1.25) in the Seoul metropolitan area had HLQ values larger than 1. This shows that the concentration of corporate headquarters is very high. In particular, Seoul city in the Seoul metropolitan had HLQ that was dominate in all industrial sectors, excluding secondary industries. Through such analysis, it was possible to confirm the concentration level of corporate headquarters in the Seoul metropolitan area that peaks in Seoul city.

In order to carry on with more precise discussions, this study used Anselin's (1995) LISA (Local Indicator of Spatial Association that measures the spatial correlation from a local aspect, and analyzed sixty-six regions within the Seoul metropolitan area.

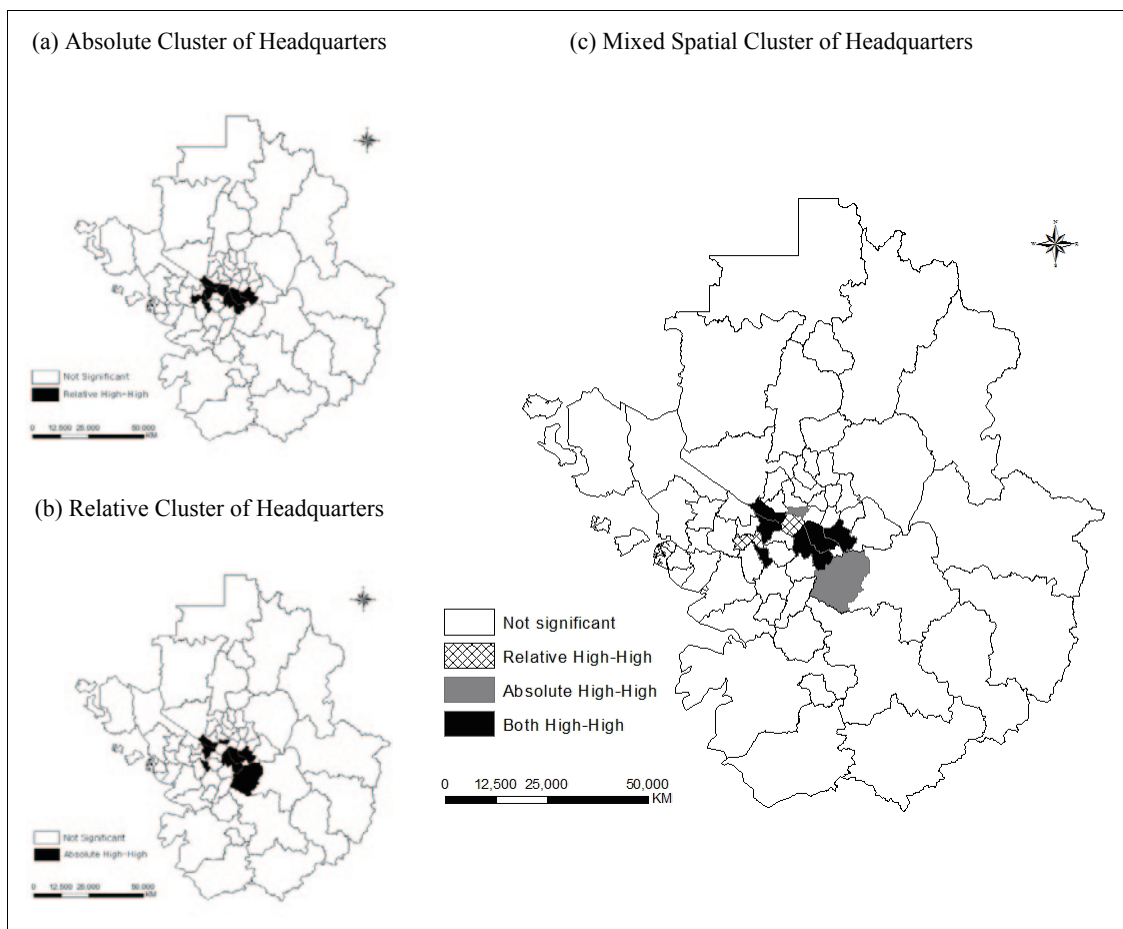


Fig 2. Spatial Cluster of Headquarters in SMA

In particular, this study categorized variables used in the LISA analysis as number of corporate headquarters and percentage of corporate headquarters to compare the absolute spatial correlation and relative spatial correlation. The former is the absolute cluster deduced based on the absolute value of the number of corporate headquarters, and the latter is the relative cluster deduced based on the specific gravity of corporate headquarters. In the case of absolute clusters that are normally used, because there are a high number of total corporations, which includes branch offices, it is easy to make an error as if to appear that headquarters are concentrated. Therefore, in this study, the group with high headquarter concentration levels was deduced through the mixed spatial cluster of the two analysis results.

According to LISA analysis results, corporate headquarters in the Seoul metropolitan area form spatial clusters focusing on the three major areas of the downtown area, Gangnam area, and the Yeouido-Mapo area. The regions that had both high absolute spatial correlation and relative correlation were the Gangnam area and Yeouido-Mapo areas. Interestingly, despite the fact that the downtown area, which is in the heart of Seoul where the Cheong WaDae is located, is an absolute cluster with many corporate headquarters, it does not have a relative cluster. This is judged to be due to the effects of the Gangnam area, which has recently developed rapidly, and shows that there has been a big shift of positions in the three major traditional regions of Seoul.

As explained above, the rapid urbanization and concentration of resources in Korea resulted in the concentration of corporate headquarters in the Seoul metropolitan area. From a pan-national perspective, if the concentration to the Seoul metropolitan area was due to such national policies, then what are the regional factors that determine the location of corporate headquarters within the Seoul metropolitan area? In the next chapter, we will analyze the factors that determine the location of corporate headquarters focusing on the Seoul metropolitan area in which corporate headquarters are concentrated in. In particular, an HLM (Hierarchical Linear Model) that identifies the factors of regional levels and factors of individual companies was constructed for more precise analysis.

4. Methodology

4-1. Data & Variable

In this study, data was constructed from both by individual companies and by areas. Because a company is nested in a region, the overall data has a hierarchical structure. First level (company) analysis data used the national business survey (2010). This survey was on all businesses in the nation and includes various information such as the location in which the company is placed, number of employees, firm age, status of headquarters, etc. In this study, 42,018 companies that were larger than small and medium businesses were analyzed. For second level (regional) analysis data, various statistic information provided by the sixty six areas within the Seoul metropolitan area was utilized. Here, variables related to the location of companies such as the region's population, education level, infrastructure, finances, etc were reviewed.

The dependent variable of this study is on the status of headquarters. The status of headquarters is expressed in the form of a binary variable and when it is a headquarters, it is given the number (1) and when it is a branch office, it is given (0). Results of descriptive statistics analyses showed that among all of the companies analyzed, the percentage of headquarters was 36%. Next, independent variables are divided into individual company level

and regional level variables. Such independent variables set to explain the location of corporate headquarters were selected based on theoretical and preceding studies that analyzed corporate headquarter location factors in the past. Variables that show the features of individual companies were allocated as first level variables in the multi-level model and variables related to the region were included in the second level variables.

Table2. Variables, Definition and Data Source

	Variables	Definition	Data Sources
Dependent	<i>HEAD</i>	Status of Headquarters	National Business Survey
Individual Company Level (Level 1)	<i>EMP</i>	Number of Employees	National Business Survey
	<i>COMP</i>	Company Type	National Business Survey
	<i>AGE</i>	Firm Age	National Business Survey
Regional Level (Level 2)	<i>POP</i>	Population Size	KOSIS
	<i>POPGR</i>	Population Growth Rate	KOSIS
	<i>EDU</i>	Education Level	KOSIS
	<i>UAREA</i>	Urban Area	REDIS
	<i>LANDP</i>	Rate of Land Price Change	REDIS
	<i>PAREA</i>	Park Area	REDIS
	<i>FININ</i>	Financial Independence	REDIS
	<i>DEVEL</i>	Ratio of National/Regional Development Expenses	Local Finance Open System
	<i>CULT</i>	Number of Cultural Facilities	REDIS
	<i>HOSP</i>	Number of Hospitals	KOSIS
	<i>ROAD</i>	Road Span	KOSIS
<i>KEMP</i>	Number of Knowledge-service Industry Employees	KOSIS	

In the first level (company) variables, number of employees, company type, and firm age variables were used. The number of employees is a variable that shows the scope of the company and it is directly related to the sales of the company as well. In many industries, including the manufacturing industry, it is expected that there will be more number of employees at branch offices who are directly in charge of production and provision of services compared to the headquarters, which is normally in charge of planning and management. The company type is categorized as either corporation or non-corporation and this is a variable that shows company trust and prestige. Lastly, in the case of the firm age variable, the corporate headquarters is normally established before or together with branch offices, and therefore, it is expected to have a positive relationship (+) with the headquarter status.

This study aims at focusing reviews on the effects of regional level variables, not just individual companies, on the location of headquarters. Accordingly, various regional level variables were utilized as second level variables. First, population size variables represent the urbanization economy. Urbanization economy refers to the city's overall profits that can be acquired through various labor markets and developed corporate services (Henderson, 1986). According to preceding studies (Henderson, 1986; Moomaw 1988; Henderson et al., 1995), As

indices that display the overall development potential and financial standings of a region, variables such as population growth rate, education level, financial independence, national/regional development expenses were utilized. According to Choi Chang-ho and Ahn Dong-hwan (2010), the higher the growth potential and activity of a region, the more active will companies join the region. Aside from these, land price, street system, and number of knowledge-service industry employees that have a direct effect on selection of locations for companies were included as variables. Lastly, for the index that shows the amenity of a region, parks, cultural facilities, hospitals, etc were used as variables.

4-2. Modeling

This study used data from 42,018 companies extracted from the national business survey (2010) and data by region for the sixty six areas in which the companies were located. Because every company was in one of the sixty six areas, the company data and regional data used in this study have a hierarchical relationship. Despite the fact that the data has a hierarchical structure, when analyzed using typical linear regression models, it may potentially have ecologic fallacy, and therefore, the spatial heterogeneity cannot be reflected. Accordingly, this study used HLM (Hierarchical Linear Model) that stratifies the features of individual levels and regional levels to separately estimate them. In HLM, it conducts analysis by separating the amount of information that a company has into differences that exist purely among companies and differences among the regions that the company is located in. Thus, it was possible to lessen the problem with independency of residuals that can occur between the individual features and regional features variables.

(Step 1) Unconditional Model

$$\begin{aligned} \text{Level 1 : } & HEAD_{ii} = \beta_{0i} \\ \text{Level 2 : } & \beta_{0i} = \gamma_{00} + \nu_{0i}, \nu_{0i} \sim N(0, \tau_{00}) \end{aligned}$$

(Step 2) Random Intercept Model

$$\begin{aligned} \text{Level 1 : } & HEAD_{ii} = \beta_{0i} + \beta_{1i}EMP_{1i} + \beta_{2i}COMT_{2i} + \beta_{3i}AGE_{3i} \\ \text{Level 2 : } & \beta_{0i} = \gamma_{00} + \gamma_{01}POP + \gamma_{02}POPGR + \gamma_{03}EDU + \gamma_{04}UAREA \\ & \quad + \gamma_{05}LANDP + \gamma_{06}PAREA + \gamma_{07}FININ + \gamma_{08}DEVEL \\ & \quad + \gamma_{09}CULT + \gamma_{010}HOSP + \gamma_{011}ROAD + \gamma_{012}KEMP + \nu_{0i} \\ & \beta_{1i} = \gamma_{10} + \nu_{1i} \\ & \beta_{2i} = \gamma_{20} + \nu_{2i} \\ & \beta_{3i} = \gamma_{30} + \nu_{3i}, \nu_{ii} \sim N(0, \tau_{00}) \end{aligned}$$

The status of headquarters, which was used as the dependent variable in this study, is a binary variable. Hence, it could not satisfy the supposition that the relationship of independent variables are linear and achieve normal distribution as assumed in the HLM. Therefore, in order to resolve such problems, this study used HGLM (Hierarchical Generalized Linear Model) that is an extended form of the HLM. HGLM is when the dependent variable is a binary variable and can be used when it has a non-linear relationship with the independent variable (Raudenbush&Bryk, 2002). HGLM changes the relationship of dependent and independent

variables into a linear relationship by converting data and then interprets the results. In this study, the below two-stage analysis was performed to review the factors for determining the location of corporate headquarters.

In the first stage, unconditional model that does not include independent variables was executed in order to judge the feasibility of the model and to measure the size of the variances between regions. When j region was measured I times, η_{ij} has the possibility of being the headquarters at the value of the log of the odds and γ_0 shows the average possibility that a company located in the area is the headquarters. In the second stage, a variable that represents the individual company features was entered level 1 (company level) and the variable related to level 2 (regional level) was set as the random intercept model.

5. Empirical Results

In the unconditional model, the regional dispersion for status of headquarters for individual companies while not including independent variables was analyzed, and afterwards, the explanatory power of other independent variables were examined. The analysis results of the unconditional model are as seen in Table 3.

Table 3. Unconditional Model

Fixed effects	Coefficient	Standard Error	T-value	P-value
Intercept	0.785	0.057	13.85	0.00
Random effects	Variance	d.f	χ^2	P-value
	0.197	65	2372.35	0.00

Because the dispersion value of regional levels for status of headquarters for individual companies was 0.197 and statistically significant, it was found that there were differences in the status of headquarters depending on the area. This means that additional analyses using various individual company variables and regional variables are necessary. Accordingly, this study conducted analyses through the random intercept model that includes variables of individual companies and regional levels in the model. The analysis results are as seen in Table 4.

Results of the random intercept model analysis showed that various variables in the individual company and regional level had an effect on the company's headquarter location. It was analyzed that individual companies took into consideration the area's development potential, financial status, corporate activity conditions and amenities when selecting the location of their headquarters.

First, it was found that the headquarters of companies were located in areas with large populations. Population is a variable that represents the urbanization economy. Both the tangible and intangible benefits created in areas with high levels of development in the urbanization economy have direct effects on the location of corporate headquarters. From a similar aspect, the education level of the community was also found to play a major role in choosing the location of the headquarters. In order to carry out the main functions of the headquarters, which include making strategic decisions, human resources with high levels of education are needed. By locating the headquarters in an area with a labor force that has high education levels, the company becomes equipped with potential competitiveness.

Table 4. Random Intercept Model

Level	Fixed Effect	Coefficient	Standard Error	T-ratio	P-value
-	Intercept	0.798569	0.040033	19.948	0.00***
Individual Company Level (Level 1)	EMP	-0.00168	0.000305	-5.499	0.00***
	COMT	0.489939	0.079049	6.198	0.00***
	AGE	0.014301	0.001716	8.334	0.00***
Regional Level (Level 2)	POP	0.000001	0.000000	4.189	0.00***
	POPGR	0.006527	0.003503	1.864	0.07*
	EDU	0.013233	0.002328	5.684	0.00***
	UAREA	0.000089	0.000206	0.431	0.67
	LANDP	0.109597	0.040626	2.698	0.01**
	PAREA	0.032098	0.005152	6.231	0.00***
	FININ	0.002645	0.004391	0.602	0.55
	DEVEL	0.004924	0.000982	5.014	0.00***
	CULT	0.009278	0.001767	5.251	0.00***
	HOSP	0.000000	0.000013	0.031	0.98
	ROAD	0.000001	0.000000	2.216	0.03**
KEMP	0.000009	0.000002	3.705	0.00***	

*p<0.1, ** p<0.05, *** p<0.01

Following the above, companies were found to consider factors that have a direct influence on corporate activities such as land prices, street systems, and knowledge service supply conditions when deciding on where to locate their headquarters. While the land price is a factor that acts as an expense when selecting the location of the headquarters, land in areas that have increasing value can be a method for the company to make capital gains in the long run. Analysis results from this study showed that the higher the fluctuation rate of land prices, the easier it was for locating the headquarters there. This shows that when selecting the location of their headquarters, companies consider land not only as a mere production injection factor, but also as an investment. In addition to this, variables such as infrastructure including streets, and the supply of knowledge-based service industries were also significant positive influences for the location of headquarters. In particular, the supply of knowledge-based service industries played an important role for companies to decide the location of their headquarters. Corporate headquarters tend to utilize outside institutes that supply knowledge services in areas requiring expertise such as business strategy, law and accounting. They pursue more efficient corporate activities through outsourcing. Hence, the level of knowledge service supplies in a region act as a positive factor for selecting the location of corporate headquarters.

The influence of the region's financial conditions and investment levels on the location of corporate headquarters is also interesting. Results from this study showed that while the region's financial independency did not have a significant effect on the location of headquarters, the amount of direct investments by local governments in the region was an important factor for companies to select the location of their headquarters. From the company's standpoint, the financial independency of local governments did not have considerable relations with the activities of the government, but the investment levels of local governments on regions had direct influences on corporate activities. The reason why the influence of these two variables was different in selecting the headquarters location can be said to be attributable to this.

Lastly, amenities of the region that encompasses parks and cultural facilities were also found to have a positive effect on the location of corporate headquarters. Amenities are not direct factors for corporate production activities. However, it has a massive influence on the work conditions and selection of homes for laborers. This result found that the area of parks in the region and the number of cultural facilities were important factors for selecting locations for headquarters.

6. Conclusion

In this paper, the rapid economic growth and urbanization of Korea over the past fifty years were reviewed and the phenomenon in which population and industries became concentrated in the Seoul metropolitan area was examined closely. For this, corporate headquarter distribution by industry and region was analyzed and based on the HLQ (headquarter location quotient), the commanding status of the Seoul metropolitan area was verified. Furthermore, through absolute, relative and mixed spatial cluster analysis using LISA, the corporate headquarter community within the Seoul metropolitan area was reviewed in detail.

Such analysis showed that the concentration of corporate headquarters in the Seoul metropolitan area was maintained strongly for the past several decades and the level of concentration is dominant over any other region. However, after analyzing the company headquarter cluster within the Seoul metropolitan area, the status of the three major regions in the metropolitan area is undergoing great changes with the rapid growth of the Gangnam area.

Results of the HLM (hierarchical linear model) analysis carried out based on such research results showed that corporate headquarters in the Seoul metropolitan area were affected by the unique factors of the region. Particularly, in selecting the location of its headquarters, individual companies were found to place high importance on the population size, education levels, the region's growth potential and infrastructure, as well as corporate activity conditions such as the supply of knowledge services. Moreover, it was found that the local government's investment level and the region's amenity were also important factors in selecting the location of corporate headquarters.

Corporate headquarters play a pivotal management function from the aspect of individual companies, and from the regional aspect, it acts as a core player in the urban economy. While the regional concentration of corporate headquarters can be the growth engine for the development and growth of a city, on the other hand, it can be the cause of regional gaps and conflicts. This study focused on the Seoul metropolitan area that has two faces - one being the region that achieved astonishing economic growth and the other being the cause of conflicts - and analyzed the status of corporate headquarters' location and factors for deciding to do so. Such research results will be an important foundation for adjusting and pursuing the conflictive policy goals of regional development and soothing of regional gaps.

References

- 1) Anselin L (1995) Local indicators of spatial association-LISA. *Geographical Analysis* 27:93–115
- 2) Choi CH, An DH (2010) Factors affecting on new firm formation. *The Journal of Korea Planners Association* 45(2):193–205
- 3) Davis JC, Henderson JV (2008) The agglomeration of headquarters. *Regional Science and Urban Economics* 38(5):445–460

- 4) Erickson RA (1976) The filtering-down process : Industrial location in a non-metropolitan area. *The Professional Geographer* 28(3):254–260
- 5) Erickson RA (1980) Corporate organization and manufacturing branch plant closures in non-metropolitan areas. *Regional Studies* 14(6):491–501
- 6) Goold M, Campbell A (1987) *Strategies and styles*. Basil Blackwell, New York
- 7) Han JS (2009) *Economic geography*. Hanul Books, Paju
- 8) Henderson JV (1986) Efficiency of resource usage and city size. *Journal of Urban Economics* 19:47–70
- 9) Henderson JV, Kuncoro A, Turner M (1995) Industrial development in cities. *Journal of Political Economy* 103(5):1067–1090
- 10) Henderson JV, Yukako O (2008) Where do manufacturing firms locate their headquarters?. *Journal of Urban Economics* 63:431–450
- 11) Holt J, Purcell W, Gray SJ, Pedersen T (2006) Decision factors influencing MNEs regional headquarters location selection strategies. SSRN Working Papers Series 982119
- 12) Huh MG, Lee BH, Whang YK (2002) Management styles and effectiveness of corporate headquarters(HQ) in diversified corporations. *Journal of Strategic Management* 5(2):85–109
- 13) Kim CS, Nam J (1996) A study on the locational movement pattern of corporate headquarters in the capital region of Korea. *The Journal of Korea Planners Association* 31(1):43–72
- 14) Kim HK (1997) *Spatial structure theory*. Seoul National University Press, Seoul
- 15) Kim HM, Kim KA (2002) A study on urban competitiveness: Analysis of interdependence between manufacturing and service sectors. *Korean Public Administration Review* 36(1):297–314
- 16) Kim HM, Park JY (2005) A study on world-cityness indicators and their implications. *The Journal of Korea Planners Association* 40(6):23–37
- 17) Kwon YS (1992) A study on the relationship between concentration of headquarters and spatial structure of national territory. *Planning and Policy* 18:143–164
- 18) Lee BS, Kim SY (2005) The effects of regional characteristics on the location decision of new manufacturing firms in Korea. *The Journal of Korea Planners Association* 40(6):209–227
- 19) Lee DW, Yi CY, Seo YM, Yoon YM (2009) A study on the capital region's development strategies. Korea Research Institute for Human Settlements, Anyang
- 20) Lee HY (2007) *Demography*. Bobmunsa, Paju
- 21) Lee HY (2011) *Economic geography*. Bobmunsa, Paju
- 22) Park SO (1999) *Modern economic geography*. Arche Publishing House, Hongcheon
- 23) Park YH, Kim CH (2002) Locational analysis and spatial reorganization strategies of central management functions in Korea. Korea Research Institute for Human Settlements, Anyang
- 24) Raudenbush SW, Bryk AS (2002) *Hierarchical linear models : Applications and data analysis method*. Sage Publications, Thousand Oaks
- 25) Semple RK, Phipps AG (1982) The spatial evolution of corporate headquarters within an urban system. *Urban Geography* 3(3):258–279
- 26) Statistics Korea (2012) Regional status and features of firm location based on economy census 2010. Statistics Korea, Daejeon
- 27) UN (2012) The 2011 revision of world urbanization prospects. United Nations Population Division, New York
- 28) Yang JS, Kim JW (2007) An analysis of the location change and relocation trends of enterprise headquarters in Seoul Metropolitan Area : 1990-2003. *Seoul Studies* 8(2):51–63