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College Leaver's Job Location Choice
: Focusing on the Students in the Outside of the Seoul Capital Region[*]

Park, Hee-Cheol[**] · Kang, Myounggu[***]

Abstract

The purpose of this study is to identify the factors of job transfer between the Seoul capital region and the non-capital region and to find policy measures to mitigate the regional brain drain. Despite the current regional talented person policy, regional brain drain has continued to occur. The logistic regression analysis aimed to reconsider the existing view that wages and job security influence job transfer and to identify the impact of local amenities on local talented person settlement. According to the analysis, wages and job security were not significant and did not affect job transfer. In the analysis of factors related to amenities, college, residential environment, commuting time, and cultural and artistic activities were significant factors. Based on the results of the analysis, this study derives policy implications such as the need for support for non-capital colleges and local enterprises, and the need for sufficient securing of non-capital amenities.

Keywords Migration for Job, Logistic, Brain Drain, Returnee, Amenity
주제어 대학 졸업자 취업 이동, 로지스틱 회귀분석, 인재 유출, 지역 회귀, 지역 어메니티

Ⅰ. Introduction

1. Background and Purpose of Study

Graduates of colleges in non-capital regions are defined as regional talent. Their migration is a serious problem in non-capital regions because it leads to a deterioration of regional human resources and industries. In order for local governments to solve regional brain drain and to secure competitiveness in attracting regional talent, it is necessary to pay attention to the job-related migration of regional talent originally from the Seoul capital region but who have graduated from non-regional colleges. Because regional talent originally from the Seoul capital region have advantages in capital region employment such as housing and the sociocultural costs associated with adaptation to a new environment, local governments are disadvantageous in attracting local talent from the capital region. However, the fact that some regional talent originally from the Seoul capital region chose non-capital employment indicates that there are factors inviting them to remain in non-capital regions. To develop measures alleviating regional brain drain and to enhance the competitiveness of non-capital regions, it is important to identify the factors that influenced regional talent originally from the Seoul capital region to stay in non-capital regions for employment.

First, to alleviate regional brain drain, the effectiveness of existing policies should be reviewed. Existing policies include

the regional talent allocation of public institutions, the regional quota system of private enterprises, and incentives for working in non-capital regions. These policies have been implemented with a focus on wages and job security from the perspective of job supply. However, according to the 2017 Graduates Occupational Mobility Survey (GOMS), the average monthly wage was similar at KRW 1,915,000 for job holders in the Seoul capital region and KRW 1,920,000 for those in non-capital regions. In addition, the proportion of full-time workers was approximately 57% in the Seoul capital region and 60% in non-capital regions, indicating a higher level of job security in the latter. The occurrence of regional brain drain despite the higher job security shows that non-capital regions are not satisfying the job demand of regional talent.

In *Cities and the Creative Class*, Florida (2008) stated that the creative class prefer places that stimulate and strengthen their creativity. Also, he emphasized the importance of city quality. Although Kyungkeun Kim and Hyun Woo Lee (2017), Junghee An (2018), and Dongwoo Kang (2019) studied amenities aimed at enhancing the quality of cities, domestic research is still lacking in this area. The top factor considered for employment by college graduates according to 2017 GOMS was wage (26.42%), followed by one's aptitude/interest (21.51%), and relevance to one's major (12.19%). Other factors taken into account were individual development potential (6.63%), working environment (3.19%), and fringe benefits (1.74%). The survey showed that the migration decision of graduates of local colleges is influenced not only by wage and job security, but also by aptitude, interest and quality of life. Thus, demand analysis for job-related migration of regional talent should be conducted at the levels of the individual and city quality.

This study analyzed the factors influencing job-related migration of regional talent originally from the Seoul capital region but who graduated from colleges in non-capital regions. By identifying factors that induced regional talent originally from the Seoul capital region to remain in non-capital regions, this study explored measures to enhance the competitiveness of non-capital regions and to prevent regional brain drain. The analysis was limited to respondents of the 2017 GOMS, conducted by the Korea Employment Information Service, who provided information of their high school, college, and current workplace location. Logistic regression was adopted for the analysis.

and the results were utilized to recommend effective policies in preventing brain drain of regional talent originally from the Seoul capital region.

II. Theories and Literature Review of College Graduates' Employment and Migration for Job

1. Employment of College Graduates

Theories related to the employment of college graduates can be classified into labor demand theory, labor supply theory, and the relationship between labor demand and labor supply.

According to labor supply theories, employment is influenced by individual factors such as individual competence and skills. The major theories are the human capital theory, the selective theory, and the job search theory. First, human capital theory implies that wage is determined by internalized abilities. Second, the selective theory explains that educated employees who receive higher wages are not necessarily superior in terms of knowledge and skills. Finally, The job search theory explains frictional unemployment (Jaeheon Shim and Euijune Kim, 2012).

Labor demand theories include the segmented labor market and the statistical discrimination theory. The segmented labor market theory perceives division of the labor market according to gender, age, employment type, level of education, and business size as the result of the labor market structure or employment system (Jongchan Lee and Jihyeon Park, 2015). The statistical discrimination theory asserts that employers utilize average information on gender, level of education, and region to compensate for the lack of information on candidates (Youngbum Park, 2007).

The labor demand and supply linkage theory states that job-seeking methods connecting labor demand and supply and factors like social relations are important in market entry (Jaeheon Shim and Euijune Kim, 2012). A representative theory is the social network theory, which explains job-seeking activities that cannot be fully explained by rational individual decision-making as the influence of the social network.

Based on the above theories, the key factors influencing college graduates' employment can be classified into college

characteristics and company characteristics.

First, in research that examined factors related to college characteristics, the employment rate was lower among graduates of two-year colleges than that of four-year universities, and lower among graduates of state universities than that of private universities (Sungik Park and Jangsik Cho, 2019). College conditions, funds, and efforts to academic support had no positive effect on employment (Byoung-Joo Kim and Hwa-joung Seo, 2013).

Research on factors related to company characteristics revealed that college graduates considered business size when looking for a job, and were attracted by higher wages and stable positions (Jaeheon Shim and Euijune Kim, 2012).

2. Factors Influencing College Graduates' Migration for Job

Past researches have largely three viewpoints on migration for work. The studies have attributed such migration to the spatial inconsistency between college and work opportunity sites, individual factors, and regional characteristics (Jaeheon Shim and Euijune Kim, 2012).

First, the spatial inconsistency between college and work opportunity sites can be divided into two types: the migration of excess human resources due to oversupply of college education (Yeonghan Park et al, 2005), and the migration of graduates to regions with labor demand matching their major due to differences in specialized industries by region (Nam-Cheol Moon, 2009).

Second, job migration caused by individual factors is similar to how employment is influenced by individual preferences. Past researches showed that the factors such as college location, parents' earnings at the time of college admission, father's level of education, GPA, and English proficiency score have a positive effect on regional brain drain, implying that job-related migration is influenced by individual factors (Jangsoo Ryu, 2015).

The last perspective is that migration for job is determined by regional characteristics. The cost of moving closer to the workplace and the familiarity with a certain sociocultural environment are the factors that influence regional talent to move back to their former neighborhoods. For instance, some graduates may choose to move back to their former neighborhoods if housings near the workplace are unafford-

able or if they feel daunted by the unfamiliar environment. This refers to cases of graduates whose high schools and colleges are in different regions, and who join the labor market in the high school region. One study classified college graduates into four types depending on their high school location and college location, but it was limited in that it only focused on the relationship with job-related characteristics (Jaeheon Shim and Euijune Kim, 2012). While there were studies that analyzed the relationship between amenity factors and youth migration, research on the influence of amenity factors on college graduates' migration was hardly available.

3. Migration for Job in Relation to Amenity Factors

Amenity refers to the comfort experienced towards a certain object or environment. Urban amenities are related to various factors such as nature, architecture, and weather (Young Ok Jeon, 2003). Increasing number of college graduates are prioritizing the quality of life such as working environment and welfare during employment. The consumer city theory states that the quality of life is regarded as more important among people with a higher level of education, who are more inclined to migrate to cities with better amenities, such as restaurants and theaters (Glaeser et al., 2001; Glaeser and Gottlieb, 2006; Dongwoo Kang, 2019).

Past researches showed that housing cost was not significant, and that cultural infrastructure was negatively related to the rate of increase in youth. The reason is that the areas with weaker cultural infrastructure has more job opportunities for youth with high school degrees or lower (Dongwoo Kang, 2019). A study that examined factors influencing migration of the creative class found that people were more likely to move to workplaces in regions with more convenient public transport, higher number of medical facilities, higher number of educational facilities, and higher social welfare budget (Junghee An, 2018). Among the factors influencing people in their 20s and 30s to move from provinces to the capital, the pull factors related to the quality of life were surface pavement rate, number of cultural facilities, number of hospital wards, and number of college students, while the push factors were lump-sum housing deposit and number of social welfare facilities (Kyungkeun Kim and Hyeonwoo Lee, 2017).

Ⅲ. Analysis of College Graduates' Employment and Migration for Job

1. Subjects of Analysis

This study utilized the results of 2017 GOMS, conducted by the Korea Employment Information Service. The sample was 4% of the college graduate population, selected by stratified sampling based on gender, major, college location, and college type. A total of 18,200 graduates of two/three-year colleges and four-year universities as of September 1, 2017 were interviewed in person. The survey contained information on economic activities including jobs, job-seeking activities, and college life of the graduates who obtained their degrees in 18 months.

Among the responses to 2017 GOMS, this study selected 13,274 respondents who had provided information on high school, college, and current workplace. The subjects of analysis were 1,570 respondents who graduated from non-capital colleges out of the 5,629 respondents who graduated from high schools in the Seoul capital region (see Table 1).

Among the 1,570 regional talent who were originally from the Seoul capital region, 1,211 (77.13%) found their jobs in the Seoul capital region, while 359 (22.87%) remained in non-capital regions. The former group was about 3.4 times larger than the latter, verifying the occurrence of regional brain drain.

2. Analysis Model

A logistic regression model was used to describe the change in probability of graduates settling down in the Seoul capital region. The dummy dependent variable was the workplace location, where 1 represents employment in non-capital regions, and 0 represents employment in the Seoul capital region.

Table 1. Movement of local talent

High school	University	Job	Classification	Observation
Capital 5,628 (people)	Non-capital 1,570 (people) 100.0(%)	Capital	Regression	1,211(people)
				77.13(%)
		Non-capital	Migration	359(people)
				22.87(%)

Source: Korea Employment Information Service. 2017 Graduates Occupational Mobility Survey(GOMS)

$$Y_i = \begin{cases} 1, Y_i = 1 : \text{employed in non-capital region} \\ 0, Y_i = 0 : \text{employed in capital region} \end{cases}$$

The probability of choosing a job in the Seoul capital region is determined by the probability distribution Y_i. If the probability distribution of the error term is symmetric about zero, can be expressed as follows.

$$\begin{aligned} P_i &= \Pr(Y_i = 1) = \Pr(I^* \geq 0) \\ &= \Pr[(BX + u_i \geq 0)] \\ &= \Pr(u_i \geq -BX) = \Pr(u_i \leq BX) \end{aligned}$$

The logit model assumes that the probability distribution of u_i follows a logistic probability distribution, and can be expressed as follows.

$$P_i = \frac{1}{1 + e^{-Z_i}}, \ Z_i = BX + u_i$$
$$1 - P_i = \frac{1}{1 + e^{Z_i}}$$

Since P_i and Z are non-linearly related, the expression can be modified into a linear relationship as follows to facilitate estimation.

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i}$$

The ratio of the probability of choosing a job in the Seoul capital region to the probability of choosing otherwise is called the odds ratio. Applying a log to the odds ratio creates a logistic regression model, which establishes a linear relationship between the probability, explanatory variable, and coefficient.

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i = BX + u_i$$

3. Definition of Variables

Factors involved in the choice of workplace location by regional talent originally from the Seoul capital region were

individual and college characteristics in the context of labor supply, and job characteristics in the context of labor demand (see Table 2). Amenity factors, which are factors outside the labor market, were set as variables as they were expected to influence the workplace location selection of regional talent originally from the Seoul capital region.

Under individual characteristics, the independent variables were gender, age, number of certificates, completion of vocational education, and grades. Certificates, vocational education, and grades contribute to the accumulation of human capital, and allow regional talent to seek quality job opportunities in the capital region. Past research considered variables such as the number of certificates, grades, and English proficiency scores, (Jaeheon Shim and Euijune Kim, 2012), or completion of overseas language study (Jangsoo Ryu, 2015). One study took into account parents' financial circumstances based on income (Sungik Park and Jangsik Cho, 2019).

Under college characteristics, the independent variables were college type, satisfaction, and major match. In terms of labor supply, colleges play an important role in regional development by fostering regional talent, providing job search opportunities, and supporting networking with regional industries. Regional talent who graduated from four-year universities tend to prefer jobs that maximize their knowledge accumulated over the longer period of study compared to two-year colleges, and this preference is reflected in their job-related migration. College satisfaction is determined by academic achievements, student support, and college reputation, and college vision and reputation are shaped by ties with the local community. College satisfaction is likely to have influenced the decision of regional talent to remain in non-capital regions as non-capital colleges are highly rated in such regions. Considering how regional differences in specialized industries results in migration to regions with labor demand matching one's major, job-major match can be seen as an important factor behind migration. A good match between major and job expertise may be an indicator of migration due to major. The survey used a five-point scale for satisfaction and major match, where 1 represents highly dissatisfied or inconsistent, and 5 means highly satisfied or consistent. In this study, college satisfaction and major match were set as dummy variables by having ratings of 4 or higher take the value of 1. The independent variables in past studies were discipline, major satisfaction, and college satisfaction (Jangsoo Ryu, 2015), and college type, and state/non-state in another (Sungik Park and Jangsik Cho. 2019). Other independent variables included

Table 2. Variables

		Variable	Explanation	Source
Dependent		Workplace location	Capital=0, Non capital=1	
Independent	Personal characteristic	Gender	Female=1, Male=0	2017 GOMS
		Age	Age	
		Certificate	Number of certificate	
		Vocational education	Completed=1, Not completed=0	
		Grade	Grade	
	University characteristic	Type	University=1, College=0	
		Satisfaction	Satisfaction=1, Unsatisfaction=0	
		Major match	Consistency=1, Unconsistency=0	
	Job characteristic	Wage	Wage	
		Stability	Full-time=1, etc=0	
		Business size	Large enterprises=1, etc=0	
	Area characteristic	Commuting time	Commuting time	
		Land price	Land price Median	Data Portal
		Cultural activity	Number of cultural activity	KOSIS

satisfaction with job search support provided by college, and satisfaction with the quality of classes (Jaeheon Shim and Euijune Kim, 2012).

Under job characteristics, the independent variables were wage, stability, and business size. Job characteristics provide insights into the type of jobs that would induce regional talent to remain in non-capital regions. Existing policies attempted to attract regional talent by raising wages or enhancing job stability. However, the continued brain drain highlights the need to re-assess the effectiveness of such measures in preventing job-related migration. Large companies or small/medium enterprises of a larger scale with regional offices are a major source of job opportunities for the local community. Since migration will be to a place with high labor demand, regional talent are likely to migrate to regions with large businesses. Business size was set as a dummy variable, with companies having more than 300 employees classified as large enterprises.

Under regional characteristics, commuting time, land price, and cultural activity were set as independent variables. Regional characteristics can be used to indicate migration occurring due to spatial or environmental factors that are not related to the labor market. With heightened interest in quality of life, residential location has also become increasingly important. According to a 2019 report by the KB Financial Group Management Research Institute, single-person households in their 20s and 30s consider distance to workplace as the top priority when choosing housing. From this, we can presume that regional talent would also prefer a workplace with shorter commuting time. The officially assessed reference land price has two meanings. One is the value of land, which reflects geographical convenience and the availability of quality amenities. The other is the housing cost, where a higher land price leads to more expensive housing. Regional talent who have just begun working have to choose between spatial convenience or affordable housing, which means a trade-off of the other. The hypothesis of this study was that regional talent would prefer affordable housing over spatial convenience, and thus find a job in capital regions with lower land prices. The median land price of the residential area as provided in officially assessed reference land price was obtained, and a value was assigned based on the current workplace location. Amenities have a passive function in that value is generated only if used, and holds

significance when there is actual demand. This study assigned active demand through cultural activities by region. This was used to test the hypothesis that regional talent enjoy cultural activities to improve quality of life, and that such factors have an influence on job-related migration.

4. Comparison of Characteristics and Model Verification

To examine the characteristics of regional talent originally from the Seoul capital region, the average and proportion of individual characteristics, college characteristics, job characteristics, and regional amenity characteristics were compiled in a table (see Table 3). Those who found jobs in non-capital regions were classified as "migration," and those who returned to the capital region as "regression."

Looking at the gender of regional talent originally from the Seoul capital region, both men and women had higher proportions finding jobs in the capital region. The proportion of men finding jobs in the capital region was 73.14%, and that of women was 83.31%, meaning that women had a stronger tendency to be employed in the capital region. Out of the 382 graduates who completed vocational training, 16.49% were employed in non-capital regions and 83.51% in the Seoul capital region. That is, graduates who received practical training were more likely to move to the capital region. In terms of number of certificates and GPA, the two groups did not show a large difference, but graduates who remained in non-capital regions were somewhat superior in these regards.

Under college characteristics, 22.13% of 1,306 graduates of four-year universities were employed in non-capital regions. Out of the 264 who graduated from professional colleges or universities of education, 26.52% were employed in non-capital regions. While there were more college graduates who settled down in non-capital regions than university graduates, the latter was higher in proportion as there were five times more graduates of four-year universities than college graduates. As for college satisfaction, 29.39% of 624 graduates who expressed satisfaction settled down in non-capital regions, while only 18.50% of 946 who were dissatisfied remained in non-capital regions.

Under job characteristics, 25.32% of 782 graduates whose jobs were a high match with their major were working in

Table 3. Characteristics comparison

	Variable		Migration	Regression	Total (people)
Personal	Gender	Male	26.86 (%)	73.14 (%)	953
		Female	16.69 (%)	83.31 (%)	617
	Age		27.80	26.28	–
	Certificate		1.12 (units)	1.06 (units)	–
	Vocational education	Completed	16.49 (%)	83.51 (%)	382
		Not complete	24.92 (%)	75.08 (%)	1,188
	Grade		3.67 (points)	3.59 (points)	–
University	Type	University	22.13 (%)	77.87 (%)	1,306
		College	26.52 (%)	73.48 (%)	264
	Satisfaction	Satisfaction	29.49 (%)	70.51 (%)	624
		Unsatisfaction	18.50 (%)	81.50 (%)	946
Job	Major match	Consistency	25.32	74.68	782
		Unconsistency	20.43	79.57	788
	Wage		190.01 (ten thousand won)	182.14 (ten thousand won)	–
	Stability	Full-time	23.73 (%)	76.27 (%)	906
		etc	21.69 (%)	78.31 (%)	664
	Business size	Large enterprise	35.71 (%)	64.28 (%)	280
		etc	20.08 (%)	79.92 (%)	1290
Area	Commuting time		14.71 (minutes)	20.18 (minutes)	–
	Land price		48.61 (ten thousand won/m^2)	234.32 (ten thousand won/m^2)	–
	Cultural activity		65.28 (times per 100,000people)	75.25 (times per 100,000people)	–

non-capital regions. On the other hand, only 20.43% of 788 graduates whose jobs were not related to their major were working in non-capital regions. As for job security, 20.73% of 906 graduates working full-time were in non-capital regions, and 21.69% of 664 graduates working part-time were in non-capital regions. The average wage of non-capital jobs amounted to KRW 1,900,100, while that of jobs in the capital region was KRW 1,821,400. The difference in average wage between the two is slight at only KRW 80,000. Out of 280 graduates working in large companies with 300 or more employees, 35.71% were in non-capital regions. Out of 1,290 graduates working in companies with less than 300 employees, 20.08% were in non-capital regions. There were fewer graduates working in large companies, but a higher proportion had remained in non-capital regions.

Under regional characteristics, the commuting time was 14.71 minutes for non-capital regions, and 20.18 minutes for the Seoul capital region. Since this reflects the actual distance from one's home to the workplace, non-capital regions are more advantageous in terms of job-housing proximity. The officially assessed reference land price was KRW 48,610,000/m^2 for non-capital regions, and KRW 234,320,000/m^2 for the Seoul capital region. This means that graduates will be able to find more affordable housing near workplaces in non-capital regions. The average number of cultural activities in a year was 65.28 times per 100,000 persons in non-capital regions, and 75.25 times per 100,000 persons in the Seoul capital region. That is, the Seoul capital region is more active than non-capital regions in offering leisure and cultural activities.

Before proceeding with analysis, the appropriateness of the model was tested through a model verification process. The Breusch-Pagan test and multicollinearity test were employed to test for heteroskedasticity and collinearity. From conducting the Breusch-Pagan test, heteroskedasticity was observed between independent variables, and the analysis was performed using the robust standard error method. The multicollinearity result obtained using the VIF of each

variable was smaller than 2, which indicates that there is no multicollinearity.

5. Results of Analysis

This research model transformed workplace location, a dependent variable having a binomial distribution, from non-linear form to linear form using utility index as the link function. The logistic regression model shows the relationship between the log-applied odds ratio and independent variables. The regression coefficient and intercept must be converted back by applying an exponential to the log odds for interpretation. If the coefficient in the form of log odds is greater than 1, there is an increase of $\{(\beta-1)*100\}$% when an independent variable increases by 1 unit and other conditions remain the same. If the coefficient is smaller than 1, there is a decrease of $\{(1-\beta)*100\}$% when an independent variable increases by 1 unit and other conditions remain the same. The results table shows the odds ratio regression coefficient together with the logistic regression coefficient for

easier interpretation (see Table 4).

From an analysis of individual characteristics in relation to non-capital employment, gender, age, and GPA were found to be significant variables. The probability of finding a job in non-capital regions after graduating from a non-capital college was 29.6% lower for women than men. The probability of non-capital employment increased by about 5% for every one-year increase in age, and by about 81.2% for every unit increase in GPA. The number of certificates and completion of vocational training were not significant.

Under college characteristics, college satisfaction was a significant variable. College satisfaction refers to the satisfaction felt by students towards educational services. Graduates who were satisfied were 43.0% more likely than those who were not to remain in non-capital regions. This implies that improving the quality of educational services to a satisfactory level can induce college graduates to find jobs and settle down in non-capital regions. Meanwhile, college type and major match had no significant effect.

Under job characteristics, business size was a significant

Table 4. Logistic regression analysis

Workplace location		Migration=1, Regression=0			
	Variables	Coef.	Robust std.err	p	Odds ratio
Personal characteristic	Gender	−0.351	0.199	0.078*	0.704
	Age	0.049	0.021	0.018**	1.050
	Certificate	−0.033	0.056	0.555	0.967
	Vocational education	−0.357	0.234	0.128	0.700
	Grade	0.594	0.233	0.011**	1.812
University characteristic	Type	0.116	0.236	0.622	1.124
	Satisfaction	0.358	0.182	0.049**	1.430
	Major match	0.212	0.184	0.250	1.236
Job characteristic	Wage	−0.001	0.001	0.557	0.999
	Stability	0.093	0.185	0.617	1.097
	Business size	0.903	0.232	0.000***	2.466
Area characteristic	Commuting time	−0.020	0.007	0.007***	0.981
	Land price	−0.037	0.003	0.000***	0.964
	Cultural activity	0.038	0.005	0.000***	1.038
Constant		−3.310	1.062	0.002***	0.037
N		1,570			
χ^2(p-value)		167.36***			
Pseudo R^2		0.5440			

*p<.10, **p<0.05, ***p<0.01

variable. Graduates employed by large companies were 146.6% more likely than those who were not to remain in non-capital regions. This means that large companies play a role in attracting graduates to stay in non-capital regions rather than return to the Seoul capital region. Unlike past research, wage and job security were found to be insignificant. That is, those who graduated from a college in the non-capital region after graduating from a high school in the capital region chose jobs regardless of wage and full-time status.

Under regional amenities, commuting time, housing cost, and number of cultural activities were significant variables. The probability of settling down in non-capital regions decreased by about 1.9% for every unit increase in commuting time. In other words, regional talent were more likely to settle down in non-capital regions if less commuting time was involved. The probability of choosing a non-capital workplace dropped by about 3.6% for an increase in land price of the workplace location by KRW 10,000/m². Considering how non-capital regions have a lower land price compared to the capital region, we can presume that graduates are more likely to choose non-capital jobs if such workplaces have lower land prices. The expensive housing cost needed to experience quality amenities acts as a burden, and graduates choose cheaper housing even if it means lowering amenity standards. The probability of choosing a non-capital job increased by about 3.8% for every unit increase in the number of cultural activities per 100,000 persons. This shows that the actual number of cultural activities, apart from physical infrastructure, can be effective in inducing graduates to remain in non-capital regions.

IV. Summary and Conclusion

This study examined the factors influencing job-related migration between the Seoul capital region and non-capital regions based on workplace location of regional talent originally from the Seoul capital region, and explored directions to alleviate brain drain. Regional brain drain has persisted despite current policies related to regional talent. According to analysis results, college graduates migrate to other regions for jobs regardless of wage and job security. This shows that current policies, focused on providing quality jobs, may be less than effective. In amenity-related factor analysis, educa-

tion was significantly related to college, residential environment to commuting time and land price, and culture and arts to cultural activities. In terms of education-related amenities, regional talent with higher GPA and college satisfaction had a higher probability of settling down in non-capital regions. This means that non-capital colleges in environments suited to foster outstanding regional talent can induce graduates originally from the Seoul capital region to remain in non-capital regions. Looking at amenities related to residence and cultural arts, regional talent had a higher probability of settling down in non-capital regions if there was shorter commuting time, lower land price, and a higher number of cultural activities. Regional talent originally from the Seoul capital region prefer non-capital regions if they have sufficient personal time and are less burdened financially. Their preference for regions with an active cultural arts scene shows that non-capital regions should improve the environment to support leisure activities.

The logistic regression analysis conducted by this study found that regional talent could see greater appeal in remaining in non-capital regions based on not only labor demand factors, but also labor supply factors, and factors outside the labor market. First, business size plays a role in inducing regional talent originally from the Seoul capital region to settle down in non-capital regions. Considering how business size is directly related to jobs, the attraction of large companies or expansion of small/medium-sized enterprises is expected to significantly boost the number of regional talent originally from the capital region and remaining in non-capital regions. Second, services provided by non-capital colleges contribute to the decision of regional talent originally from the Seoul capital region to remain in non-capital regions. Providing support for non-capital colleges in fostering outstanding regional talent will help to increase the number of regional talent remaining in non-capital regions as graduates were more likely to remain if they had a higher satisfaction towards college services spanning education, career guidance, and major, and if they had better academic performance. The analysis revealed that college major had no effect on current job, and non-capital regions should devise policies based on this finding by forging close links between major and job. Third, regional talent originally from the Seoul capital region considered quality of life in their job-related migration. The analysis of regional

amenities showed that regional talent originally from the Seoul capital region chose non-capital jobs for shorter commuting time and more affordable housing. The opportunity cost is losing job opportunities in the capital region due to excess housing near the workplace and poorer amenity facilities. To attract more regional talent originally from the Seoul capital region, non-capital regions should ensure an environment rich in cultural and leisure activities, and develop policies that reduce the gap between conveniences and opportunity costs.

Lastly, this study has the following limitations. First, the analysis was confined to capital vs. non-capital regions due to limited pre-processing of data, and could not examine movement between cities and provinces. The scope of research may be expanded by looking at movement between cities and province in follow-up studies. Second, it is unclear whether regional and job characteristics had a direct effect on the probability of non-capital employment, and whether the general characteristics of non-capital regions and companies were reflected. Theoretical supplementation is required in these areas.

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