

Housing Refugees:
Residential Concentration and Adaptation of
North Korean Refugees in Seoul, South Korea

by

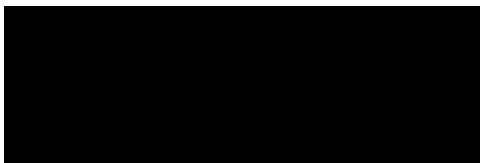
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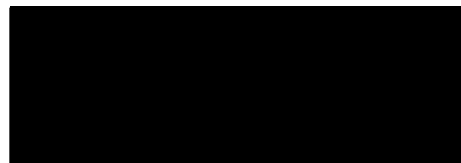
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I. Introduction

Involuntary displacement of ethnic groups has been a long-lived phenomenon throughout human history. Constant political instabilities around the world beget groups of people crossing country borders to seek basic needs and protection. With ever more distinct sovereign states and tightened territorial boundaries, these footless people are becoming more visible these days in many countries, often being perceived as burdens on society.

One of those fast growing refugee groups is North Koreans.¹ While other South-east and East Asian countries either take a hard line by sending them back to North Korea or simply overlook their existence, the South Korean government maintains an open policy towards them, admitting all identified North Korean refugees into the country based on their deep compatriotism with North Koreans.² After entry, they are supported by many programs offered by the government, and it is likely that the budgets for these programs will significantly increase as the number of North Korean refugees grows rapidly. Therefore, evaluating the programs' outcomes and seeking ways to improve them become more crucial in promoting integration of North Koreans into South Korea and making sure the resources are not being wasted.

¹ There have been some disagreements within the international community on recognizing North Koreans as refugees, since many of them are fleeing North Korea because of economic reasons such as hunger and quality of life. The United Nations High Commission for Refugees, however, strictly adheres to the position that they should be identified as refugees. The reason for this is that they will have to suffer persecution by the North Korean government if they return to their country and that North Korea lacks the freedom of thought, movement, religion, etc, which results in suppression of its citizens (UNHCR, n.d.).

² South Korea maintains a completely dichotomous policy towards North Korean refugees and refugees from other countries. By June 2005, there have been 666 refugees from other countries who applied for refugee status in South Korea, and only 38 were granted the status. In this sense, South Korea has been under constant criticism by the international community for its closed attitude toward refugees despite its membership in the UNHCR (Lee, 2005).

This study is designed to aid the evaluation of housing policy towards North Korean refugees, specifically looking at the relationship between the degree of residential concentration of North Korean refugees and their adaptation in South Korea.³ The following sections first discuss the literature on refugee housing and methods used in the study. Next, South Korea's housing policy for North Korean refugees is described, raising the issue of spatial concentration. Then the relationship between residential concentration and the level of adaptation is examined both through qualitative and quantitative analysis. Finally, the implications of the research are discussed and an appropriate direction of the housing policy for North Korean refugees is proposed.

Thus, the study intends to contribute to improving housing policies for North Korean refugees in a way that can bring positive adaptation outcomes and enhance stability of the South Korean society. Implications from the study may also shed light on refugee housing issues in other countries.

II. Literature Review

The residential location of North Korean refugees can be first approached from the viewpoint of 'spatial segregation.' This refers to the phenomenon where residence of a certain population group is not distributed evenly across space (van Kempen & Ozuekren, 1998). The degree of spatial segregation increases with more deviation from

³ When referring to North Koreans, South Koreans do not use 'nan-min', which is the equivalent Korean term for 'refugees.' Instead, they refer to North Koreans in third countries as 'tahl-book-ja,' meaning 'North Korean defectors.' Once tahl-book-ja are admitted into South Korea, the government officially uses 'sae-teo-min', meaning 'newly placed person', a term coined in order to promote their assimilation into society. However, laymen still usually refer to them as 'tahl-book-ja.' This study uses 'refugees' throughout the paper for the sake of simplicity.

uniform dispersal. This concept naturally leads to what is called ‘spatial concentration’ where a certain population group is overrepresented in a certain area.

Spatial segregation and concentration have often been considered something to overcome and eliminate (van Kempen & Ozuekren, 1998). A major concept that supports this idea is ‘spatial assimilation.’ For example, Massey and Denton (1985) contend that

... an important outcome of socioeconomic advancement of minorities is residential integration within mainstream society. A host of variables important to people’s social and economic well-being are determined by residential location. ... As social status rises, therefore, minorities attempt to convert their socioeconomic achievements into an improved spatial position, which usually implies assimilation with majority members (p. 94).

However, the concept of spatial assimilation has been challenged by many studies, especially where ethnic groups are concerned. Empirical analyses have found that many ethnic communities can help members of the community achieve a higher quality of life. In this sense, Logan, Zhang and Alba (2002) argue that spatial assimilation should not be pursued as the ultimate path for ethnic minorities. People from a certain ethnic group may well choose to live closer to each other even if they have enough resources at hand. Thus, these ‘ethnic communities’ should be distinguished from minority ghettos where certain populations groups are systematically trapped in a certain area and unable to advance or make changes to their lives from there.

Then what exactly are the advantages and disadvantages of spatial segregation and concentration for ethnic minority residents? On the negative side, a lack of opportunities to become part of the mainstream society is a major concern (Somerville, 1998). Inadequate government services and low-quality school systems which are commonly observed in segregated areas do not benefit or empower the minority residents

to participate in mainstream society. Human contacts and interactions are confined as well, often resulting in a limited access to information. Another negative aspect comes from the image the residents within the segregated area have for other people in the society (Bolt, Burgers, & van Kempen, 1998). When a population is spatially separated into 'us' and 'others,' people often formulate images of 'others' indirectly, most likely through the media. The absence of chances to build relationships easily leads to stigmatization, fear and intolerance towards each other, and in that situation, it is hard to generate feelings of empathy towards the minority group.

Meanwhile, there are also advantages that come from residential segregation and concentration of ethnic groups (Peach & Smith, 1981; Owusu, 1999). It is easier for ethnic minorities to maintain their culture and seek emotional comfort in a relatively unfamiliar place. Emergence of businesses that serve particular ethnic groups not only meets the needs of the residents, but offers job opportunities for many members. Strong social networks built within the segregated neighborhood can serve as a route to obtain invaluable information. In the case of an emergency, residents tend to find help more easily through informal arrangements of shelter or money lending practices.

The critical question at this point is whether these theories on ethnic minorities developed in the context of immigrants mainly in North America and Europe would apply to North Korean refugees in South Korea. Since North Koreans are after all Koreans, they speak the Korean language and up until the mid-20th century, they had shared a similar history and culture, it is easy to assume that they would have relatively

little difficulty in adapting to South Korean society.⁴ However, political, economic, social and cultural shocks they experience while trying to get along in South Korea are significant, making it hard for them to adjust both in material and mental ways (I. Yoon, 2001). For instance, it often takes a long time for North Koreans who have lived under communism to become comfortable with the competitive South Korean society due to their lack of understanding regarding capitalism (Kang, 2005). In addition, language barriers exist, which come not only from using different dialects but also from North Koreans' unfamiliarity with Korean vocabularies based on Chinese characters and English (Kim, 2006). The South Koreans' attitude towards North Koreans is also problematic. Yang and Chung (2005) show that South Koreans tend to have a negative image towards North Korean refugees even before having any contact with them, which easily leads to prejudice. Thus, the difficulty North Korean refugees face in adjusting to South Korean society is no less severe than any other migrants around the world. Therefore, it is useful to look at the relationship between residential location and adaptation of North Korean refugees, whether residential segregation and concentration are positive or negative factors to their adaptation.

One important aspect that should not be neglected in examining the issue of North Korean refugees' residential location is the fact that they are refugees. Refugees are treated differently from other migrants with respect to their residential location. While other migrants have choices over where to live these days, refugees are often subject to the receiving governments' refugee housing programs, which often involve assigning

⁴ In a focus group study conducted by Jeon (2000), about 20% of North Korean refugees have identified that they are rather troubled by high expectations from South Koreans that they will easily assimilate with the South Korean society.

certain regions and even housing units to live (Dutch Refugee Council, 1999).⁵ On the one hand, this residential designation is understandable given the fact that government resources are limited. On the other hand, such programs may have a detrimental effect on adaptation of refugees if they either intentionally or unintentionally enforce a certain spatial distribution of refugees. In many European countries, for example, policies to disperse refugees within a country are being severely criticized in the sense that they are sending refugees to economically deprived areas, thereby preventing their inclusion in the mainstream society and reinforcing social exclusion (Phillimore & Goodson, 2006; Wren, 2003). Thus, the issue of residential location for refugees may be of greater concern, since ‘institutionalized’ spatial segregation and concentration are easy to implement. The term ‘institutionalized’ emphasizes the fact that residents are coerced by society to live in certain areas and cannot escape those places of their own free will (van Kempen & Ozuekren, 1998). Given the vulnerability of refugees, it would be critical to look at the South Korean government’s policy from this point of view - whether there is any element of institutionalized residential segregation of North Korean refugees.

III. Methods and Limitations

To give context to the issue, the study first describes the current housing policy for North Korean refugees in South Korea. This is done by examining the existing laws and regulations enacted by the South Korean government and other relevant documents.

As will be shown later, the discussion on the housing policies naturally leads to the formation of spatial concentration of North Korean refugees. Using the survey data

⁵ Article 26, Chapter V in the Geneva Convention states that refugees have the right to choose their residence and have freedom to move within the territory, but sets limitation by mentioning possible regulations refugees might be subject to as with other aliens in similar situations (UN, 1951).

collected by Database Center for North Korean Human Rights, funded by Ministry of Unification, South Korea (Y. Yoon et al., 2005), a segregation index will be constructed to show the magnitude of residential segregation and concentration of North Korean refugees in Seoul.⁶

Then the most thriving among those residences is described through direct observation which helped reveal the characteristics of areas with many North Korean refugee residents. Site visits were accompanied by interviews of business owners and service providers in that area in order to have a deeper understanding about the kinds of services provided as well as about the users of those services. Judgment sampling was used to choose interviewees.

The next part of the study looks at how residential segregation and concentration affect the adaptation of North Korean refugees. First, a qualitative approach was used interviewing service providers on the issue. This qualitative portion is accompanied by, and compared with, statistical analysis using the survey data mentioned above. The survey was conducted in 2005 in an attempt to understand the comprehensive settlement situation of North Korean refugees in South Korea and examine the effect of existing policies towards them.⁷ This study will only use 534 sample elements that are more than

⁶ The total population of North Korean refugees in 'Gu' levels is unavailable, so survey data will be used to construct the index (see footnote 8 for explanation on 'Gu'). Since the data are randomly sampled, the procedure is justified. See footnote 7 for detailed information on the data.

⁷ The study population of the survey was North Korean refugees who entered South Korea between January 1, 1997 and December 31, 2004, less the children under the age of 12 and people who are deceased or immigrated. Since North Korean refugees who entered South Korea during this period of time constitutes more than 90% of the total North Korean refugees in the country, the survey designers considered them as the main policy target group. Thus the number of study population amounted to 5,177. With regards to sampling, the survey aimed at sampling about 30% of this study population across South Korea, utilizing stratified sampling procedures for the regional spread of the study population. Each element within a regional stratum was chosen randomly. Following the survey design protocol, 1663 face-to-face interviews were conducted, using separate questionnaires for adults and adolescents. Then the completed interview schedulers were screened by excluding unqualified participants identified later, extremely inconsistent

20 years old and that identify their Gu-level residential location in Seoul City from the survey data.⁸ The reason for limiting the geographical boundary of the study as such is that Seoul is the only entity where a large number of North Korean refugees is concentrated and therefore their residential clustering can be observed.⁹

The conceptual framework being used in this study is summarized in Figure 1 below.¹⁰ The survey covers broad topics including job, wealth status, government policy, life satisfaction, health, religion, politics, the South Korean way of life, non-governmental organizations, economic life, social education, college education, National Basic Living Security Act, family relations, and traumatic experiences. Among these, there are several variables which were designed to measure the level of adaptation of North Korean refugees. Following the survey design, this study looks at three aspects of adaptation: social and economic status and overall satisfaction with life. Social status is represented by satisfaction with neighbors and closeness to South Koreans; economic status is proxied by number of months unemployed and job security; and overall satisfaction with life was asked directly in the survey.

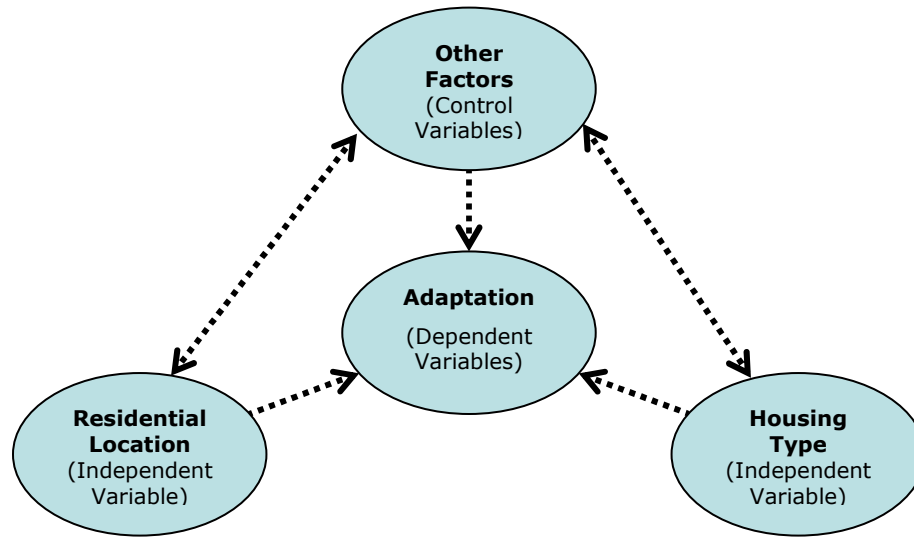
answers, and participants who answered less than 80% of the survey questions. This process established the final sample of 1336, which is 25.8% of the study population. Unfortunately, no information is available on the eliminated samples at this point, making it impossible to observe the pattern of excluded samples' characteristics. This can be a potential drawback for the survey. Meanwhile, the sampling process did not consider the age and gender distribution, but the final sample showed a similar range within the study population. Gender deviation ranges from -0.2% to +0.2%, and age deviation from -0.4% to +0.3%.

⁸ In the data, only one sample element did not report the Gu-level residential location within Seoul. Understanding the Seoul's administrative boundary system can be useful here. Seoul City consists of 25 'Gues,' district units of Seoul. Each Gu incorporates several or dozens of 'Dongs', which amounts to a total of 522 in Seoul.

⁹ 42.8% of total North Korean refugee population in December 2005, and 38.1% in June 2006 lives in Seoul (Committee on Unification, Foreign Affairs & Trade., 2006; Ministry of Unification, 2006). However, data are unavailable on the number of adult North Korean refugees who entered South Korea between 1997 and 2004, and who lived in Seoul at the time when the survey was conducted.

¹⁰ Since verifying the causal relationships among the variables falls outside the purview of this study, dotted lines are used instead of solid ones.

Figure 1 Conceptual Framework of the Statistical Analysis



The main independent variable for the analysis is the residential location of North Korean refugees, whether in an area with high concentration of North Korean refugees or not. It is measured as a gap between the percentage of sample distribution and the percentage of Seoul's total population distribution among Gues.¹¹ On top of residential location, housing type, meaning whether the respondent lives in public housing or not, is included as another independent variable.¹² With these two variables directly related to housing policies, other related factors to each dependent variable are controlled within the limitation of data availability.

The main weakness of this analysis comes from the quality of the data being used. First, four out of five dependent variables were measured as ordinal, so they might lack the sophistication needed to understand wide variations in reality.¹³ Second, it should be noted that responses on the adaptation measures are notably skewed towards the higher

¹¹ The actual values equal the '% Difference' column in Table A-8 in Appendix.

¹² Only 30 survey elements out of 534 identified they do not live in public housing, though.

¹³ Satisfaction with neighbors and overall satisfaction with life were measured in five ordinal categories, while closeness to South Koreans and job security were measured in three.

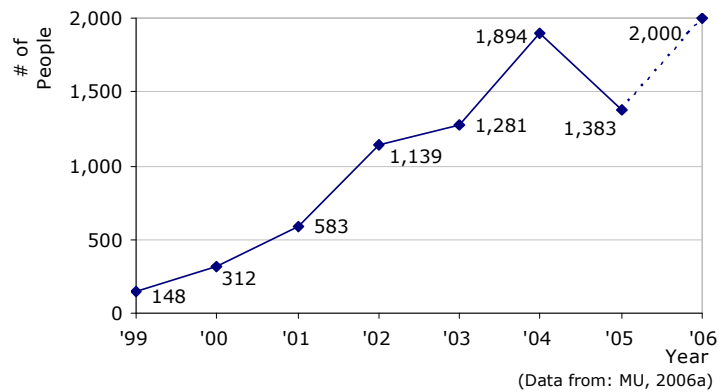
end. This might reflect reality or it might come from poorly designed survey, unskilled survey conductors, social pressure on the respondents, respondents' insincerity or their self-esteem. Third, information on residence is very limited in the data. This is mainly because the survey was by no means designed to evaluate the residential environment of North Korean refugees and such a survey has not been conducted yet in South Korea. Therefore, the statistical analysis conducted in this paper certainly has its limitations, and extensive evaluation of housing policies is not possible through this research. Still, by using the information available, this study aims at raising the issue of how residential location and housing type may relate to adaptation.

III. North Korean Refugees and Housing Policy

The North Korean refugee population in South Korea has shown a rapid increase for the past decade (Ministry of Unification [MU], 2006a). There were only 607 of them prior to 1989, and from 1990 to 1998 only 340 entered South Korean society. However, the pace of growth accelerated since then (see Figure 2). Having more than 1,000 for four consequent years, it is projected more than 2,000 North Korean refugees will be entering in 2006 which will result in the total number of more than 10,000.¹⁴

¹⁴ During the first half of 2006, 1,054 of North Korean refugees entered South Korea, already reaching 8,741 in total.

Figure 2 Number of North Korean Refugees Entering South Korea

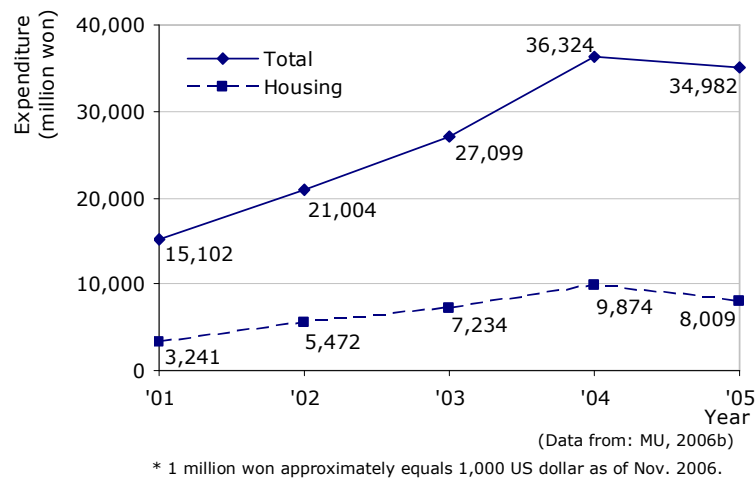


In proportion to the increase in number of North Korean refugees, government spending on support programs has grown significantly as well (see Figure 3).¹⁵ It took three years for the South Korean government to double its spending on settlement subsidies from 2001. Even though the figure is a small amount compared to the size of the South Korean government's total expenditures, still a significant amount of budget is being spent for this relatively small portion of the population.¹⁶

¹⁵ These figure does not include other expenses spent for North Korean refugees, such as fees used to transport them to South Korea or the budget for running Hanawon, an institution for adaptation where all North Korean refugees stay for three-month after their arrival.

¹⁶ For example, South Korea's government expenditure in 2005 was 189 billion US dollars (Bank of Korea, 2006). Settlement subsidies for North Korean refugees in 2005 therefore make up 0.0185% of it. The new law on settlement subsidies is in effect since 2005 which significantly reduced the upfront amount of subsidy per capita while increasing the amount people can receive in the form of incentives (Ministry of Unification, 2006b).

Figure 3 Government Expenditure on Settlement Subsidies



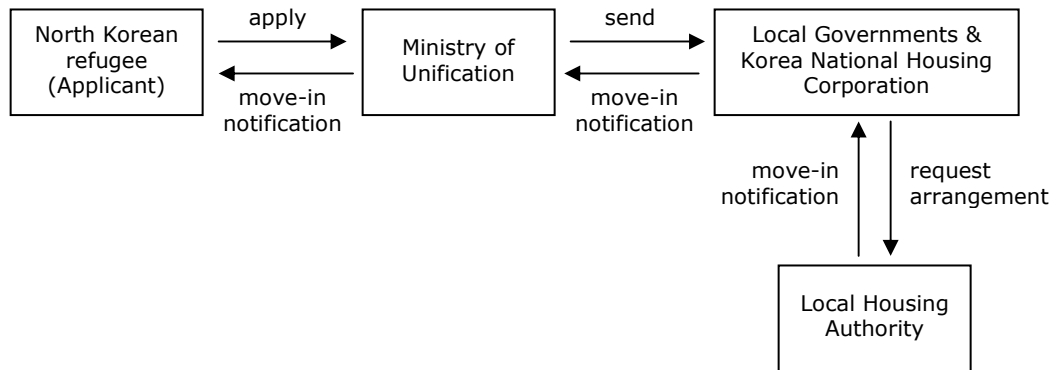
Out of the total settlement subsidy, the South Korean government has spent from 21 percent to 27 percent for housing subsidies each year. The contents of the housing subsidy went through some modifications in details as new administrations took the office, but the bottom line has remained the same (MU, 2005; MU, 1999; National Intelligence Service, 1999; MU, 2002). In a nutshell, the government gives North Korean refugees freedom as to where to live and only grants certain amount of subsidy in the name of housing support.¹⁷ However, the reality is that the amount of housing subsidy is virtually too small for the recipients to participate in the regular housing market in Korea. Without having any guarantee of getting a permanent, stable job in a short period of time, the only option that most of the North Korean refugees have is to choose public housing.¹⁸

¹⁷ The amount used to be in the range of 8.4 and 12 million won per person depending on the unit size and the regional location. With the new law effective from 2005, the housing subsidy is now 10 million won per person.

¹⁸ Even public housing cannot be wholly covered by the housing subsidy in reality. Depending on the regional location and unit size, deposit money for public housing may exceed the housing subsidy amount and the gap should be financed by the refugees themselves somehow. The full amount of monthly rent for public housing is to be paid by the residents.

The Ministry of Unification offers public housing arrangement service for North Korean refugees (see Figure 4). It receives application from them while they are in Hanawon.¹⁹ The applicants have an opportunity to reveal their preference in the application form in terms of the size, with the maximum of 85m², and the regional location of the housing.²⁰ The form is sent to local governments and Korea National Housing Corporation to accommodate the demand.²¹

Figure 4 Public Housing Assignment Process



(Adopted from: Ministry of Unification, 2004)

The applicant's preference is not always reflected in the final assignment due to the limited availability of public housing stock in the market. In particular, most North Korean refugees wish to live in Seoul, but public housing supply there typically does not meet the demand (Chosun Ilbo, 2004). In this case, a lottery takes place, which determines who will get the unit in Seoul. Since 2000, the government has given a bounty

¹⁹ See footnote 15.

²⁰ There is no choice for type of public housing since most of its stock in South Korea is highrise apartments. Only recently have there been attempts to build non-highrise style public housing, but the number of units is still negligible.

²¹ Korea National Housing Corporation is a quasi-government agency. Its responsibilities include developing and managing public housing in South Korea.

to the people who are, whether by preference or not, assigned to public housings outside of Seoul in order to encourage living in other regions in South Korea.

IV. Residential Location of North Korean Refugees

Under the housing policy discussed in the last section, North Korean refugees have settled in various regions across South Korea. By examining their residential location, two spatial characteristics can be observed. First, despite the government incentive to regionally spread out the North Korean population to deal with the shortage of public housing in Seoul, spatial concentration can be observed in the city, though it is moderate (see Table 1). The number of North Korean refugees living in Seoul is 14 percent higher than the percentage of the total population. The index of dissimilarity is 19.13, which means 19.13 percent of North Korean refugee population need to change their residence to different region in order to get an even distribution of them across South Korea (see Appendix for details).

This result itself cannot serve as an indicator showing the effectiveness of the bounty system that is designed induce North Korean refugees to live outside of Seoul, since the North Korean refugees used in the construction of the index include those who arrived at South Korea before the inception of the bounty system in 2000. Nonetheless, it has been observed that a significant number of people attempt to move to Seoul, even once assigned to other regions, purportedly out of vague expectations for better quality of life (Hanawon, 2006).²² The data used in this paper are consistent with this. Among 534

²² This often results in more dire situations for them since the government holds strict restrictions for public housing reassignments. One can ask for public housing exchange only when they have well-grounded reasons related to career and education. Even this program is scheduled to be scrapped by 2009.

sample elements from Seoul, 13 percent replied that they were not assigned to Seoul in the first place but moved from other places.²³

Table 1 Regional Distribution of North Korean Refugees and Total Population

Region	N. Korean Refugees*	%	Total Population**	%
Seoul	2,900	38%	10,297,004	21%
Busan	495	6%	3,657,840	7%
Incheon	421	6%	2,632,178	5%
Daegu	311	4%	2,525,836	5%
Gwangju	189	2%	1,408,106	3%
Daejeon	363	5%	1,462,535	3%
Ulsan	122	2%	1,095,105	2%
Gyeonggi	1,484	19%	10,853,157	22%
Gangwon	204	3%	1,521,099	3%
Chungbuk	168	2%	1,501,674	3%
Chungnam	259	3%	1,982,495	4%
Gyeongbuk	220	3%	2,711,900	6%
Gyeongnam	192	3%	3,187,110	6%
Jeonbuk	127	2%	1,895,500	4%
Jeonnam	129	2%	1,976,465	4%
Jeju	37	0%	559,747	1%
Total	7,621	100%	49,267,751	100%

(Data from: MU, 2006a; Korea National Statistical Office [KNSO], 2006)

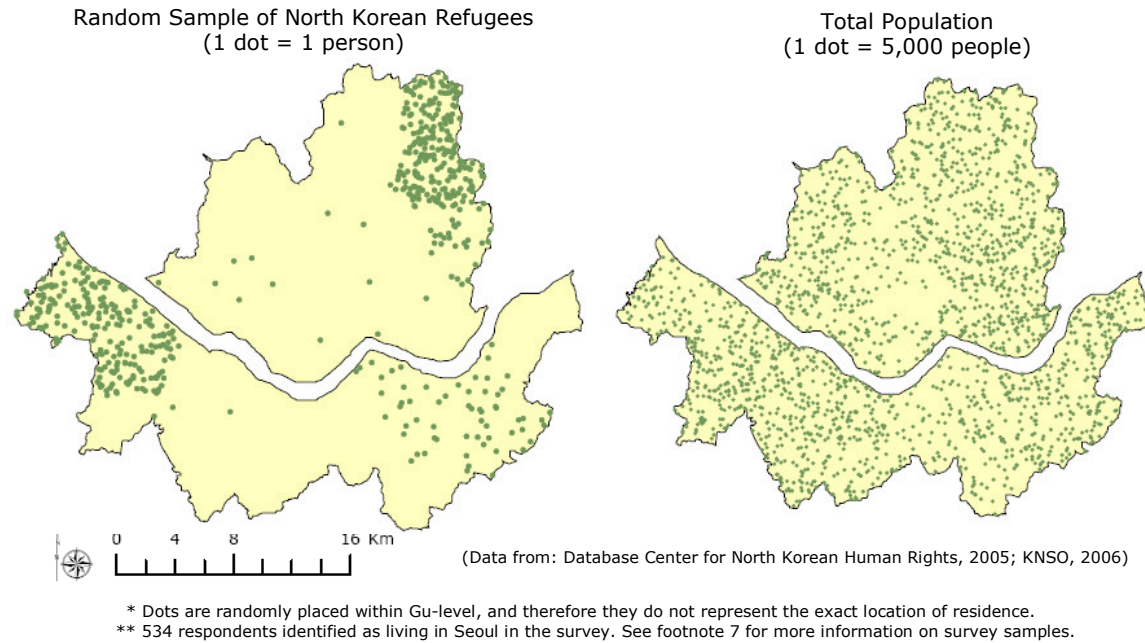
* Total North Korean refugee population who entered South Korea until June 2006.
Excludes 621 refugee who did not report region.

** Total population in South Korea in 2005.

Second, within Seoul where the largest number of North Korean refugee resides, spatial concentration is more pronounced. Since subdistrict-level, Gu, data of North Korean refugee residence in Seoul is unavailable, this is estimated by using the sample survey data set. As seen in Figure 5, North Korean refugee population is concentrated in the northeastern and southwestern parts of Seoul, while total population is scattered across the city. Less degree of concentration of North Korean refugees is identified in the southeastern part. The index of dissimilarity calculated is 65.2 (see Appendix 1 for details). This means 65.2 percent of the North Korean refugees in Seoul would have to move to another Gu in order to achieve non-segregated status.

²³ On the other hand, among 523 sample elements of those which replied that their first housing assignment was in Seoul, 3.8% moved out of the city.

Figure 5 Comparison of Population Distribution in Seoul

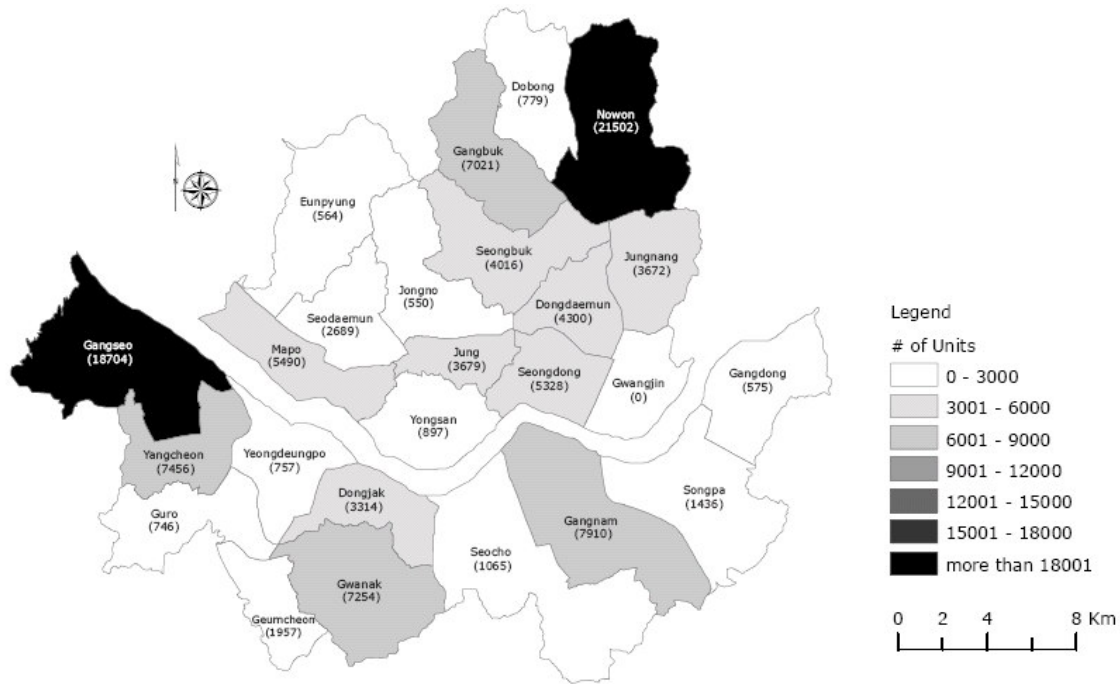


Given that nearly 95 percent of the survey respondents live in public housing, the high degree of spatial concentration of North Korean refugees in Seoul can be largely explained by the location of public housing in the city. Figure 6 illustrates the Gu-level distribution of public housing and the number of units in each Gu. While largest number of public housing units is located in Nowon and Gangseo, some other Gues lag far behind those two, making the spatial distribution highly skewed at both ends. Comparing Figures 5 and 6, the areas with high degree of North Korean refugees' residential concentration correspond with Gues that have a large public housing stock.

Recalling the South Korean government's housing policy, most of the North Korean refugees usually get public housing assignments. Therefore, the match between the location of public housing and residential location of North Korean refugees is inevitable. One thing to be reminded of is that most of the public housing units in Seoul are clustered together in smaller areas within Gues, where forming public housing is

located, rather than mixed with other types of housing.²⁴ Therefore, the level of concentration is should be much more intense in reality.

Figure 6 Number of Existing Public Housing Units in Gu-level in Seoul



(Data from: Seoul Development Institute, 2006)

* The numbers in the parentheses indicate public housing stock in each Gu. It does not include one type of public housing stock, Gookmin, for which North Korean refugees were not eligible until 2005.

In order to get a sense of areas where large number of North Korean refugees resides, a neighborhood called Pureun-maeul in Yangcheon-gu was visited. The neighborhood consists of several high-rise apartment buildings which is a typical residential landscape in Seoul (see Figure 7). About 250 North Korean refugees are reported to be living in this public housing complex, a figure that exemplifies a much more intensive degree of residential concentration of North Korean refugees than revealed by the segregation index (Sisa Press, 2007). Despite such high population

²⁴ Policy to spread out public housings to encourage mixed-income complexes only started recently. For example, inclusionary zoning within redevelopments became mandatory in 2005. Townhouse or multifamily-style public housing program which the government buys or rents from existing units in the market across the city launched in 2004.

density of North Korean refugees, businesses or services operated by or geared towards them could not be detected at all, which is quite different from ethnic enclaves in many western cities.

Figure 7 Pureun-maeul Neighborhood in Yangcheon-gu:
A Typical Landscape of Public Housing Complex in Seoul



* Photo from Sisa Press, 2007

Interviews with two social workers and two pastors in Yangcheon-gu were helpful in understanding the reason behind this lack of ethnic enterprises or services. For one thing, despite high concentration, the number of North Korean refugees residing in the area is still small in absolute terms, so it is not feasible for government service agencies or other non-profit organizations to operate separate office in the neighborhood. In addition, North Korean refugees usually lack skill sets or capacity to operate any kinds of businesses. In particular, high price of rent for office or retail space is said to be the

main factor in deterring them from becoming small entrepreneurs.²⁵ Lastly, North Korean refugees themselves tend to have little demand for ethnic commodities such as food. Part of the reason is their similarity to South Korean counterparts, but is also attributable to the population's minimal purchasing power that cannot support ethnic-oriented businesses.

An exception one social worker mentioned during the interview was a small food processing factory near the neighborhood (see Figure 8). It produces Gochujang, a red pepper sauce, in the traditional North Korean way and targets South Korean food markets. It could open the factory in this location and survive with a robust financial structure only because of donations from a religious group. This group is supporting the rent for the factory space, and it also helped establish a church on the second floor of the same building with a majority of believers being North Korean refugees living in the neighborhood.

Figure 8 North Korean Traditional Food Processing Factory in Yangcheon-gu



²⁵ There are several funding sources that support start-up businesses by North Korean refugees, but the typical amounts can by no means cover the cost of office or retail space rents.

Indeed, interviewees noted that churches that specifically serve North Korean refugees have a wide presence in the area and are exceptions to the dearth of North Korean refugee-related institution in the area where a large number of them are concentrated. Not only the number of churches, but also the importance of the role they play in assisting North Korean refugees to adapt into South Korean society are reported to be growing, as they provide various programs and supports North Korean refugees need.

V. Housing and Adaptation: Does it Matter?

The previous section showed the level of residential concentration of the North Korean refugee population within Seoul. Now the discussion moves onto whether their residential location is related to the level of adaptation in South Korea. As living closer to other North Korean refugees may have both positive and negative effects on their adaptation to South Korean society, the answer to this question would be valuable for the housing policy makers.

During the interviews, the social workers and pastors in Yangcheon area cautiously revealed their concern over high concentration of North Korean refugees. Most of them admitted that they do not recall hearing complaints from them about the demerits or inconvenience of living closely with other North Korean refugees, though still some wish they could move to areas with fewer North Koreans. In fact, interviewees have feelings that they get a lot of information and tips about living in South Korean society and they tend to seek emotional comfort most of the time.

However, their concerns stem from squarely facing the environment to which North Korean refugees are exposed. Since most of them live in public housing complexes, the neighbors they mingle with or encounter are limited to lone seniors or other lower-income people, or other North Korean refugees. Under this situation, the information they easily get access to tends to be ones such as stores or events that give out free household goods or food. Interviewees contended such an environment may benefit North Korean refugees in the short term, but it would not enhance their quality of life or help them successfully settle in South Korean society in the long run.

Most of the interviewees carefully suggested that some policies to let North Korean refugees live among South Korean middle class people would be helpful for them. This way, refugees can observe how main stream South Korean people live and may be able to establish a role model which is considered important when adapting into new culture. In addition, the fact that middle class people would be able to give North Korean refugees more practical and real help in adaptation was put out as well.

However, one social worker pointed out possible side effects of such policy, if it is ever implemented. He worried about the sense of alienation that North Korean refugees might get due to wide gap between middle class South Koreans and themselves. Moreover, it is hard to blindly believe that middle-class South Koreans would actually welcome and be open to their North Korean refugee neighbors. If hostile sentiments prevail, North Korean refugees might find themselves in a real fix, where they can get support from neither middle class South Koreans nor North Korean refugees.

Tables 2, 3 and 4 show the results of statistical analysis looking at the relationship between the level of residential concentration and adaptation of North Korean refugees in

Seoul.²⁶ As explained in the methods section, the degree of North Korean refugee concentration is measured by the gap between the percentage of sample distribution and the percentage of Seoul's total population distribution within each Gu. Therefore, the higher the value, the higher the level of North Korean refugee population concentration in the area. On top of this, housing type was included as another factor, which indicates whether sample elements are living in public housing or not. Using these and other independent variables, five regression analyses looking at social, economic, and overall adaptation status are conducted. The results are generally in line with the qualitative analysis, but reveal a more complicated picture of the relationship between housing and adaptation.

First, satisfaction with neighbors and closeness with South Koreans are examined under social adaptation status (see Table 2).²⁷ Concentration gap is significant at .05 level, indicating North Korean refugees living in highly concentrated areas of their own population are less satisfied with their neighborhoods, holding everything else constant. Closeness to South Koreans is related to housing type rather than the level of concentration. The result shows that North Korean refugees who live in public housings are less close to South Koreans, holding everything else constant.

Meanwhile, economic adaptation status is proxied by examining two dependent variables (see Table 3).²⁸ First, the number of months remained unemployed is significant at .01 level. The result indicates the more North Korean refugee are concentrated in the

²⁶ All five regressions were checked for heteroscedasticity and their p-values were insignificant.

²⁷ The concentration variable is not normally distributed, but transformations using logarithm and square root did not improve the distribution. Therefore, its original form is used in the analysis.

²⁸ Variables on concentration gap and number of months spent in job training are not normally distributed, but transformations using logarithm and square root did not improve the distribution. Therefore, their original forms are used in the analysis.

area in which they live, the fewer number of months they were unemployed. On the other hand, job stability is not related to any of factors related to housing.

Table 2 Social Status Regressed on Housing Factors Controlling for Others

<i>Independent Variables</i>	Satisfaction with Neighbors (OLOGIT)		Closeness with South Koreans (OLOGIT)	
	<i>coefficient</i>	<i>p-value</i>	<i>coefficient</i>	<i>p-value</i>
concentration gap between NK and SK	-0.029	0.015**	-0.008	0.471
housing type (public housing=1)	-0.335	0.615	-1.062	0.058*
moved (yes=1)	-0.345	0.416	-0.240	0.521
education in N.K.	0.121	0.535	0.455	0.014**
education in S.K. (yes=1)	0.005	0.989	0.949	0.006***
health status	0.227	0.136	0.156	0.259
religion (yes=1)	0.534	0.103	0.414	0.160
trauma experience (yes=1)	0.108	0.733	0.367	0.207
Age	0.020	0.112	0.017	0.149
sex (male=1)	-0.621	0.063*	-0.187	0.525
live alone (yes=1)	0.485	0.183	0.070	0.839
blood brother/parents (yes=1)	0.147	0.714	1.028	0.006***
household income per capita	0.007	0.109	0.012	0.005***
# of years lived in S.K.	0.037	0.697	-0.051	0.567
<i>N</i>	191		196	
<i>R</i> ²	0.0587		0.0977	
<i>Significance (p-value)</i>	0.0484		0.0000	

* $p \leq .10$; ** $p \leq .05$; *** $p \leq .01$

Table 3 Economic Status Regressed on Housing Factors Controlling for Others

<i>Independent Variables</i>	# of months unemployed (OLS)		Job stability (OLOGIT)	
	<i>coefficient</i>	<i>p-value</i>	<i>coefficient</i>	<i>p-value</i>
concentration gap between NK and SK	-0.225	0.001***	0.017	0.280
housing type (public housing=1)	-5.015	0.155	1.011	0.194
# of months in job training	3.306	0.076*	-0.296	0.503
education in N.K.	-0.344	0.762	0.584	0.037**
education in S.K. (yes = 1)	1.454	0.495	0.663	0.194
health status	-1.816	0.050**	0.614	0.006***
trauma experience (yes=1)	-0.588	0.752	0.018	0.967
age	0.125	0.113	0.010	0.659
sex (male=1)	2.033	0.280	0.688	0.120
computer ability	2.383	0.259	1.024	0.032**
# of years lived in S.K.	1.331	0.014**	0.071	0.563
<i>n</i>	272		101	
<i>R</i> ²	0.1171		0.1498	
<i>Significance (p-value)</i>	0.0005		0.0006	

* $p \leq .10$; ** $p \leq .05$; *** $p \leq .01$

Finally, overall adaptation status is explored by the variable on overall satisfaction with life (see Table 4).²⁹ Here, North Korean refugees who live in areas highly populated with other North Koreans tend to be less satisfied with their lives, holding everything else constant. The concentration gap variable is significant at 0.05 level.

Table 4 Overall Satisfaction with Life Regressed on Housing Factors Controlling for Others

	Overall Satisfaction with Life (OLOGIT)	
<i>Independent Variables</i>	<i>coefficient</i>	<i>p-value</i>
concentration gap between NK and SK	-0.024	0.045**
housing type (public housing=1)	-0.636	0.344
moved (yes=1)	-0.286	0.524
education in N.K.	-0.225	0.268
education in S.K. (yes=1)	1.037	0.006***
health status	0.488	0.002***
religion (yes=1)	0.153	0.637
trauma experience (yes=1)	-0.513	0.112
age	0.048	0.000***
sex (male=1)	-0.395	0.237
live alone (yes=1)	0.374	0.309
blood brother or parents (yes=1)	0.049	0.905
# of years lived in S.K.	-0.061	0.528
future preparation (yes=1)	0.036	0.912
household income per capita	0.004	0.358
<i>n</i>	186	
<i>R</i> ²	0.0889	
<i>Significance (p-value)</i>	0.0021	
* <i>p</i> ≤ .10; ** <i>p</i> ≤ .05; *** <i>p</i> ≤ .01		

VI. Housing Policy Implication

Interviews with the social workers and pastors working in the area with high North Korean refugee population pointed out the problematic nature of the housing situation of North Korean refugees in Seoul. The results from the statistical analysis on the issue reveal a more dynamic situation. The level of concentration of North Korean refugees is negatively related to satisfaction with neighbors and overall satisfaction with

²⁹ The variable on concentration gap is not normally distributed, but transformations using logarithm and square root did not improve the distribution. Therefore, its original form is used in the analysis.

life. Living in public housing is negatively related to closeness with South Koreans, but is unrelated to other dependent variables that represent the level of adaptation. At the same time, living in public housing and unemployment status are positively related.

Explanation of the reasons behind the variations in results falls outside the scope of this study. One conjecture is that a strong network among North Korean refugees exists in areas where they are concentrated. Through the network, information on short-term jobs may easily circulate, often by mouth to mouth. While the possibility of network in place explains the positive relationship between level of concentration and unemployment status, its influence does not go further behind the temporary positions. The disconnection between the level of concentration and job stability supports this argument. The reason why the level of concentration and housing type respond differently to different adaptation measures are vaguely understood at this point and needs further analysis.

Nevertheless, one point is clear. Either the level of concentration or housing type, both of which are related to a certain degree due to South Korea's housing policy for North Korean refugees, has negative effects on their adaptation to South Korean society. Unemployment status is an exception, but given that the positive effect of residential concentration waters down when it comes to job stability, this exception may only be applied to short-term welfare of North Korean refugees.

By synthesizing the discussion laid out so far, two specific policy recommendations are derived and proposed here. First, there is a definite need to disperse public housing across Seoul City. In effect, this idea pertains to the housing issue not only of North Korean refugees but of lower-income people who are in need of some form of

government housing assistance. By spreading out the public housing stock, its residents, including North Korean refugees, are less likely to be concentrated, or segregated, in certain parts of the city where the quality of service such as education falls behind.

Fortunately, the Ministry of Construction and Transportation and the municipal government have recognized the value of diffusing the public housing stock in a similar vein. Its volition has been expressed at most by reintroducing ‘multi-family public rental units’ policy (The Financial News, 2005).³⁰ While the dominant way of producing public housing had been securing land and building high-rises on it, this policy basically buys or rents existing private, usually two- to four-story, multi-family housing and in turn rents it out to lower-income persons and households.

Upon its re-inception in 2004, some hailed the policy as a necessary step that should be taken to diversify the location and design of public housing in Seoul. However, some worried about the problems identified at the Seoul city’s pilot project, including the difficulties in unit management and maintenance and keeping affordability of the units. In addition, it has been recently reported that securing housing within proximity to downtown is problematic due to the limited budget available (Herald Media, 2007). Even though it is premature to evaluate the effectiveness of the policy, it is clear that the challenge for the policy’s success lies in its financial and administrative feasibility.

A second policy proposal pertains more directly to North Korean refugees themselves. Namely, the recently announced housing voucher program should positively embrace North Korean refugees as one of its policy targets.

³⁰ This policy is not new in a sense that the Seoul City government had operated similar pilot projects during 2002 and 2003. The city scrapped the plan, due to the issues discussed in the main text.

It was only in early 2007 that the South Korean government promulgated its plan to introduce a housing voucher program for the first time, starting with pilot projects in 2008.³¹ The introduction is particularly meaningful since it signifies the turning point, or at least divergence, of South Korean housing policy from a supply-side policy to a demand-side policy. Instead of providing public housing stock in a physical manner, the demand-side approach aims to increase the purchasing power of the rent seekers by directly subsidizing housing costs. The advantages of demand-side policy over supply-side policy are widely discussed on a theoretical basis (Rothenberg et al, 1991). Housing voucher programs have merits in, among others, giving the subsidy recipients discretion to choose the location of their housing and matching an individual person's or household's needs according to their income level.

North Korean refugees will not be eligible for the housing voucher from the start. If that was the case, the government would be simply assuming the whole market price of housing, since it is unlikely the North Korean refugees would have stable income except the settlement subsidies. However, once they obtain a stable job and housing vouchers are available for them, the system would ultimately enable them to move out of the public housing and give them an opportunity to seek their home in other parts of the city.

Some may argue that the real issue with North Korean refugees is chronic unemployment, or even lack of willingness to be employed.³² Therefore, it is possible

³¹ Some argue the housing voucher program has been around for sometime, in the form of rent subsidy for the absolute poor and multi-family public rental units (Yoo, 2006). However, the former is limited to a very small population, usually households in extreme poverty such as parentless families or families or persons unable to work due to health status. And the subsidy amount is fixed to 33,000 to 55,000 won, equivalent to approximately 33 to 55 US dollars. The latter is an indirect approach, where subsidy is used to lower the rental price of housing stocks in the regular market, not directly enhancing the purchasing power of consumers.

³² People who hold this view acknowledge the difficulties North Korean refugees face, including unfamiliarity to capitalist culture and lack of adequate skills. At the same time, however, they argue that

that a housing voucher program for North Korean refugees may seem pointless and not feasible, given that only a small number of refugees have stable earned income.

Nevertheless, some North Korean refugees have revealed their wish to live outside the area highly concentrated with North Korean refugees. Since the program is eligible only for those who have stable earned income, the existence of housing voucher program could be expected to actually stimulate their willingness to work and be included in the regular labor market, especially those have high ambitions and the will to succeed in South Korean society. When asked their opinions about this idea, interviewees in the study generally supported this possibility as well.

Contrary to what they say or what they answered in the survey, it may be true that living closely together with people who have similar background, experience and understanding might emotionally and materially benefit North Korean refugees in an unconscious way. Notwithstanding that likelihood, the value of opening doors to other possibilities and granting each individual opportunity to choose among different options is not disputable. Furthermore, it may be even wise to develop a ladder of opportunity where North Korean refugees are encouraged to take one step at a time, moving away from dependency on government support programs.

In terms of housing policy, one way to implement this idea would be through establishing a housing voucher program as the next step for regular public housing assignment currently in place. A further step would be to set up a special support or guidance system for homeownership among North Korean refugees. It was impossible to examine the relationship between homeownership and the adaptation status in this study,

there is a tendency of North Korean refugees to intentionally put off efforts to find regular jobs since subsidy from the government off sets the possible income gain as they remain to be unemployed. This was one of the arguments that were used for the revamping of the North Korean refugee support policy in 2005.

since only six survey respondents identified themselves as homeowners. Still, given the leverage homeownership has in any capitalist society, it would be worth looking further at the cost and benefits of promoting homeownership for North Korean refugees.

VII. Conclusion

This study looked at how the South Korean government is housing its rapidly growing refugee population from North Korea. Examining their residential location, high concentration was observed in certain areas within Seoul City. Unlike ethnic enclaves in typical western cities, ethnic oriented businesses or services were hard to find.

The interviewees who participated in the study raised concerns about the high concentration level since it might have negative effects on the adaptation of North Korean refugees. The regression analyses were in line with their opinion as at least two variables measuring the level of adaptation were found to be lower for those living in areas with a large North Korean population.

This residential concentration, or in other words segregation, of North Korean refugees can be seen as institutionalized in a sense that housing units are assigned to them by the government, just as other refugees in many countries. However, it is hard to argue for intentionality of such policy, given the good will the South Korean government has and the large amount of money it is spending. In addition, it is observed that some North Korean refugees were able to move out of such area once they had the financial capacity and will to do so. Therefore, it would be constructive to supplement the initial housing package with other housing policies and programs that would facilitate North Korean refugees' gradual adaptation in the new society. Two possible policies proposed here were

to disperse public housing stocks and to enable North Korean refugees to participate in the housing voucher program. Using these and other approaches, refugee housing policy can break away from a monotonous, one-way provision system to a more diversified one in which refugees themselves have choices and move on to better housing opportunities.

The most pivotal factor for successful housing policy for North Korean refugees would be the support for the program from the mainstream society. If many people despise having North Korean refugees as their neighbors and emotions such as NIMBYism prevails, any efforts to alleviate the concentration of North Korean refugees would be in vain. But, it should be clear that if North Korean refugees fail to adapt, they would become a real burden to South Korean society in the long run.

Appendix: Measuring Segregation: Index of Dissimilarity

Segregation indexes intend to quantify and measure the level of spatial segregation or concentration of particular ethnic or racial groups in a study area. In this section, one of the indexes called ‘index of dissimilarity’ is calculated using the North Korean refugee population and total population data for South Korea and Seoul City, respectively.

There are many different kinds of segregation indexes which are being used in the literature. According to Massey and Denton (1988), these indexes can be classified into five categories each of which measure different aspects: evenness, exposure, concentration, centralization and clustering. Those falling into the evenness category, which describes the differential distribution of the subject population, are most closely related to the purpose of this paper.

Segregation indexes that measure evenness are related to what is called a ‘segregation curve’ and can be mathematically derived from it (Taeuber & Taeuber, 1969). In order to construct a segregation curve, the population counts for the ethnic or racial group and total population are needed for each sub-district of the study area. Then the percentage of ethnic or racial group in each sub-district is calculated, and the sub-districts are ordered from the highest to the lowest based on this percentage. The last step is to calculate the cumulative population count for both groups and derive cumulative percentages from it. Table A-1 & A-2 illustrates this process using the North Korean refugee population in South Korea and Seoul City. Because the number of North Korean population is very small with respect to total population, the total population figure is used here instead of total population less the number of North Korean refugees.

Table A-5 Computation of Segregation Curve for N. Korean Refugees in S. Korea

Region	Population Count			Cumulative Number		Cumulative %	
	Total	NKR	% NK	Total	NKR	Total	NKR
Seoul	10297004	2900	0.02816	10297004	2900	21%	38%
Daejeon	1462535	363	0.02482	11759539	3263	24%	43%
Incheon	2632178	421	0.01599	14391717	3684	29%	48%
Gyeonggi	10853157	1484	0.01367	25244874	5168	51%	68%
Busan	3657840	495	0.01353	28902714	5663	59%	74%
Gwangju	1408106	189	0.01342	30310820	5852	62%	77%
Gangwon	1521099	204	0.01341	31831919	6056	65%	79%
Chungnam	1982495	259	0.01306	33814414	6315	69%	83%
Daegu	2525836	311	0.01231	36340250	6626	74%	87%
Chungbuk	1501674	168	0.01119	37841924	6794	77%	89%
Ulsan	1095105	122	0.01114	38937029	6916	79%	91%
Gyeongbuk	2711900	220	0.00811	41648929	7136	85%	94%
Jeonbuk	1895500	127	0.00670	43544429	7263	88%	95%
Jeju	559747	37	0.00661	44104176	7300	90%	96%
Jeonnam	1976465	129	0.00653	46080641	7429	94%	97%
Gyeongnam	3187110	192	0.00602	49267751	7621	100%	100%
Total	49267751	7621	0.01547	49267751	7621	100%	100%

(Data from: MU, 2006a; Korea National Statistical Office [KNSO], 2006)

Table A-6 Computation of Segregation Curve for N. Korean Refugees in Seoul City

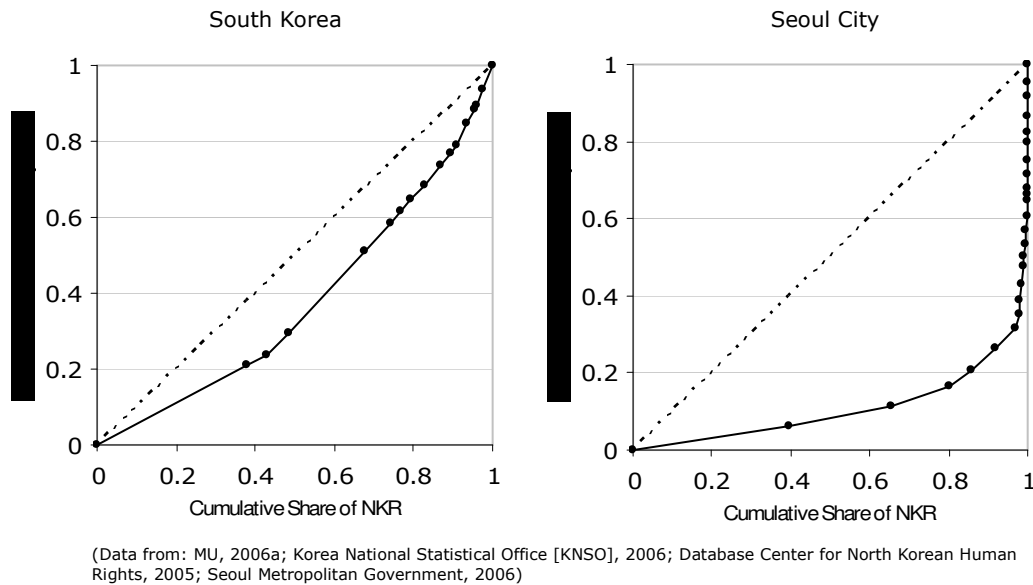
Sub-district	Population Count			Cumulative Number		Cumulative %	
	Total	NKR	% NK	Total	NKR	Total	NKR
Nowon	624855	1151	0.1842	624855	1151	6%	40%
Gangseo	557373	754	0.1353	1182228	1905	11%	66%
Yangcheon	502788	423	0.0841	1685016	2328	16%	80%
Jungnang	429922	157	0.0365	2114938	2485	21%	86%
Songpa	610023	174	0.0285	2724961	2659	26%	92%
Gangnam	547775	151	0.0276	3272736	2810	32%	97%
Seodaemun	355934	26	0.0073	3628670	2836	35%	98%
Dongdaemun	386280	12	0.0031	4014950	2848	39%	98%
Guro	427119	12	0.0028	4442069	2860	43%	99%
Seongbuk	467308	12	0.0026	4909377	2872	48%	99%
Yongsan	240077	6	0.0025	5149454	2878	50%	99%
Seongdong	342691	6	0.0018	5492145	2884	53%	99%
Gangbuk	355334	6	0.0017	5847479	2890	57%	100%
Mapo	393155	6	0.0015	6240634	2896	61%	100%
Dongjak	414668	6	0.0014	6655302	2900	65%	100%
Jongno	173861	0	0.0000	6829163	2900	66%	100%
Jung-gu	134420	0	0.0000	6963583	2900	68%	100%
Gwangjin	380480	0	0.0000	7344063	2900	71%	100%
Dobong	383448	0	0.0000	7727511	2900	75%	100%
Eunpyeong	473456	0	0.0000	8200967	2900	80%	100%
Geumcheon	263936	0	0.0000	8464903	2900	82%	100%
Yeongdeungpo	421327	0	0.0000	8886230	2900	86%	100%
Gwanak	537235	0	0.0000	9423465	2900	92%	100%
Seocho	406875	0	0.0000	9830340	2900	95%	100%
Gangdong	466664	0	0.0000	10297004	2900	100%	100%
City Total	10297004	2900	0.0282	10297004	2900	100%	100%

(Data from: Database Center for North Korean Human Rights, 2005; Seoul Metropolitan Government, 2006)

Now, a segregation curve can be drawn using the cumulative percentage of two

population sub-groups. The curve is basically based on the construction of a Lorenz Curve. That is, each observation from the sub-district will be plotted as a dot having cumulative percentage value of ethnic or racial group population on the x-axis, and cumulative percentage value of others on the y-axis. If the population distribution of the ethnic or racial group shows no difference from the others, then the segregation curve will be a straight line, which is referred as ‘equality line’. However, if there is difference in the distribution, the curve will be plotted below the equality line. Essentially, the magnitude of deviation of the segregation curve from the equality line represents the level of spatial concentration of the ethnic or racial group concerned. Figure A-1 shows the segregation curve for North Korean refugees in South Korea and Seoul respectively.

Figure A-1 Segregation Curve for North Korean Refugees



The segregation index uses different methods to quantify the deviation between the equality line and segregation curve (Duncan & Duncan, 1955). Segregation indexes can be formulated to illustrate the deviation using different mathematical methods. Among them, the index of dissimilarity is used here for the sake of simplicity in

calculation and interpretation.

Index of dissimilarity is calculated as follows:

$$D = (1/2) \sum_i^k |x_i - y_i|$$

where x_i is the percentage of ethnic or racial group living in i sub-district, and y_i is the percentage of others living in i sub-district. The value can range from 0 to 100. When the index is 0, there is no spatial segregation in the study area. On the other hand, an index of 100 means that perfect residential segregation is in place, where the residence of an ethnic or racial group is completely detached from that of other groups. The value of the index of dissimilarity also indicates the percentage of ethnic or racial group that needs to change their residence to another sub-district in order to achieve an even population distribution of that group within the study area. Table A-3 & A-4 shows the computation process of index of dissimilarity for North Korean refugees in South Korea and Seoul City respectively.

Table A-7 Computation of Index of Dissimilarity for N. Korean Refugees in S. Korea

Region	Population Count		%		%	% Difference
	Total	NKR	Total	NKR		
Seoul	10297004	2900	21%	38.1%	17.15%	17.15%
Busan	3657840	495	7%	6.5%	-0.93%	0.93%
Incheon	2632178	421	5%	5.5%	0.18%	0.18%
Daegu	2525836	311	5%	4.1%	-1.05%	1.05%
Gwangju	1408106	189	3%	2.5%	-0.38%	0.38%
Daejeon	1462535	363	3%	4.8%	1.79%	1.79%
Ulsan	1095105	122	2%	1.6%	-0.62%	0.62%
Gyeonggi	10853157	1484	22%	19.5%	-2.56%	2.56%
Gangwon	1521099	204	3%	2.7%	-0.41%	0.41%
Chungbuk	1501674	168	3%	2.2%	-0.84%	0.84%
Chungnam	1982495	259	4%	3.4%	-0.63%	0.63%
Gyeongbuk	2711900	220	6%	2.9%	-2.62%	2.62%
Gyeongnam	3187110	192	6%	2.5%	-3.95%	3.95%
Jeonbuk	1895500	127	4%	1.7%	-2.18%	2.18%
Jeonnam	1976465	129	4%	1.7%	-2.32%	2.32%
Jeju	559747	37	1%	0.5%	-0.65%	0.65%
Total	49267751	7621	100%	100.0%	0.00%	38.26%

Index of Dissimilarity = 19.13

(Data from: MU, 2006a; Korea National Statistical Office [KNSO], 2006)

Table A-8 Computation of Index of Dissimilarity for N. Korean Refugees in Seoul

Gu	Population Count		%		%	% Difference
	Total	NKR (sample)	Total	NKR		
Nowon	624855	212	6.10%	39.70%	33.60%	33.60%
Gangseo	557373	139	5.40%	26.00%	20.60%	20.60%
Yangcheon	502788	78	4.90%	14.60%	9.70%	9.70%
Songpa	610023	32	5.90%	6.00%	0.10%	0.10%
Jungnang	429922	29	4.20%	5.40%	1.20%	1.20%
Gangnam	547775	28	5.30%	5.20%	-0.10%	0.10%
Seodaemun	355934	5	3.50%	0.90%	-2.60%	2.60%
Guro	427119	2	4.10%	0.40%	-3.70%	3.70%
Dongdaemun	386280	2	3.80%	0.40%	-3.40%	3.40%
Seongbuk	467308	2	4.50%	0.40%	-4.10%	4.10%
Gangbuk	355334	1	3.50%	0.20%	-3.30%	3.30%
Dongjak	414668	1	4.00%	0.20%	-3.80%	3.80%
Mapo	393155	1	3.80%	0.20%	-3.60%	3.60%
Seongdong	342691	1	3.30%	0.20%	-3.10%	3.10%
Yongsan	240077	1	2.30%	0.20%	-2.10%	2.10%
Jongno	173861	0	1.70%	0.00%	-1.70%	1.70%
Jung-gu	134420	0	1.30%	0.00%	-1.30%	1.30%
Gwangjin	380480	0	3.70%	0.00%	-3.70%	3.70%
Dobong	383448	0	3.70%	0.00%	-3.70%	3.70%
Eunpyeong	473456	0	4.60%	0.00%	-4.60%	4.60%
Geumcheon	263936	0	2.60%	0.00%	-2.60%	2.60%
Yeongdeungpo	421327	0	4.10%	0.00%	-4.10%	4.10%
Gwanak	537235	0	5.20%	0.00%	-5.20%	5.20%
Seocho	406875	0	4.00%	0.00%	-4.00%	4.00%
Gangdong	466664	0	4.50%	0.00%	-4.50%	4.50%
Total	10297004	534	100.00%	100.00%	0.00%	130.40%

Index of Dissimilarity =

65.2

(Data from: Database Center for North Korean Human Rights, 2005; Seoul Metropolitan Government, 2006)

The index of dissimilarity, and even segregation indexes as a whole, have received a lot of criticisms in the literature due to the inherent possibility of misrepresenting reality. The sources of problem include extreme simplicity, checkboard issue, choice of areal unit, the affect of size of the areal unit, lack of consideration on spatial relationship among the areal units, etc (White, 1983). With the development of other segregation indexes which try to address these issues, accompanied by advancement in spatial statistics packages in GIS, it would be meaningful to compute those alternative indexes and compare the results among them in order to more fully understand the situation of spatial segregation in any given study area.

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