The Economic and Non-economic Factors Affecting Rural-Urban Migratory Behavior in Korea*

Kim, Se-yeul **

I. Introduction

1. Problem Setting

1) Urbanization in Korea

Korea has experienced high rates of economic growth in the decade of the 1960's; its gross national product has increased at an average of about 10 percent per year. This rapid growth of the Korean economy, which is marked by industrialization, has generated a progressive concentration of economic activities in several large cities. Furthermore, this concentration of rapid economic development only in the modern dynamic industrial sector has stimulated a great number of rural people to flock to these large cities and has

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accelerated the rapid urbanization process.

The second half of the 1960's has seen an especially accelerated pace of urban population increase. Table 1 shows the increasing trend of the urban population in the past. The urban population included only 4.4 percent of the total population in 1925, 11.6 percent in 1944, 17.2 percent in 1949 (excluding North Korea), 24.5 percent in 1955, and 28 percent in 1960. In 1966, the urban population jumped to 33.6 percent with 9,800,000

Table 1.   Growth of Urban Population

Year	Total Population (A) (in 1,000)	Urban Population (B) (in 1,000)	B/A × 100 (percent)
1949a	20,189	3,474	17.2
1955a	21,526	5,281	24.5
1960	24,989	6,996	28.0
1961	24,926	7,107	28.5
1962	26,278	7,926	30.2
1963	27,490	8,733	31.8
1964	28,181	9,037	32.2
1965	28,647	9,267	32.3
1966	29,208	9,810	33.6
1967	29,417	10,158	34.5
1968	29,954	10,853	36.2
1970	31,469	13,609	41.1

Sources: aEconomic Planning Board, *Korea Statistical Yearbook,* 1963 and 1972. Economic Planning Board, *Population and Housing Census Report* 1970.

people. Again, it increased to 41.1 percent with 13,000,000 people in 1970.[1] A striking aspect of Korea's urban growth is that the larger cities tend to grow more rapidly. Norton noted that of six cities with populations greater than 300,000 in 1966, five had grown at an annual rate of 4.7 percent or more between 1960 and 1966. In contrast, of the 16 cities with populations of 100,000 or less, only three grew at an annual rate of more than 3.3 percent[2]. This trend is especially true for the capital city, Seoul. As shown in Table 2, the population of Seoul was 6.1 percent of the national total in 1955, 9.8 percent in 1960, 12 percent in 1964, 17.5 percent in 1970 and 19.8 in 1975. This is an explosive urban situation. "Overurbanization" and growth of the primary cities are crucial issues in Korea. A larger proportion of the population lives in urban places than is justified by their degree of economic development. In this process of rapid urbanization, the growth of one or a few gigantic cities exceeds the growth of other cities and this is one

Table 2. **Comparison of Population Growth of Seoul and All of South Korea**

Year	1955	1960	1964	1970	1975
Total	21,526,374	24,789,241	28,181,096	31,460,994	34,688,000
Seoul	1,574,868	2,445,402	3,424,384	5,509,993	6,884,000
Seoul as Percentage of Total Population	6.1%	9.8%	12%	17.5%	19.8%

Source: Economic Planning Board, *Population and Housing Census Reports*

of the most serious problems Korea is facing.

2) Migration as the Major Cause of Urbanization

Part of this rapid growth of urban population might be due to (1) the rather high rate of overall population increase, which have averaged 2.75 percent per annum (see Table 3) (2) the expansion of city boundaries,[1] and (3) the promotion of "rank" of small towns(up) to cities(shi). However, the most important contributing factor of this overurbanization and excessive growth of primary cities has been the massive influx of rural migrants from depressed rural areas.

We can see some evidence of this phenomenon in Table 5. During the inter-census period 1966 〜 1970, there has been a decrease in the absolute size of the population of some rural provinces which are regarded as agricalatural regions in Korea, despite the fact that rural fertility has exceeded urban fertility (see Table 4). A similar phenomenon

Table 3. **National Popluation Growth Rates**

Year	Annual Growth Rates (percent)
1962	2.85
1963	2.84
1964	2.84
1965	2.70
1966	2.50
1967	2.40
1968	2.30
1969	2.20
1970	1.92

Source: Population Census Reports

[1] As people have poured into urban centers and the central zones have grown more congested, the city administration has incorporated surrounding rural areas and has dispersed the population.

Table 4. Estimated Fertility Ratios (1935–1967)[a]

Year	Nation	Urban	Rural
1935	726	592	735
1955	718	652	742
1960	851	750	912
1962	764	687	851
1963	734	601	823
1964	703	587	800
1965	658	538	758
1966	742	547	867
1967	587	476	694

a. Number of children under the age of five per female between the age of 15 and 44.
Source: Economic Planning Board, *Korea Statistical Yearbook*, 1968.

can be found between urban places and rural areas within one province like North Cholla (see Table 5).

3) Results of Urbanization

The heavy concentration of economic growth in several large cities along with the rapid urbanization in the existing urban centers have caused many undesirable socio-economic phenomena in both rural areas and urban centers. For example, the widening socio-economic disparities between rural and urban areas, the problem of chronic and rising urban unemployment and underemployment, and the shortage of an active rural labor force particularly during the agricultural peak-season have been creating a serious situation which is of widespread and growing concern throughout the country.

Most economic development theories based on the experience of already industrialized countries conclude that the gradual absorption of so-called "redundant" or "surplus" rural labor forces into the growing industrial sectors is possible without reducing agricultural output and causing urban unemployment problems.[3] Indeed, under ideal circumstances the growth of the industrial sector could provide a sufficient number of newly created industrial employment opportunities and bring about a more productive and efficient factor resource allocation in the economy as a whole. However, a common phenomenon experienced by the majority of contemporary developing countries in the process of rapid industrialization and urbanization is problem of chronic and rising urban unemployment and underemployment, that is, the existence of a considerable lag between industrial growth and employment generation in the urban industrial sector.

The scenario of economic development for advanced economies does not explain or

Table 5.　Population Growth by Province (1966 ~ 1970)

Province	1966[a]	1970[b]	Increase	Percentage
Nation	29,159,640	31,469,132	2,309,492	7.9
Seoul	3,793,280	5,536,377	1,743,097	45.9
Pusan	1,426,019	1,880,710	454,691	31.8
Kyongki	3,102,325	3,358,105	255,780	8.2
Kangwon	1,831,185	1,866,928	35,743	1.9
North Chungchong	1,548,821	1,481,566	−67,255	−4.3
South Chungchong	2,902,941	2,860,690	−42,251	−1.4
North Cholla	2,521,207	2,434,522	−86,689	−3.4
South Cholla	4,048,769	4,005,735	−43,034	−1.0
North Kyongsang	4,472,895	4,559,584	86,689	1.9
South Kyongsang	3,175,146	3,119,393	−55,753	−1.7
Cheju	337,052	365,522	28,470	8.4

Sources: [a] Economic Planning Board, 1966 Population Census Report of Korea.
[b] Economic Planning Board, 1970 Population Census Report of Korea

provide a solution to the problem peculiar to the social and economic framework of developing countries. In developing countries, the capacity of the modern industrial sector as the generator of new jobs is limited. The employment creation in the urban industrial sector has been too small to absorb the mass migration from the rural sector (where there has been an excess supply of labor) to the cities. Therefore, there is a risk that rural migrants lacking occupational skills and education will not be able to find employment in a growing modern industrial sector and will fill the private service sector with low productivity jobs and hidden unemployment. In fact, it is quite likely that upon entering the urban labor market these rural migrants, will become totally unemployed.

4) Urban Traditional Sector in Korea

The phenomenon of chronic and rising urban unemployment combined with the heavy inflow of migrants from depressed rural regions seeking jobs in the urban industrial sector, has led to the formation and expansion of another traditional sector in the modern cities where the majority of dwellers are earners of very low incomes or are underemployed or totally unemployed.

5) Shortage of Labor in the Rural Sector

In contrast to the rapid growth in urban population, the increased outmovement of labor from the farm sector to the nonfarm sector has caused a scarcity of labor in the

farm sector, which in turn may create a need for labor-saving and capital-intensive farm technology.

J. H. Park found that the outflow of even a small number of active workers creates a serious labor shortage in the peak seasons because of the critical role of this active labor force in paddy farming. He also pointed out that the capital intensification to remedy the labor shortage in the peak season on a one hectare farm is an expensive solution. Hence, in the process of industrialization of Korea, the labor shortage problem in the rural sector will continue until capital becomes much cheaper.[4]

2. Objectives of this Study

This study seeks to investigate some of the questions such as: Who are the urban migrants? Is the typical migrant rational? Why do people leave their homes? Do migrants respond to economic incentives, or are they mainly activated by non-economic social and institutional factors? How do migrants adjust to urban life and environment? More precisely, the principal objectives of the study are as follows:

1) To examine the demographic, social and economic characteristics of the rural/ urban migrants who have already moved from rural areas to urban centers in North Cholla province, Korea.

2) To identify the underlying economic and social forces which influence the rural/ urban migratory behavior.

3. Methodology and Data Used

For the purpose of acquiring data necessary for this study and collecting detailed primary information about urban migrants, two separate methods were employed. The two methods were (1) administration of a field interview survey, (2) collection of published statistics and documents. The information gathering was carried out in Korea over a three month period between October and December 1972.

1) The Interview Survey

North Cholla province was selected as the survey area based on the criteria that (1) during the 1966–1970 intercensus years this province showed the highest annual rates of population movement and the highest rates of out-migration of rural population, and (2) this province was a depressed agricultural region. There are three adjacent urban centers (shi), Chonju, Kunsan and Iri in this province. The rural areas in this province include 13 counties (kun), Wanju, Chinan, Muju, Changsu, Imsil, Namwon, Sunchang, Chongup, Kochang, Puan, Kimje, Okku and Iksan.

Rural areas are defined in terms of "kun" because this is the geographical and admini-

strative unit for which various necessary rural statistics are available for this study. Urban centers are defined in terms of "shi" because they are the administrative units for which the necessary statistics are available.

For sampling, the relevant population included all household heads who had migrated from the rural "kuns" to one of the three urban centers in North Cholla province since 1961 and who were still residing in these urban centers at the time of the survey. The sample was limited to the age range of 15 to 54. The upper age limit of 54 was chosen because it was assumed that people older than 54 in Korean rural areas are not usually mobile. The lower age limit of 15 was selected because it was also assumed that there was no household head under the age of 15.

The actual sampling unit in the survey was the migrant household head who had moved into one of three urban centers during 1961–1970. The final sample was obtained in the following fashion: "dongs"[2] were selected in a purposive way based on the information given by city officials who were quite familiar with the urban centers involved. The "dongs" with the highest concentration of urban migrants were selected. Secondly, "pans"[3] were chosen at random from the "dongs" selected.

Once "pans" had been selected randomly the final sample was picked at random from the "Resident Lists." A random sample of 340 migrant households were obtained from three urban centers, 220 sample migrants households in Chonju, 60 in Kunsan and another 60 in Iri.

The proportion of completed questionnaires to selected total sample members was higher than 95 percent. The total number of migrant households personally interviewed was 325, and the total number of completely usable questionnaires was 303; 22 finished questionnaries had to be rejected since the information provided was incomplete and/or falsified.

Prior to the main survey, twelve randomly selected sample migrants in Chonju were interviewed as pilot cases for pretesting. The questionnaire finally used was corrected and adapted in the light of findings discovered through the pilot survey. Six well-trained senior students of Chonbuk National University were employed for the survey and trained by the author. The author acted as supervisor and also directly participated in the survey.

The main survey was carried out during the three months of October through December 1972. All the questionnaires completed by the six enumerators were checked each day immediately after the enumerators returned from the field, in order to eliminate any

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[2] "dong" is the smallest administrative district in a "shi." Each "dong" has its own "Residents List" which contains much useful information about residents such as family status, past addresses and present address of the residents.

[3] "pan" is a sub-division of "dong."

possible falsification or mistake as soon as possible. Whenever any mistakes or errors were found, the responsible enumerators were asked to recheck immediately the next day.

The main topics covered in the questionnaire were: migrant's profile, migration history, migrant's job and income history, reasons for leaving the rural home and selecting a particular urban center, migrant's expectation, migrant's future plan and unemployed migrants.

2) Collection of Published Data

Various statistics, records and publications which were relevant to this study were collected from many official and private sources. Chief sources were local and national government offices, research institutes, and universities. In carrying out this study, the statistical yearbooks of province(do), city (shi) and county (kun) governments were the major sources of published data.

The empipical analysis was based primarily on the survey responses of 303 sample migrants. The nature of the questionnaire used in the survey made possible two complementary analytical approaches to the subject. One approach was in the form of a multiple regression analysis based on the migration data and the migrant's income history as provided in the questionnaire and on the statistics for population, migration, distance between origin and destination, and amenities and educational facilities provided in the published data. Another approach was a descriptive analysis of the responses given by the sample migrants interviewed in the field survey.

These two approaches did not provide exactly the same results in all cases, but in most instances there was consistency between them. Some major findings which emerged from this study are briefly summarized below.

II. Demographic and Socio-economic Characteristics of Migrants

1. Age

About 68 percent of the sample migrant household heads were between the age of thirty and fourty-four at the time of survey, but at the time of their arrival in the cities their age level would have been lower. The average age level of the sample migrants was forty at the time of survey, while it was thirty-five at the time of migration. The average age levels of the sample migrants was a little high because they were mostly head-of-households who had their own families. Since there was neither a survey of nonmigrant household heads nor information available from secondary sources, no comparison between the average age of the migrant household heads and the average age of nonmigrant household heads could

be made. However, many studies have reached the conclusion that younger people tend to migrate more than older people.(5)

2. Education

There was evidence of a direct relationship between the migrant's education and his propensity to migrate to an urban center. Forty-seven percent of the sample migrants had completed more than middle school and an additional 38 percent had elementary school education. Only 15 percent had no formal education at all. A comparison could have been made, between educational levels of migrants and non-migrants, if a survey of nonmigrant household heads had been carried out or secondary sources of information were available.

3. Family Size

There is a shaky indication of a relationship between the size of a migrant's family and the propensity to migrate to an urban center. The camparison between the mean values of the family size of the sample migrant households and all households in the province has shown that the mean value of the former was smaller(five) than that of the latter (six). This may indicate a tendency for the samller households to migrate more readily than larger ones.

4. Land Ownership

Forty percent of the sample migrants did not have their own farm land and another 40 percent had less than 1.0 chongbo (2.47 acres) before migration. It is most likely that the majority of these migrants were either poor marginal farmers or hired farm laborers and that either the lack of or shortage of farm land per household may have been a strong force tending to push them out of rural areas.

Some migrants (27.4 percent) retained their farm land in rural areas even after migration. These migrants may be considered as absentee farmers, some of whom could not make a living from urban employment after migration.

5. Housing Condition

It is interesting to compare the migrant's housing conditions before migration with those after migration. Prior to migration, most of the sample migrants (68.3 percent) had their own houses even though they were poorly built in many instances. After migration, however, about the same percentage (62 percent) resided in rented houses. These migrants to urban complexes seem to form the group living in poor urban squatter or rented houses

and these contribute to the serious problem of urban housing shortage.

6. Migration Origins

The major portion of the sample migrants came from the rural "kuns" surrounding three urban centers. These rural "kuns" are Wanju, Okku, Iksan and Imsil. Chonju drew most of its in-migrants from Wanju-kun and Imsil-kun whereas Kunsan absorbed most of its in-migrants from Okku-kun and Iri pulled its in-migrants mostly from Iksan-kun. There is an indication of a positive relationship between size of the urban center and the distance covered in a rural-urban migration. The larger the size of the urban center the greater was the distance covered in the migration flow. This may be because the larger urban center might look much better and more attractive to potential migrants in remote areas.

7. Job Training

The majority of the sample migrants had no special job training prior to or even after migration. Only 18 percent of them had special job training in progress or completed. The most common kinds of training consisted of relatively easy techniques to learn such as those of a driver, carpenter, craftsman, barber or laundryman. However, compulsory military service for young adults provided a mechanism for introducing them not only to urban life but also to special technical training which was often of direct help in finding an urban job or at least an indirect motivation to out-migrate from their unattractive rural homes.

8. Jobs

After migration, the job distribution of the migrants changed significantly. The number of farmers decreased tremendously and in contrast, the number of nonfarm day-laborers greatly increased. After arrival in the urban center, those who were farmers or farm-laborers prior to migration poured into the urban day-laborer group or took up small sales activities which the rural migrants lacking education and skills could easily do. The percentage of totally unemployed people decreased by 34 percent after migration.

There was some indication of a "two stage phenomenon" in the changing job distribution pattern of the rural-urban migrants. That is, migrants first moved from rural traditional sector jobs (farmer or farm laborer) into urban traditional sector jobs (day-laborer, small retailer or peddler) and then finally into the modern sector jobs (a permanent type of employment after a period of living experience in urban areas). Thus upon entering the urban labor market, rural migrants tended either to become totally unemployed or seek temporary and casual type of employment in the urban traditional

sector until they settled down to what they hoped would be permanent jobs.[6]

9. Income

A striking fact found with reference to the question of the migrant's income at the time of inverview was that more than two-thirds of the sample migrants were earning a monthly income of less than the national average for all workers in 1972.[7] There is an indication that the income levels of the migrants were lower than for urban people because of the migrants were less educated and less skilled compared to urban people and were mostly engaged in low-paying jobs.

10. Mobility

Findings concerning the migrant's willingness for permanent residency in the urban destinations show evidence that the vast majority of the migrants were neither temporary migrants nor dominated by mobile people who frequently circulated between rural and urban areas. The majority of the sample migrants did not have any experience of moving before their last migration since the Military Revolution of 1961. Almost 73 percent of the migrants interviewed had moved into the city during the last five years of the 1960's.

There was no important reverse flow of migration from urban to rural areas. Once the migrants had settled down in a certain place they did not move as long as they could maintain a minimum standard of living in the new location. They realized that moving is costly, not only economically but also psychologically. Sometimes it is a matter of saving face; even a person who has not succeeded in an urban destination is unlikely to go back to his home village again.[8]

III. Formulation of a Theoretical Framework for Rural-Urban Migratory Behavior

A theoretical framework for rural-urban migration will be built especially by utilizing the expected income concept developed by Todaro,[9] as an important economic factor influencing migration, together with some non-economic factors.

In constructing a theoretical framework for rural-urban migration, the primary emphasis will be placed on those explanatory variables which are logically expected to have a significant influence upon the rate of migration and which are distinctly economic in character; secondarily, the model will be expanded by including some non-economic variables.

To identify the economic determinants of migratory behavior, it is hypothesized that:

$$M_{ij}(t) = f[V_i(t), V_j(t), D_{ij}(t)] \tag{2.1}$$

where "M_{ij}" is a measure of the number of people who move from a rural region, "i"
to an urban center "j" during the "t" time period;

"V_j" is the present value at time "t" of an urban expected real income stream over
some relevant time horizon;

"V_i" is the present value at time "t" of a rural expected real income stream over
the relevant time horizon; and

"D_{ij}" is the cost of moving from "i" to "j", which includes foregone income and
the living cost as well as the actual cash outlay for moving.

It is necessary to examine carefully the manner in which the expected income streams
are defined. As mentioned above, Todaro defined the migrant's expected income from
employment in the urban center "j" as a function of both the prevailing income in that
urban center and the probability of being employed there. Similarly, the migrant's
expected income in a specific rural area "i" can be expressed in terms of the average
income in the rural area "i" and the probability of realizing this income.

A potential individual migrant would compare his expected income from employment
in the urban center "j" with his expected income in the rural area "i," where "i" is the
rural area in which he lives. He would then compare his urban-rural expected income
differential $(V_j - V_i)$ with the moving costs from the point of origin "i" to the point of
destination "j".

The potential migrant will move from "i" to "j" if $V_j - V_i > D_{ij}$, assuming that in-
come maximization is the only criterion for the decision to move. The difference between
two expected income variables $(V_j - V_i)$ should be larger than the cost of moving (D_{ij})
to constitute a "pull" force inducing the rural migrants to move from "i" to the urban
center "j". If there are more than one alternative urban center, the urban center which
has been the most powerful "pull" force will be selected by the migrants as their de-
stination.

Now, suppose that there is more than one urban migration destination and more than
one rural origin.④ We should introduce an additional economic variable to make possible
an explanation of variations in the migration flows among the many rural-urban com-
binations.

The expected income in a rural area can be added as an additional distinct explanatory

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④ This study includes 13 rural origins of migration ("kun") and three urban destinations of migration
("shi") within the province of North Cholla.

variable which is a measure of the respective "push" forces from each rural area.

As a result of these separate specifications of the "push" and "pull" forces in migratory behavior, the equation (3.1) can be rewritten as follows:

$$M_{ij}(t) = f[V_j(t) - V_i(t), V_i(t), D_{ij}(t)] \qquad (3.2)$$

This general form of the model of strict expected income maximization explains only the economic aspect of migratory behavior, but it does not explain the possible role of non-economic forces which could be important determinants of migration.

Discriminatory hiring practices may result from the heterogeneous quality of labor in any given stock of unemployed in the urban center due, for example, to the different level of educational attainment, personal experience, individual skills and even job training the migrant might have had. In other words, at least some preferential treatment will be given to the migrants who have better education and suitable experience for a given available job.

This kind of discriminatory treatment may result in variations in the expected income streams in urban center "j", (V_j). In turn the variations in "V_j" will cause variations in "$V_j - V_i$," the pull forces. Accordingly, variations in migration flows between many rural-urban combinations would occur due to this discriminatory treatment.

The decision of potential migrants of whether or not to move from his rural home will be influenced by the discriminatory treatment; the migrants with better (worse) educational background may be more (less) likely to move because of their perceived expected income in the urban center "j", "V_j" will be much higher (lower) due to the higher (lower) probability of being employed.

The quantity and accuracy of information available in each rural area on income, job opportunities, and cost of living in each of the urban centers may also influence migrating behavior. The variations in perception of expected income due to the different quantity and quality of information available in each rural area may influence the migrant's decision on whether or not to move and his selection of a particular urban center, as well. Therefore, with regard to the information variable in our general model of rural-urban migration, we may postulate that the quantity and quality of information which the potential migrants have in each rural area will be determined by the number and destination of previous migrants from each rural area.

Given economic incentives for migration, various amenities available in rural and urban areas, such as the different standards of educational, health and sanitary facilities, public utilities (piped water, electricity, gas, sewage), housing, physical environment and

general living conditions, may also be important non-economic explanatory factors inducing potential migrants to move and determinants of the particular migration destination selected.

Thus, in our general framework we may hypothesize that the difference or ratio between amenities available in urban center "j" and in rural area "i" can be seen as either a "pull" of urban amenities or a "push" of rural amenities depending on the relative magnitudes of these two forces. As in the case of the expected income variable, a potential migrant would compare the amenity available in "j" to the amenity available in "i" for the purpose of his decision to move or not to move and in selection of possible destination of migration.

Population density in both rural origin and urban destination may affect migration, too. Density in migration origin may serve as a "push" factor due to the pressure of population. On the other hand, density in the migration destination, which might be partly a result of earlier migration, may contribute as a "pull" factor, since previous migrants may attract new migrants by giving more information and even assurance of help. This might cause a snowball effect in migration.

There are some other variables which may be conceptually relevant as an explanation of migratory behavior such as concentration of government development programs in an urban center, low agricultural price policy, development of communication and transportation, natural catastrophe, etc.

These variables are not included in this general framework of rural-urban migratory behavior simply because of the practical problem of empirical measurement.

The unique aspect of this model is the consideration of the probability of securing an urban job in the specification of the expected income variables.

The costs of migration are largely non-economic and difficult to measure. In this framework, the distance involved is hypothesized to account for costs of migration based on the reasoning that distance is a variable that may represent more than mere economic costs and thus measures more than the economic costs of migration.

Incorporating some of these additional hypotheses concerning non-economic variables into our general model of migration, the following final relationship is constructed:

$$M_{ij}(t) = f[V_j(t) - V_i(t), V_i(t), D_{ij}(t), E(t), C_{ij}(t), A_j(t) - A_i(t), A_i(t)] \quad (3.3)$$

where "E" is a measure of the quality of labor available for employment;

"A_j" is a measure of amenity availability in urban center "j";

"A_i" is a measure of amenity availability in rural area "i"; and

"C" is a measure of information contact from "j" available in "i".

IV. Major Forces Causing Rural-Urban Migration

The empirical results of the regression analysis based on the migration model will be presented and the survey responses on the motivations for leaving the rural home and selecting a specific urban center will be described.

1. Regression Model of Migration

In order to quantitatively analyze and explain the hypothesized functional relationship between the variables involved in the theoretical migration model in a comprehensive manner and to test their reliability, we need to clearly specify the underlying variables to be included or excluded and the functional relationships between them in such a way as to make the model operational. The model must be not only logically sound but also computationally feasible for empirical measurement. The inclusion of the relevant variables should be based on the data available. For example, the magnitude of migration can be related to a number of economic variables as well as many non-economic variables. However, it is very difficult to estimate the funtctioal relationships among all possible variables due to the limitation of empirical measurement and data available. Thus, in most cases only a limited number of variables can be included and partial relationships can be estimated based on the data available and under the basic assumptions of the model.

A theoretical model of rural-urban migration identifies the various relevant factors affecting an individual's decision to either migrate to an urban center or to remain in a rural area.

In order to specify the precise functional interaction between the relevant factors in the model, it was postulated that the residents of a given educational level in rural area "i"[5], with a given rural expected income and rural amenities, collect certain information from various urban centers with regard to the income in each of these possible urban destinations. Based on the information they have collected, as modified by other economic and social considerations, a certain percentage of the residents of a given educational level in a rural area "i" may decide to move to an urban center "j"[6].

If we assume the functional relationship between these variables to be linear given a level of educatonal attainment of the potential migrants at time "t" the hypothesized relationships may be expressed as:

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[5] "i" denotes one of the 13 rural counties in North Cholla Province.
[6] "j" denotes one of the 3 cities in North Cholla Province.

$$M_{ij}(t) = b_o + b_1[V_j(t) - V_i(t)] + b_2 V_i(t) + b_3 D_{ij} + b_4 \frac{A_j}{A_i} + b_5 N_j + u$$

where: M_{ij} denotes the percentage of the residents in the rural area "i" who migrated to urban center "j"

V_i represents the urban expected income of the potential migrants;

V_i represents the rural expected income of the potential migrants;

D_{ij} denotes the cost of moving expressed by the distance between rural area "i" and urban center "j"

A_i is the measure of amenity availability in rural area "i";

A_j is the measure of amenity availability in urban center "j";

N_j is the size of the population in the urban center "j"; and

u is the random disturbance term.

A limitation faced in the regression analysis was that the number of observations available was not adequate to enable the use of either time-series or cross-section approach alone in the analysis. Instead, a combination of both time-series and cross-sectional data was used in order to increase the number of observations for time-series data and the four regions of cross-sectional data.

Estimated regression equations of different functional forms demonstrating the regression coefficients, student-values (in the parenthese underneath the respective regression coefficients), the coefficients of determinant R^2, F-statistics and degrees of freedom are presented in the following. In the first set of four regression equations, the average incomes were discounted by the quarterly rate of interest which is approximately 4 percent per quarter, and the "N_j" variable was entered as a population density in "j". In the second set of four regression equations, the average incomes were discounted also by the quarterly rate of interest but the "N_j" variable was expressed as the total number in the population 15–54 years of age in "j". In the third set of regression equations, the average income were discounted by the yearly rate of interest which is approximately 15 percent per annum, and the "N" variable was entered as the total number in the population 15–54 years of age in "j".

In the migration model it was hypothesized that the flow of rural-urban migration is positively related with the expected urban income alone or the difference between expected urban income and expected rural income, the ratio of an urban amenity index to a rural amenity index, and the urban population density. On the other hand, an inverse relationship was haypothesized between migration flows and the expected rural income, and the distance between origin region and urban destination which represents the cost of migration.

In summary, the regression results show that the data available do not provide consistent evidence of the importance of rural-urban expected income differentials. However, the data provided a basis for concluding that the distance involed in a move represents a distinct direct deterrent to rural-urban migration, and furthermore, that the difference in amenity avilability between rural areas and urban centers, as well as the urban population density, appear to be major determinants of rural-urban migration.

Regression Equations I.

1) $M_{ij} = -100.37749 + 0.00008V_j - 0.00009V_i - 0.15416D_{ij} + 0.476N_j + 82.79196\frac{A_j}{A_i}$

$t:$ (0.21797) (−0.20599) (−0.34197) (1.13222) (0.77148)

$R^2 = 0.2600, \quad F = 1.5463, \quad d.f. = 22$

2) $M_{ij} = -103.45270 + 4.68150\frac{V_j}{V_i} - 0.16724D_{ij} + 0.04700N_j + 84.76578\frac{A_j}{A_i}$

$t:$ (0.43492) (− 0.38153) (1.17342) (0.84771)

$R^2 = 0.2639, \quad F = 2.0617, \quad d.f. = 23$

3) $M_{ij} = -93.98288 + 6.48161\ ln\frac{V_j}{V_i} - 0.15610D_{ij} + 0.04520N_j + 85.89584\frac{A_j}{A_i}$

$t:$ (0.56290) (− 0.36192) (1.63449) (0.86985)

$R^2 = 0.2680, \quad F = 2.1047, \quad d.f. = 23$

4) $M_{ij} = -94.37198 + 6.52887lnA_j - 6.44565lnA_i - 0.15580D_{ij} - 0.04503N_j + 85.96890\frac{A_j}{A_i}$

$t:$ (0.43746) (−0.50502) (−0.53097) (1.08906) (0.84268)

$R^2 = 0.2679, \quad F = 1.6104, \quad d.f. = 22$

Regression Equation II

1) $M_{ij} = -82.27054 + 0.00014V_i - 0.00006V_j - 0.16394D_{ij} + 0.00029N_j + 91.70209\frac{A_j}{A_i}$

$t:$ (0.37408) (−0.14816) (−0.36270) (1.04814) (0,86842)

$R^2 = 0.2542, \quad F = 1.5463, \quad d.f. = 22$

2) $M_{ij} = -96.88077 + 4.86359\frac{V_j}{V_i} - 0.17609D_{ij} + 0.00032N_j + 90.06882\frac{A_j}{A_i}$

$t:$ (0.44797) (− 0.39974) (1.62968) (0.89985)

$R^2 = 0.2559, \quad F = 1.9774, \quad d.f. = 23$

3) $M_{ji} = -87.10231 + 6.71880ln\frac{V_j}{V_i} - 0.16439D_{ji} + 0.00031N_j + 91.17221\frac{A_j}{A_i}$

$t:$ (0.92270) (− 0.37935) (1.5263) (0.92270)

$R^2 = 0.2602, \quad F = 2.0220, \quad d.f. = 23$

4) $M_{ij} = -99.67500 + 8.27328lnV_j - 5.79007lnV_i - 0.15410D_{ij} - 0.00027N_{ij} + 92.86447\frac{A_j}{A_i}$

$t:$ (0.57184) (−0.45142) (−0.34544) (0.98939) (0.91622)

$$R^2 = 0.2163, \quad F = 1.5567, \quad d.f. = 22$$

Regression Equation III

1) $M_{ij} = -99.28615 + 0.00016V_j - 0.00022V_i - 0.17052D_{ij} + 0.00034N_j + 86.96552\dfrac{A_j}{A_i}$

$\quad\quad t:\quad (0.33849)\quad (0.43441)\quad (-0.38122)\quad (1.15320)\quad (0.82669)$

$\quad\quad R^2 = 0.2655, \quad F = 1.5902, \quad d.f. = 22$

2) $M_{ij} = -102.72934 + 6.50035\dfrac{V_j}{V_i} - 0.18994D_{ij} + 88.12627\dfrac{A_j}{A_i} + 0.00033N_j$

$\quad\quad t:\quad (0.80295)\quad (-0.43926)\quad (0.90585)\quad (1.77600)$

$\quad\quad R^2 = 0.2779, \quad F = 2.2133, \quad d.f. = 23$

3) $M_{ji} = -91.02110 + 8.47117ln\dfrac{V_j}{V_i} - 0.17829D_{ij} + 89.36858\dfrac{A_j}{A_i} + 0.00032N_j$

$\quad\quad t:\quad (0.80321)\quad (-0.41448)\quad (0.91575)\quad (1.65752)$

$\quad\quad R^2 = 0.2780, \quad F = 2.2134, \quad d.f. = 23$

4) $M_{ji} = -88.12749 + 7.95868lnV_j - 8.66016lnV_j - 0.18002D_{ji} + 88.59036\dfrac{A_j}{A_i} + 0.0033N_j$

$\quad\quad t:\quad (0.54112)\quad (-0.75760)\quad (-0.40799)\quad (0.87797)\quad (1.12254)$

$\quad\quad R^2 = 0.2780, \quad F = 1.6945, \quad d.f. = 22$

2. Determinants of Migratory Behavior

1) The measurement of "pull force" in the form of urban expected income (V_j) alone, or the difference between urban expected income (V_j) and rural expected income (V_i) in the regression analysis did not provide conclusive evidence of these economic variables pulling rural people into the urban center. The survey responses to the question of why the migrants had selected a particular urban center as their migration destination showed a consistent implication of this result, since only a small portion of the sample migrants indicated the distinct importance of a "better job opportunity" in the urban center as the major reason. On the other hand, the vast majority of the sample migrants indicated that they were very confident that they would secure an urban job of some sort which they belived would be better than their rural job if they moved to the urban center.

2) The measurement of "push force" in the form of rural expected income (V_i) also did not provide firm evidence for concluding that the migrants were pushed out by the economic force from their rural areas. Nevertheless, the survey responses to the question as to why the migrants had left their rural homes indicated that a majority had left for economic reason such as lack of job opportunity, unsatisfactory earnings or shortage of farm land in the rural area. However, the signs of the regression coefficients for the expected income variables may imply that the higher the urban expected income the more people will be pulled to the urban center (positive sign of "V_j"), and the lower the rural expected

income the greater will be the number of people pushed out from rural areas (negative sign of "V_i") and vice versa.

3) The remaining economic variable was the cost of moving. It was measured by the distance between the point of migration origin and the point of migration destination. The regression result obtained did not indicate that distance (D_{ij}) was significant as an explanatory variable. However, closer distance from rural home to the urban center was quoted most frequently by the respondents as the leading reason for selecting the specific urban center (33.3 percent). The survey results appear to be consistent with the negative sign of the regression coefficient of the distance variable which implies that distance is inversely related to the migration flow. In other words, distance is an important deterrent to migration.

4) The amenity variable appeared to have the most bearing on migration decisions. In this regression model the amenity variable was defined as the capacity per class-room of middle and high school level available in rural areas and urban centers. The regression result confirmed the anticipated relationship between migration flow and the amenity variable that amenity availability is an important determinant of flow of migration. The survey response to the related question also indicated the importance of this variable. Quite a number of sample migrants indicated that they migrated because of poor schools for their children in the rural area (or better schools in the urban center).

5) Along with the evidence that amenities determined migration flow, there was strong evidence that the urban population density (N_j) attracted rural people. The regression estimates showed that population density in urban centers was positively related to the flow of rural-urban migration. In other words, the larger the population an urban center has the more people will be pulled to this urban center. Clearly it is host of other factors which tends to accompany population density which provides the real pulling attraction. More rapid growth of the larger city (Chonju) as opposed to the smaller cities in North Cholla province, and furthermore, the explosive growth of the Seoul population are clear indications of this relationship between migration flow and urban population density.

6) Finally, the survey results provided an indication that the accuracy and quantity of information about employment, income and living conditions in urban centers collected by a potential migrant from different sources helped to determine the migrant's decision-making for moving as well as for selecting a particular urban center. The most important sources of information were relatives living in the destination city and the migrants' own frequent trips to the city.

V. Policy Implications

The findings in this study imply that rural-urban migration will tend to increase unless explicit policies to discourage the flow of rural-urban migration are taken. For example, one of the most important determinants of migration is the rapidly growing urban population due to migration which, in turn, will further induce additional migration. Parents' great concern about future advanced education of their childern along with the concentration of better higher educational institutions in the urban centers will accelerate the rural-urban migration. Parents' strong intention to provide their children better education will lead them to send their children to urban schools to secure a better future job for their children in cities. Once rural children are well-educated and settled down with a permanent job in an urban area, they will induce not only their parents but also their brothers and sisters to migrate to the urban centers, thus further increasing rural-urban migration.

A recently improved transportation system including the development of highways and improvments of local roads and bus-lines will stimulate rural people to make more frequent trips to the city and then finally to migrate into the city. Relative to this it may be recalled that the closer distance from rural home to urban center was the dominant reason for selecting a particular urban center (33.3 percent), and that frequent trips to the city was the important information sourse for the migrants (32.2 percent).

Lack of job opportunity and seasonal unemployment in rural areas will continually push rural people from rural to urban areas.

As pointed out previously, rapid rural-urban migration is considered to be undesirable. Therefore, how can rural-urban migration be discouraged? The problem has short, intermediate and long run dimensions and there is a wide range of possible policies. It is, however, beyond the scope of this study to examine all of them. But some of the relevant remedial approaches which might be adopted to relieve the problems will be briefly indicated.

The first approach would be to reduce the rural-urban income differential. One way to increase rural real income would be the creation of new jobs or an increase in the number of job opportunities in rural areas. To generate new employment or to increase the number of job opportunities in the rural areas implies some form of agricultural and rural development programs such as various cooperative schemes, labor-intensive small scale industries, training schemes and off-season rural public work as well as the location of business activities and agrindus activities in rural areas so as to spread non-agricultural employment opportunities.

Among these suggestions, the off-season labor intensive public work program would very likely reduce rural urban income disparities in direct ways:

a) individuals could be employed on such projects during non-peak periods in agriculture. They would thus sacrifice less agricultural income in accepting employment of this sort rather than migrating to urban areas;

b) the effect of the roads, irrigation schemes, dams, etc., built through such programs would be to raise agricultural productivity, thus further reducing the real income differential. Seasonal unemployment or underemployment is high in rural areas because of the seasonal nature of agricultural operations in Korea. For example, the agricultural labor demand during the off-season in Korea in recent years amounted to some 40 percent of the peak demand(measured in terms of hours of work).[10] Thus, the policies of seasonal utilization of the idle labor force would be relevant, in particular, to the rural areas where chronic labor shortage problems in peak-seasons exist.

A second alternative would be to provide needed amenities such as improvment of existing school quality and higher educational institutions in rural communities to induce rural children and parents not to migrate to cities but to stay in a rural area. Electricity, pipewater, clinics, and various recreation centers such as swimming pool and playground in rural areas would reduce the relative attraction of urban centers. Perhaps the most significant policy implications emerging from this study is the great difficulty of substantially reducing the size of rural-urban migration without a concentrated effort at making rural life more attractive. For exmple, instead of allocating scarce capital funds to urban low cost housing projects which would induce further migration, the Korean government might do better if it devoted these funds to the improvement of rural amenities. The net benefit of devoting these funds to the improvment of rural communities might greatly exceed whatever net benefit might be derived from luring more rural people to the city by increasing the attractiveness of urban living conditions.

A third alternative would be some form of "regulatory policy" such as subsidies or tax concessions not only to industry but also to individual persons in rural areas. On the other hand, there would be an increase of tax rates, or imposition of new tax to those in urban centers. For instance, a disproportionately high tax on urban wages could serve as a disincentive to further rural-urban migiation in the same way as an actual reduction in money wages. Moreover, if the revenue generated from such taxes were to be redirected toward the rural sector in the form of rural development projects, then it could be a powerful mechanism for removing some of the distortions between urban and rural economic opportunities.

Finally, the requirement that most government expenditures and administrative deci-

sions be centrally approved, usually at the central or provincial office level, may tend to continue the present centralization in government policy making. A conscious decentralization of the government adminstrative power would emphasize local and rural control of spending where knowledge of local and rural conditions is likely to be better than the knowledge at the central or provincial offices.

These policy recommendations are intended to reduce the current level of rapid rural-urban migration rather than to completely eliminate or reverse the process. Despite these remedial policies to discourage the rural-urban migration, there will be substantial numbers of rural people who will migrate no matter what the government does in rural areas and will contribute to various problems in the subsistence sector within the urban society. What, then, can be done for these urban migrants? Some possible overall measures to assist these rural-urban migrants might include the following:

1) training or retraining program for rural migrants as skilled industrial workers;
2) public vocational training courses specifically designed for the unemployed and underemployed following entry into the urban center;
3) establishment of a "labor exchange pool" to facilitate a better adjustment of the migrants after migration;
4) a program to improve assimilation in the receiving communities through the use of guidance councils, reception centers and training schools to reduce feelings of insecurity, dissatisfaction and discrimination;
5) establishment of a specialized institution responsible for implementing the above measures.

Clearly, what is needed, if any real impact is to be made on the problem of heavy rural-urban migration, is not a single policy but a "package" of policies including those which have more immediate effects as well as those which will be felt in the longer run. Without such a package of policies, the problem of a rapidly growing urban population in Korea promises to become economically more severe and socially more burdensome in coming years.

韓國의 農村 一都市間 移動行爲에 影響을 미치는 經濟的 要素와 非經濟的 要素

金　　世　　烈

要　約

本硏究는 韓國의 農村都市間 勞動力 移動의 經濟的 및 社會的 要因을 全羅北道의 事例를 中心으로 調査分析한 結果이다.

本硏究의 主要目的은 첫째 道內農村地域에서 都心地로 이미 轉入하여 居住하고 있는 移住民들에게 對한 社會·經濟的 特性을 調査하고, 둘째 移住民들의 移動行爲를 左右하는 經濟的 및 社會的 要因을 規明하는데 두었다.

調査對象은 1961年부터 1970年까지 10年間에 道內農村地域에서 3個都市, 全州, 裡里, 群山 어느 한 都市에 移入하여 調査當時인 1972年 12月現在 그 都市에 居住하고 있는 移住者中에서 抽出된 世帶主 340名을 標本으로 하였다. 調査方法은 미리 作成된 質問書에 依한 現地設問調査를 實施하였으며, 其他 關聯文獻 및 統計資料도 아울러 蒐集利用하였다. 現地調査에 使用된 質問書內容은 두가지의 相互補完的인 分析方法을 可能케 하였는데, 첫째는 移住者의 特性에 關한 調査結果의 序述的 分析方法이요, 둘째로 移動行爲의 主要決定要因을 規明하기 爲한 複合回歸分析方法인데 回歸方程式의 從屬變數로는 移動率(轉出率)을 使用하고 獨立變數로는 農村都市間의 期待所得의 隔差, 移出地와 移入地間의 移動距離, 福祉施設, 都市人口密度 等을 選擇하였다.

移住者의 人口學的및 社會·經濟的 特性으로써는 年齡構造, 敎育水準, 家族數, 土地所有關係, 住宅, 移動의 흐름, 職業의 變遷狀況, 職業訓練有無, 所得水準 및 移住者의 將來計劃等을 調査分析하였다.

移住者의 移動行爲를 決定하는 經濟的 및 社會的 要因에 關한 回歸分析結果는 設問書에 나온 關聯質問 即 "故鄕(農村)을 떠나게된 理由"와 "特定한 都市를 移入地로 選擇한 理由" 等에 對한 應答과의 比較分析을 示圖하였다.

分析內容中 主要點만 간추려 보면 都市에 있어서의 보다 좋은 敎育施設(特히 子女敎育을 爲한)이나 福祉施設 및 增加一路의 都市人口密度等과 같은 같은 社會的要因(非經濟的變數)이 期待所得隔差나 移動費用과 같은 經濟的要因보다 移住民의 移動決定에 對하여 더욱 큰 영향을 끼친것으로 나타났다. 都市에서의 就業機會, 賃金水準, 生活條件等 都市事情에 關한 重要한 情報蒐集手段으로써 "이미 都市에 轉入하여 居住하고 있는 親戚이나 親知", 또는

"頻繁한 都市往來"가 潛在的移出者에게 자극을 준듯하다.

落後農村地域으로부터의 農村人의 集團的 移出問題와 이로因해 招來되는 過大都市化나 都市貧村의 形成問題等도 다뤘으며 이에 對處한 아래와 같은 몇가지의 可能한 治癒方法도 提示하였다.

農村地域의 새로운 雇傭創造나 就業機會의 增大 等을 爲하여 集中的인 農村 및 農業開發事業의 推進과 더불어 其他産業活動 및 諸事業活動의 都市로부터의 分散을 爲한 政策이 必要하며, 農村地域社會에 旣存 各級學校數와 그리고 質的인 向上 및 高等敎育機關과 같은 必要한 福祉施設의 擴張은 農村住民들의 都市에로의 流出을 豫防시키는데 큰 도움이 될 것으로 判斷되며 나아가서는 보다 積極的인 方法으로 一種의 規制政策手段도 들 수 이는바 政府의 補助 및 租稅減免政策等도 매우 效果的인 方法으로 考慮될 수 있겠다.

그러나 이러한 多樣的 政策手段도 個別的으로 使用하는것 보다는 複合的인 接近方法을 擇하는 것이 離農 및 人口의 都市集中이 빚는 副作用 같은 問題解決에 보다 能率的일 것으로 思料된다.

References

(1) Economic Planning Board, *Statistical Handbook of Korea,* 1972

(2) Norton, Roger D., "Formal Approaches to Regional Planning in Korea," especially "Appendix B: Migration Model" of the paper presented at the Conference on Korean Planning, Northwestern University, Illinois, 1968. Published in *Practical Approaches to Development— Korea's Second Five-Year Plan,* Irma Adelman, ed, Baltimore: Johns Hopkins, 1969.

(3) Fei, John C. H. and Gustav Ranis, *Development of the Labor Surplus Economy : Theory and Policy.* Homewood, Illinois, Richardson D. Irwin, Inc., 1967.

(4) Park, Jin-Hwan, "The Growth of Taegu and Its Effects on RegionalAgricultural Development," *A City in Transition:* Urbanization in Taegu, ed. Lee, Man-Gap and Herbert R. Barringer, Seoul, 1971.

(5) Adams, Dale W., "Rural Migration and Agricultural Development in Columbia, "*Economic Development and Cultural Change,* Vol. 17, No. 4, July 1969.

(6) Todaro, Michael P., "A Model of Labor Migration and Urban Unemployment in Less Developed Countries," *American Economic Review,* March, 1969.

(7) Office of Labor, *Wage Survey Report,* Seoul, Korea, 1971.

(8) Mitchell, J. Clyde, "Urbanization, Detribalization and Stabilization in South Africa: A Problem of Definition and Measurement," Report of the International African Institute, London, UNESCO, 1956.

(9) Todaro, Michael P., "The Urban Employment Problem in Less Developed Countries: An Analysis of Demand and Supply," *Yale Economic Essays,* Vol. 8, No. 2, October, 1970.

(10) Kim, Kwan S., "Labor Force Structure in a Dual Economy: A Case Study of South Korea," *International Labor Review.* Vol. 101, No. 1, January, 1970.