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Migration and Fertility in Korea*

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Ⅰ. Introduction

Two remarkable features of demographic development in South Korea in recent years have been rapid urbanization and declining fertility rate. Like other developing countries, Republic of Korea witnessed rapidly increasing rate of population growth after the World War II as her mortality rate declined while her birth rate remained stable. (See Table 1-1 and 1-2) The intercensal growth rate of population reached the peak at 2.7 per cent per annum during the five-year period after the Korean War between 1955 and 1960. The latest census of 1970 shows that the recent rate of population growth in Republic of Korea has been 2.1 per cent per annum. The Government of Republic of Korea has set a goal of reducing the annual growth rate of population to 1.3 per cent by 1981 as an integral part of its Fourth Five-Year Plan (1977~1981) of reaching $ 1,000 per capita GNP.

Republic of Korea government and other agencies, domestic and international, launched active campaign to reduce the birth rate in early 1960's. According to estimates by LeeJay Cho based on censuses, crude birth rate declined from 42.9 per 1,000 population in 1960 to 29.0 per 1,000 in 1970. 1970 birth rate is, thus, about 67.6 per cent of 1960 birth rate. (See Table 1-2)

Censuses taken since 1955 show that population of metropolitan areas--Seoul and Busan, increased by about 224 per cent between 1955 and 1970. (See Table 1-3) There is also considerable movement into other cities (Shi's) recording about 92 per cent increase in population of shi's between 1955 and 1970. Whereas the rate of migration into metropolitan areas accelerated, however, that into Shi's declined in recent years. The most recent intercensal increase in population between 1966 and 1970 was about 7 per cent for Shi's compared with that of about 63 per cent for metropolitan areas. The results of rural-urban migration of such magnitude is that rural population of Korea in 1970 is a bare majority of about 57 per cent contrasted with the fact that over 75 per cent of people lived in rural areas in 1955. Graphic demonstation

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of rural-urban migration into Seoul and Busan is given in Figures 1-1 and 1-2. In terms of net migration, Seoul gained population from every province and Busan. Busan also gained population from all provinces except Seoul and its surrounding province Gyeonggi.

Table 1-1. Population and Intercensal Growth Rates: All Korea, 1925~1944, and Republic of Korea, 1945~1970

	Population	Intercensal growth rate (per cent)
All Korea		
1925 (October 1)	19,020,030	1.4
1930 (October 1)	20,438,108	1.7
1935 (October 1)	22,208,102	1.2
1940 (October 1)	23,547,465	1.4
1944 (May 1)	25,120,174	—
Republic of Korea		
1949 (May 1)	20,166,756	1.2
1955 (September 1)	21,502,386	2.7[a]
1960 (December 1)	24,954,290	2.5[a]
1966 (October 1)	29,159,640	1.2[a]
1970 (October 1)	31,438,768	—

a) Preliminary estimates by Lee-Jay Cho (Source; Republic of Korea, Economic Planning Board 1971:37, Table 10). "Korean Population: Recent Trends and Future Prospects." Paper presented at a meeting of the International Liaison Committee for Research on Korea, Daejeon, Republic of Korea, 1972:13, Table 1.

Table 1-2. Crude Birth and Death Rates: All Korea, 1924~1944, and Republic of Korea, 1945~1970

	Crude Birth Rate		Crude Death Rate	
	Estimated	Based on registration[a]	Estimated	Based on registration[a]
All Korea				
1925 (October 1)	45.4[b]	37.5	27.9[b]	21.6
1930 (October 1)	45.3[b]	30.9	25.5[b]	20.3
1935 (October 1)	43.5[b]	32.6	20.2[b]	19.0
1940 (October 1)	41.0[b]	35.3	u)	19.2
1944 (May 1)				
Republic of Korea				
1949 (May 1)	u)	23.9	u)	7.8
1955 (September 1)	43.3[c]	31.2	16.3[c]	6.9
1960 (December 1)	42.9[c] 35.8[c]	42.6	10.9[c]	10.3
1966 (October 1)	33.7[c] 30.0[c]	u)	11.4[d] 9.5[d]	u)
1970 (October 1)	29.0[c]		8.0~9.0[d]	

u) Unavailable

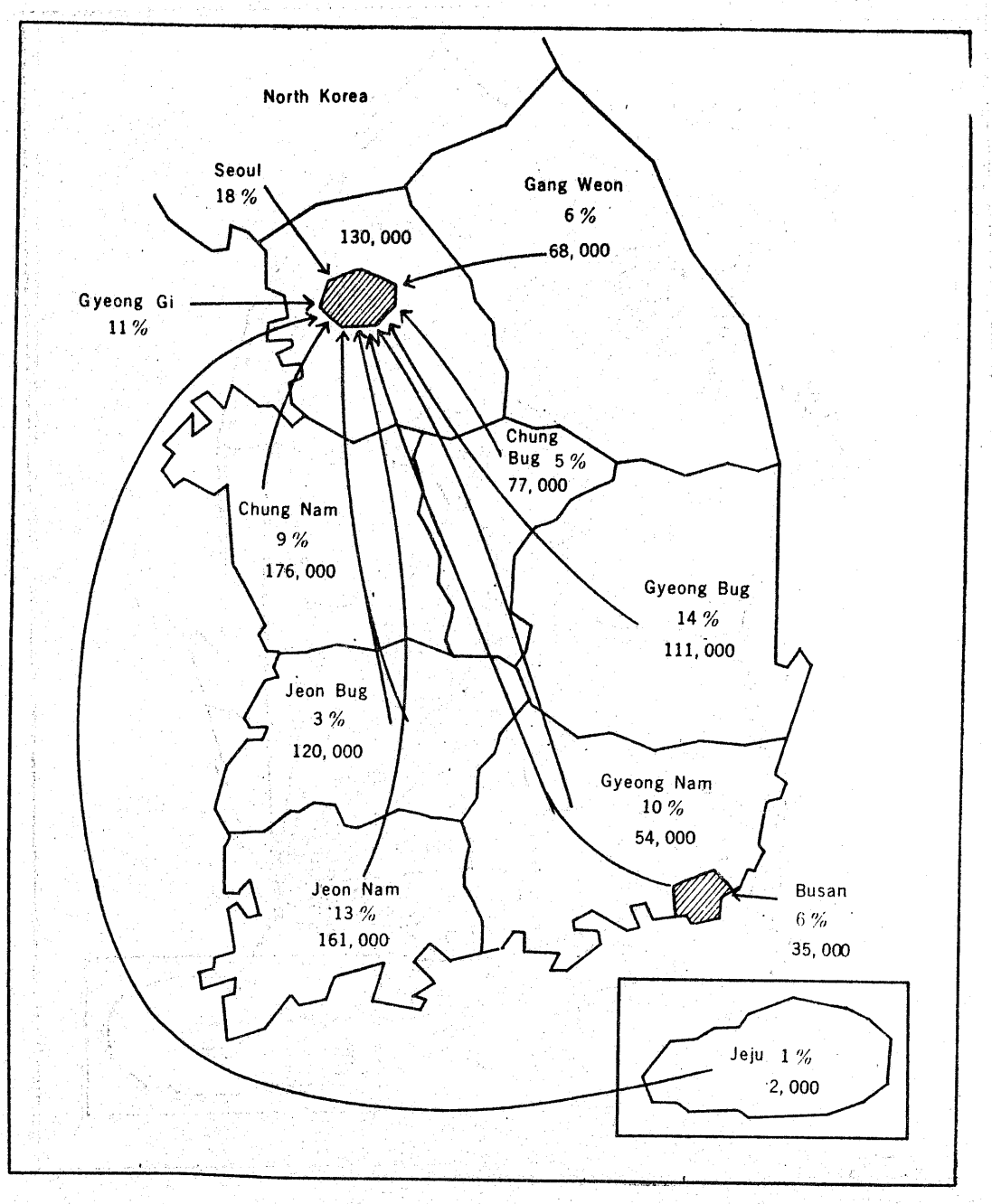
a) See Republic of Korea, Economic Planning Board (1970:30, Tables 2~5).

b) Estimates by Taebin Im. "Population Projections for the Republic of Korea, 1960~1980." Monthly Statistics of Korea (Seoul), 5 (11~12): 5—47, (1963:12, Table 4;15, Table 7).

c) Preliminary estimates by Cho, op. cit., 1972:13, Table 1.

d) Preliminary estimates based on a new procedure using incomplete birth registration statistics and census.

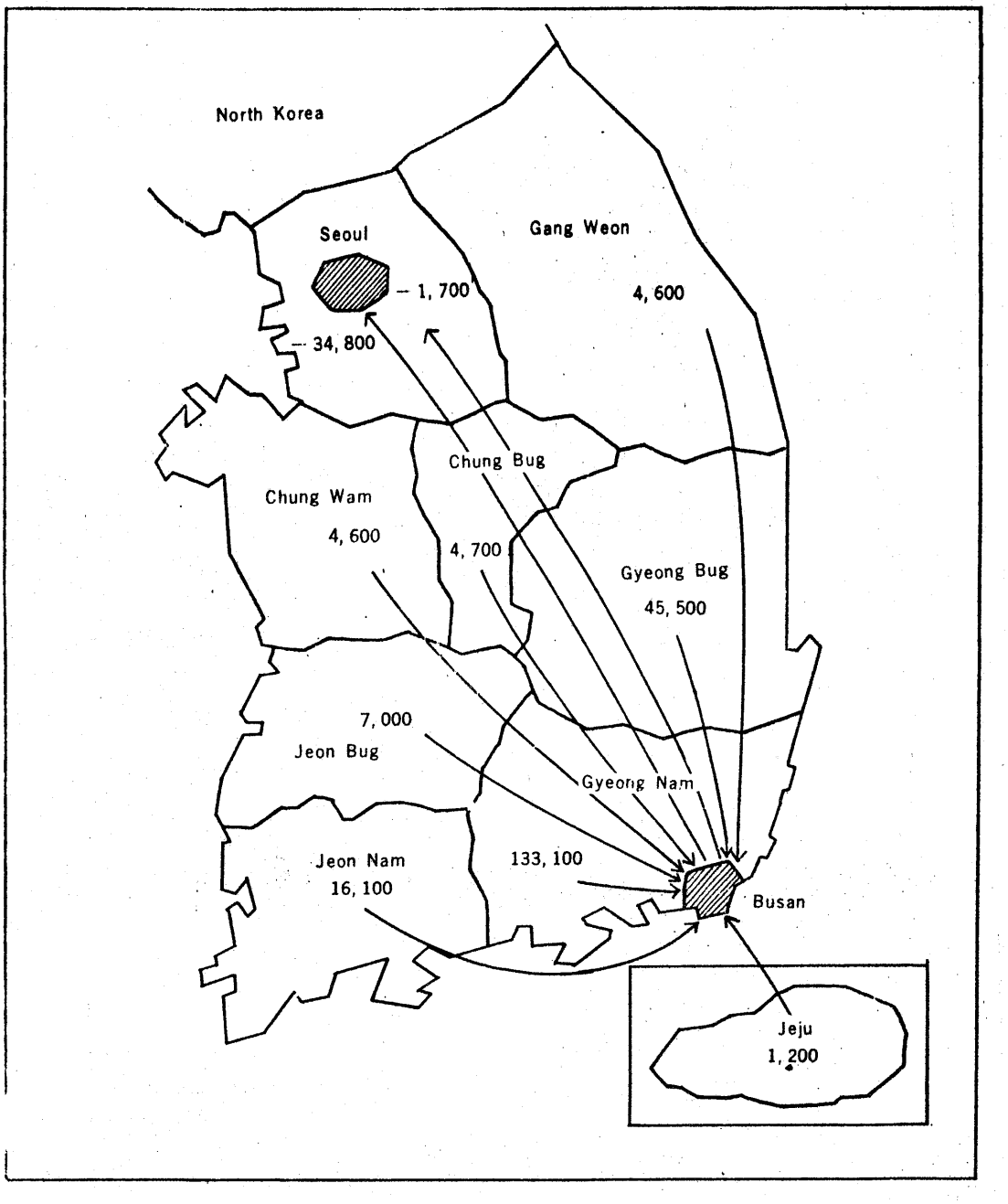
Figure 1-1. Population Distribution by Province in 1970 and Net Migration* into Seoul 1965~1970, Republic of Korea



Source: Economic Planning Board. *1970 Population and Housing Report*, Vol.2, 10% Sample Survey, 4—3 Internal Migration.

*Net migration figures rounded to the nearest 1,000.

Figure 1-2. Population Distribution by Province in 1970 and Net Migration* into Busan 1965~1970, Republic of Korea



Source: Economic Planning Board. *1970 Population and Housing Report*, Vol. 2, 10% Sample Survey, 4–3 Internal Migration.

*Net migration figures rounded to the nearest 100.

Table 1-3. Population Distribution by Residence and Per Cent Change of Metropolitan Urban and Rural Population: Republic of Korea, 1955~1970

	1955		1960		1966		1970	
	Population (1,000)	Distribution (%)	Population (1,000)	Distribution (%)	Population (1,000)	Distribution (%)	Population (1,000)	Distribution (%)
Total country	21,526	100.0	24,989	100.0	29,193	100.0	31,469	100.0
Metropolitan[a]	2,624	12.2	3,609	14.4	5,219	17.9	8,500	27.0
Shi[b]	2,657	12.3	3,592	14.4	4,761	16.3	5,110	16.2
Rural	16,245	75.5	17,788	71.2	19,213	65.8	17,859	56.8

	Per cent change			
	1955~1960	1960~1966	1966~1970	1955~70
Metropolitan[a]	+37.5	+44.6	+62.9	+223.9
Shi[b]	+35.2	+32.5	+ 7.3	+ 92.3
Rural	+ 9.5	+ 8.0	- 7.0	+ 9.9

Source: Republic of Korea, Economic Planning Board, 1955, 1960, 1966, and 1970 censuses.

The importance of rural-urban migration of such magnitude is its possible effect on fertility rate of migrants. Table 1-4 shows the difference in fertility rate between women in rural area and those in urban area in 1960's. Although fertility rate declined for women in both rural and urban areas, the rural-urban difference in fertility remains essentially unchanged. The objective of this study is to present general information on migration and fertility in Korea in recent years and their prospects in the future and to investigate the relationship between migration and the effetcs of rural-urban migration on fertility rate in particular.

Chapter II presents analyses of past and future trend of fertility rate and socio-economic developments in Korea. Chapter III presents general background information on internal migration and characteristics of migrants. Finally, Chapter IV presents results of various analyses of the relationship between migration and fertility.

Table 1-4. Estimated Total Fertility Rates Per 1,000 Women, by Residence: Repulic of Korea, 1960~1970

Year[a] and residence	Total fertility rates		
	Rural	Urban	Rural and urban
1960	6,759[b]	5,380[b]	6,130[b]
1961	6,610[b]	4,935[b]	5,790[b]
1962	6,191	4,794	5,505
1963	6,156	4,611	5,400
1964	5,579	4,158	4,887
1965	5,153[b]	3,240[b]	4,595[b]
1966	5,545	3,340	4,815
1967	4,778	3,175	4,230
1968	5,140	3,375	4,460
1969	4,635	3,210	4,040
1970	4,422	3,145	3,940

a) Rates for the years 1960~1964 are based on the 1966 Census data (Korean Office of Statistics and Research, 1970); rates for the years 1965~1970 are based "Own Children" tabulation in the *1970 Population and Housing Census Report*, Vol. 2, 4-2 "Fertility," by Economic Planning Board, Bureau of Statistics. Reproduced from Lee-Jay Cho, "Korean Population: Trends and Prospects," 1974, with changes in format.

b) Excludes fertility of women 45~49 years of age.

II. Trend Analyses of Factors Affecting Fertility Rate in Korea: Past and Future

A. TREND ANALYSES 1960~1972

The objectives of this chapter are twofold. First, it discusses the trends in socio-economic factors and how they are related to fertility rate in Korea between 1960 and 1972. Second, future trends in these same socio economic factors and fertility rate are discussed for the period from the present to 1981. Since the topics discussed for the past trends are more or less the same as those discussed for future trends, there are some repetitions. However, the dichotomy is made between the presentation of materials relating to past trends and that of these relating to future trends. This is because the analyses of past trends are designed to provide the general background data for statistical analyses of fertility differentials in later chapters, whereas the discussion of future trends is presented for the benefit of policy makers.

In relating socio-economic trends to those in fertility rate, the framework of analysis is based on the economic theory of fertility as expounded by H. Leibenstein,[1] G. Becker,[2] and J. Mincer.[3] Essentially, this theory looks at the fertility pattern as a reflection of consumer behavior responding to changing parameters of demands for children. According to the traditional line of micro-theory, the demand for children can be expressed in the following way:

$$N = f(P, Y, \text{taste})$$

where N is the number of children demanded, P the price of a child, Y family income, and taste is the family preference toward having one more child vs. acquiring another utility creating good or service. The price of a child can be measured by the income foregone by his mother in order to raise him and expenses involved in raising the child including the cost of education. And in negative terms, it can also be measured by the contribution to a family income by the child. Y, family income, influences the demand for a child because it reflects the family's ability to buy consumer goods and services and also its ability to raise children. Taste can be measured by proxy variables such as the level of education parents received, religion, the place of birth and of long-term residence, occupation of parents, etc.

What will be the effect of income on fertility rate? First, we present the data for gross national product, per capita GNP and population trends in Table 2-1. The data indicate that there was an increase in the rate of population growth between 1955 and 1960 as the dramatic decline in death rate was not matched by a similar decline in birth rate. However, between 1960 and 1970, although there was a continuing decline in death rate, the decline in birth rate

1) Leibenstein, Harvey. *A Theory of Economic-Demographic Development*, Princeton, 1954.
2) Becker, Gary, S. "An Economic Analysis of Fertility," in University-National Bureau Conference Series 11, *Demographic and Economic Change in Developed Countries*, Princeton, 1960. pp. 209~231.
3) Mincer, Jacob. "Market Prices, Opportunity Costs, and Income Effects," in C. Christ, et al., eds., *Measurement in Economics: Studies in Mathematical Economics and Econometrics in Memory of Yehuda Grunfeld*, Stanford, 1963. pp. 67~82.

was greater. This has resulted in a decline of the annual rate of population growth from 2.9 per cent in 1960 to about 1.9 per cent in 1970. This decline was accompanied by a rapid increase in GNP from $2.3 billion in 1960 to $9.8 billion in 1970, an increase of about 326 per cent. During the same period, per capita GNP increased also from $94 to $303, an increase of approximately 222 per cent.

Table 2-1a. Population and Growth Rate in the Republic of Korea: 1949~1970

	1949	1955	1960	1966	1970
Population	20,167	21,502	24,954	29,160	31,435
Annual Growth Rate[a](%)	—	1.0	2.9	2.7	1.9
Crude Birth Rate[b]	—	42.9	33.7	29.0	
Crude Death Rate[c]	—	16.3	10.7	7.5~8.0	

a) Economic Planning Board; 1970 Population and Housing Census Report, Vol. 1, 1972.
b),c) Cho, Lee-Jay. The Demographic Situation in Korea. Mimeographed, April, 1973.

Table 2-1b. Major Variables of Economic Development for Selected Years: 1960, 1965, 1970 & 1972

Variables	1960	1965	1970	1972
INCOME				
Gross National Product				
Amount (million $)	2,332	3,246	6,985	9,805
Annual growth rate (%)	2.3	6.1	7.9	7.0
Per capita GNP				
Amount($)	94	114	242	303
Annual growth rate	−0.7	3.8	6.1	5.3

Source: Bank of Korea. *Statistical Year Book*. 1973.

According to the model presented above, this appears to be contrary to the economic theory of fertility. Unless the children are inferior goods--an economist's jargon indicating the demand for the good in question declines as income increases such as low quality food--as the ability to pay increases, one would expect that the demand for children would increase as well as the demand for other consumer goods and services. In this case, the data seem to have failed to show the pure relationship between income and the demand for children. Instead, it appears that per capita GNP reflects the higher cost of having one more child and also the higher level of education for parents received. When the education class of head of household is held constant, a higher income is associated with a greater demand for children by a study in the United States.[4]

An important social development which influences fertility rate is urbanization. Table 2-2 shows the rapid pace at which urbanization in Korea proceeded between 1955 and 1970. In 1955, approximately one quarter of total population was living in urban areas, whereas by 1972, it

4) Becker G. 1960. *op. cit.*, p. 221.

is estimated that more than one half lived in urban areas. Concurrently, the crude birth rate in Korea declined from 42.9 per 1,000 to 29.0 per 1,000. The assumption that urbanization might have an effect of lowering birth rate is supported by the fact that there have been significant differences in fertility rate between rural area and urban area as shown in Table 2-3. Note that although the fertility rate declined both in urban area and in rural area between 1960 and 1970, the fertility difference between the two area remains essentaialy, unchanged.

Table 2-2. Urbanization Trends: 1955~1970

	1955[a)]	1960[b)]	1966[c)]	1970[d)]
Percentage of living				
In urban area(%)	24.6	28.0	33.6	41.1
In rural area(%)	75.5	72.0	66.4	58.9

a,b,c) Economic Planning Board, *Korea Statistical Year Book*, No. 17, Tab. 25, pp.27~28.
d) E.P.B., *Ibid.*, *1970 Population and Housing Census Report*, Vol. 1, 1972. Tab. 2, pp.24~27.

Table 2-3. Fertility Rate in Urban and Rural Area: 1960~1970

	1960	1962	1964	1965	1968	1970
Urban & rural	6.13	5.51	4.89	4.82	4.46	3.94
Urban area	5.37	4.79	4.16	3.34	3.38	3.15
Rural area	6.76	6.19	5.58	5.55	5.14	4.42

Source: Cho, Lee-Jay. "The Demographic Situation in the Republic of Korea." Mimeographed. 1973.

According to the economic theory of fertility, urbanization can be considered as the process of a change in consumer taste with regard to having one more child. City dwellers are expected to have less preference for children vis-a-vis other utility creating things than rural people. Also, the cost of raising children is higher in urban area than in rural area.

Another taste conditioning factor is the level of education. Table 2-4 shows that although the size of population aged 6 and over increased from 16 to 26 million between 1955 and 1970, the proportion of the people who are enrolled in or those who finished primanry school also increased from 26.9 to 50.2 per cent during the same 15-year period. It is theorized that as the level of education parents receive increases, the preference for the quality of child supersedes that for the number of children. Also the fact that a greater proportion of children is attending school means that a smaller proportion of children is available to work at farms. This has an effect of increasing the cost of raising children.

Table 2-4. Educational Attainment: 1955~1970

	1955[a)]	1960[b)]	1970[c)]
Population aged 6 and over(1,000)	16,407	19,663	26,261
Per cent of population aged 6 and over who are enrolled in or who finished primary school	26.9	35.6	50.2

a),b) Economic Planning Board. "Country Monograph."
c) E.P.B.. *1970 Population and Housing Census Report*, Vol. 1, 1972. Tab. 4, pp. 162~163.

Another taste conditioning factor is industrialization. Since industrialization is usually accompanied sectorial change in the share of GNP, we present data on this in Table 2-5. Data show that the growth rate of the mining and manufacturing sector increased from 9.2 in 1960 to 18.2 per cent in 1970, whereas that of the agriculture, forest and fishery sector witnessed a decline from 0.1 to minus 0.9 during the same ten-year period. In addition to influencing consumer taste, industrialization enters into equation of demand for children in several ways. It increases the cost of raising children by offering an alternative to housekeeping to an increasing number of child-bearing women. The cost of education, thus that of raising children, is also expected to rise with industrialization.

Another factor affecting fertility rate is the expected number of surviving children. Thus, with an increase in life expectancy and a decline in infant mortality rate in particular, fertility rate is expected to decline. Table 2-6 shows that infant mortality rate in Korea declined by about 38 per cent from 72 per thousand to 45 per thousand between 1966 and 1971. Between 1955~1960 and 1971, life expectancy had also increased by about 18 per cent for males from 51 to 62 years and about 20 per cent for females from 54 to 67 years. In this connection, note that behind these trends in infant mortaility rate and life expectancy, there has been an increase in investment in health. Table 2-7 shows that ratio of population to health workers declined significantly between 1960 and 1972.

Table 2-5. Production by Industry

	1960	1965	1970	1972
Agriculture, forest & fishery				
Growth rate(%)	0.1	−1.9	−0.9	
Per cent of GNP	41.3	39.4	28.0	28.3
Mining & manufacturing				
Growth rate(%)	9.2	18.7	18.2	
Per cent of GNP	12.1	15.5	22.8	24.4

Source: Bank of Korea. *Statistical Year Book.* 1973.

Table 2-6. Life Expectancy and Infant Mortality 1955~1971

Life Expectancy at Birth	1955~1960	1966	1971
Male[a)]	51.1	59.7	61.9
Female[b)]	53.7	64.1	66.8
Infant Mortality Rate[c)]	—	0.072	0.045

a), b) E.P.B.. "Country Monograph,." op. cit.
c) Lee, D. "An Estimation of Infant Mortality Rate in Korea," Mimeographed, 1974.

Table 2-7. Public Health Measure-Investment in Health: 1960~1972

	1960	1966	1970	1972
Population per physician[a)]	3,022	2,548	2,107	1,852
Population per nurse[b)]	3,207	2,963	2,169	1,649
Number of health centers[a)]	189	189	192	193

a) Republic of Korea. Year Book of Pulbic Health and Social Statistics. 1973. Tab. 35, pp. 138~139.
b) *Ibid.*, Tab. 37. pp.142~143.
c) *Ibid.*, Tab. 50. pp.186~187.

We have presented selected data of economic and social development which accompanied the decline in fertility during the last 15 years in the Republic of Korea. No causal conclusion between the two has been made. However, using the economic theory of fertility, some inferences are made to the effect that these indices of economic and social development in Korea appear to have played an important role in reducing fertility.

B. TREND ANALYSES 1972~1981

As we look at the future, unless unforeseen events upset the clearly established trend, it is expected that GNP, urbanization, industrialization, educational level and life expectancy are all expected to continue to in crease, if not at the same rate, at least at somewhat reduced rate. These are important factors to consider in estimating the future trends in fertility rate in Korea.

According to an estimate by Korean Institute for Family Planning, internl migration from rural to urban area will continue at about the same rate as in the past. (See Table 2-8) Projection is made on the belief that those factors hypothesized to be causes of internal migration in Korea are expected to be present and continue to exert more or less the same degree of influence on internal migration.

Table 2-8. Urbanization Trends

	1955	1960	1965	1970	1975*	1980*
Percentage of living						
In urban area(%)	24.6	28.0	32.7	41.1	48.7	57.8
In rural area(%)	75.4	72.0	67.3	58.9	51.3	42.2

Source: For 1955, 1960 and 1966, Economic Planning Board, *Statistical Year Book*. No. 17, pp. 27~28; for 1970, E.P.B. *Population and Housing Census Report*, Vol. 1, 1972. pp. 24~27.

* K.I.F.P. Projection for 1975 and 1980: It is based on the assumption that the nation will become more urban at 2 per cent annual rate as in the past.

According to the economic theory of migration formulated by M. Todaro,[5] migration is the process of adjustment to market disequilibrium created by the difference in wage rate between urban and rural area. And urban-rural wage differential is expected to continue to exist in the 1977~1981 period. According to the long-range forecast by the Economic Planning Board, sectorial change in favor of manufacturing and mining industries at the expense of agriculture, forest and fishery sector will continue to 1981. (See Table 2-9) This indicates that the shift of labor from rural agricultural areas to urban industrialized areas is expected to continue.

Urbanization will be a powerful countervailing force against the unfavorable demographic trends on birth rate. It is expected that the proportion of women in most fertile ages will be

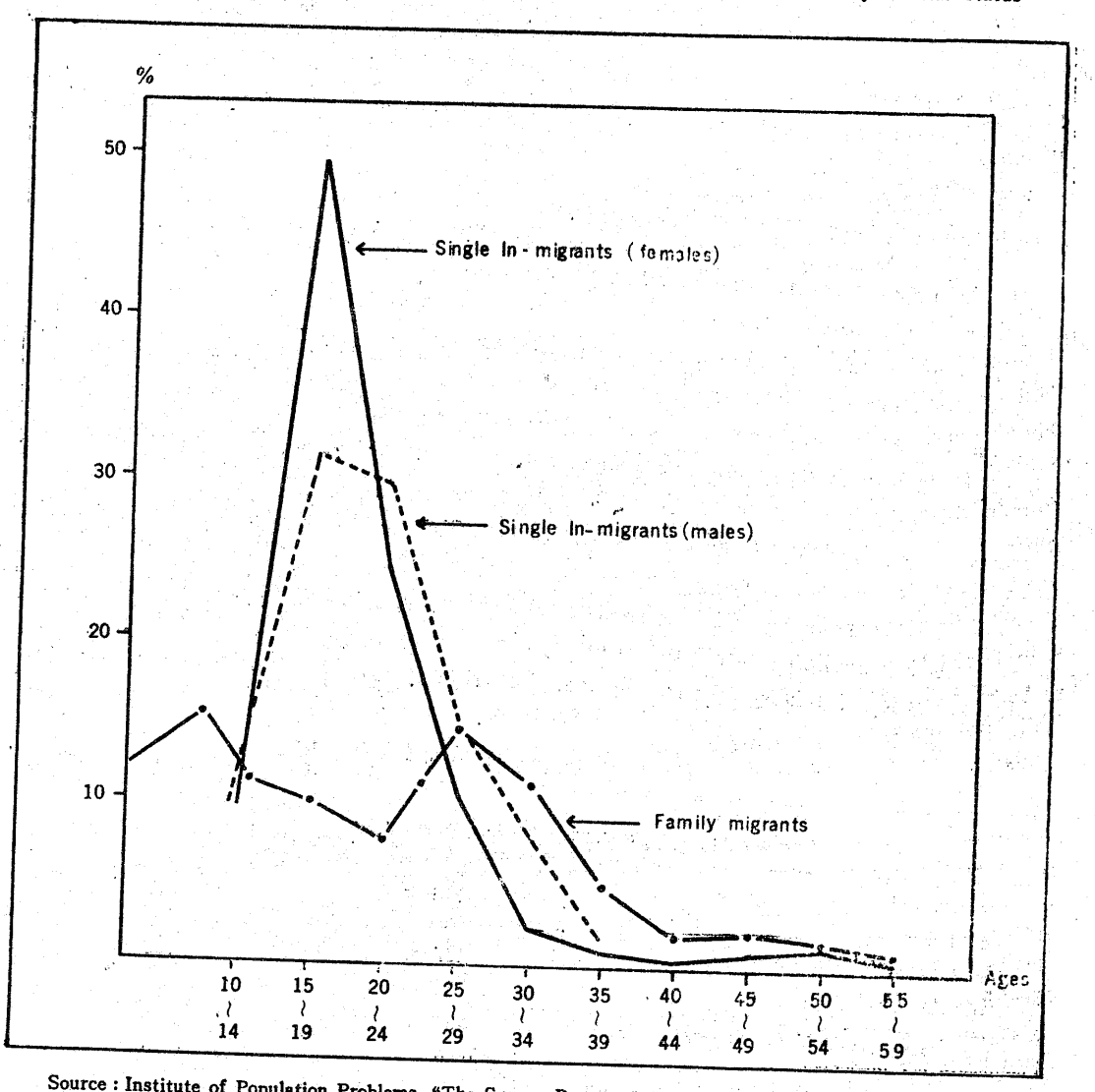
5) P. Todaro, Michael • "A Model of Labor Migration and Urban Unemployment in Less Developed Countries," *American Economic Review*. Vol. 69, No. 1, March, 1969. pp. 138-148.

Table 2-9. Production by Industry (1970 prices)

	1976	1981
GNP (billion won)	4351	7331
Agriculture, forest & fishery (billion won)	928	1167
Growth rate(%)	4.4	4.7
Per cent of GNP(%)	21.3	15.9
Mining & manufacturing(billion won)	1473	3145
Growth rate(%)	16.4	16.4
Per cent of GNP(%)	33.9	42.9

Source: Economic Planning Board. *Long-Range Outlook of Our Economy*, 1972~1981. 1973. p. 12.

Figure 2-1. Age Distribution of Migrants into Seoul, 1960~1966 by Sex and by Marital Status



Source : Institute of Population Problems, "The Survey Report on Fertility and Migration of Seoul City," *"Journal of Population Studies*, No 3, 1966, p.102.

higher during the 1977~1981 period than during the 1972~1976 period. (See Table 2-14) By far, the largest age group who migrate from rural to urban area is precisely the young and most fertile group. (See Figure 2-1) If living in cities itself has an influence on the preference and attitude about the ideal family size, then the expected future internal migration would have a significant effect of lowering the nation's birth rate during the 1977~1981 period.

Another development which is expected to exert a favorable influence in reducing birth rate is education. Education is known to be a powerful taste conditioning factor. As mentioned before, it is expected that more educated people prefer smaller family size and higher quality per child than less educated. Table 2-10 shows that by 1981 it is estimated that about 64 per cent of middle and high school age children will attend their respective schools. This is a 15 percentage point increase from 1972.

Table 2-10. Proportion of School Age Children Attending Middle & High School

	1972	1981
Students	2416[a)]	3234[a)]
Population of 12~17 ages	4937[b)]	5048[c)]
Student as per cent of 12~17 population	48.9%	64.1%

Source: a) Economic Planning Board. *Long-Range Outlook of Our Economy*, 1972~1981. 1973. p.59.
b) E.P.B. *Statistical Year Book*, 1971. p. 38.
c) Korean Institute for Family Planning's Population Estimate.

The other component of investment in human capital is health. To repeat, investment in health is expected to reduce the birth rate by reducing uncertainty about the survival of children. This would reduce the need for having an extra child or children to ensure the number of surviving children. Investment in health is also expected to reduce the birth rate indirectly by being an impetus for economic growth. For investment in health which is investment in human capital is expected to increase the per capita GNP by increasing the productivity of labor.

According to the forecast by the Economic Planning Board, investment in health is expected to increase during the 1977~1981 period. Table 2-11 shows that the population-physician ratio is expected to decrease from 1650 in 1976 to 1320 in 1981. Health facilities are also estimated to be more readily available during the same period.

Finally, the price of raising a child, the most important factor in the demand for children,

Table 2-11. Investment in Health, 1976~1981 Estimates

	1976	1981
Number of hospitals	467	633
Number of beds	26	42
Number of beds per one billion population	81	115
Population per physician	1650	1320

Source: Economic Planning Board. *Long-Range Outlook of Our Economy*, 1972~1981. 1973. p.83.

is expected to rise during the 1977~1981 period. According to the E.P.B. estimate, the rate of unemployment is expected to decline from 4.0 to 3.0 per cent from 1976 to 1981 (See Table 2-12). More important is that the proportion of labor force employed by manufacturing and mining industries is expected to rise from 18.7 to 23.1 per cent, whereas that employed in agricultural and fishery sector is expected to decline from 43.3 to 35.0 per cent during the same period. This is significant because the agricultural sector is assumed to contain more of those who are in the concealed unemployment category than the manufacturing sector. These future expected developments mean rising cost of raising children in terms of cost of time. As housewives find widening opportunity outside the household for employment, their cost of time in raising children would accordingly become higher. At the risk of repetition, this, according to the economic theory of fertility, is the most powerful factor reducing the desired number of children.

In the Korean context, the cost of raising children is shown to be an important factor limiting the size fo family according to a K.I.F.P. survey. Of the 545 unmarried women aged 18 to 27 interviewed, 47 per cent wanted to have family planning for economic reasons and 60 per cent for better education of children. Note that the quality per child is theorized to be one of three constraints imposed in choice involving the demand for children.

Finally, if the survey indicates the future trend, attitude and value system among child-bearing women may change during the 1977~1981 period to favor lower birth rate. According

Table 2-12. Population and Employment, 1976~1981

	1977	1978	1979	1980	1981	Average annual rate of increase 1972~1976	Average annual rate of increase 1977~1981
Total population	34,826	35,314	35,773	36,238	36,709		
(Growth rate)	(1.4)	(1.4)	(1.3)	(1.3)	(1.3)	(1.5)	(1.3)
Population 14 years old & over	23,846	24,511	25,135	25,765	26,229		
Per cent of total population	(68.5)	(69.4)	(70,3)	(71.1)	(71.5)		
Economically active population	12,114	12,463	12,906	13,337	13,763		
(Growth rate)	(3.0)	(3.2)	(3.2)	(3.2)	(3.2)	(2.9)	(3.2)
Employed	11,682	12,081	12,494	12,924	13,355		
(Growth rate)	(3.3)	(3.4)	(3.4)	(3.4)	(3.3)	(3.1)	(3.3)
Agriculture, forestry & fishery	4,847	4,802	4,759	4,713	4,674	(−0.08)	(−0.1)
(Composition)	(41.5)	(39.7)	(38.1)	(36.5)	(35.0)		
Mining & manufacturing	2,306	2,497	2,690	2,889	3,088		
(Composition)	(19.7)	(20.7)	(21.5)	(22.4)	(23.1)		
Social overhead capital & other services	4,529	4,782	5,045	5,322	5,593	(3.5)	(5.5)
(Composition)	(38.8)	(39.6)	(40.4)	(41.1)	(41.9)		
Unemployed	432	422	412	413	408		
(Unemployment rate)	(3.7)	(3.5)	(3.3)	(3.2)	(3.0)		

Source: E.P.B. *Long-Range Outlook of Our Economy*, 1972~1981. 1973. pp.130-131.

to the same K.I.F.P. survey, ideal family size was 2.3 in Seoul, 2.6 in other cities and 2.7 in rural areas. These are lower than of currently married women which is 3.7 childen. Son pref-

erence also seems to decline. Whereas the ideal number of sons among currently married women is 2.3, that for the sample was 1.5 in Seoul, 1.6 in other cities and 1.7 in rural areas. In fact, 59 per cent of those interviewed said that if after two children there is no son, they will still be satisfied.[6]

Unfavorable demographic trends expected during the 1977~1981 period are the increase in the proportion of women in child-bearing ages, uncertainty about continuation of the rise in the age at marriage and finally the likelihood of diminishing rate of decline in the fertility rate among the women of 30~39 ages. To assess the dimension of the problem, let us look at the future outlook and the past record of demographic development and achievements.

In a demographic analysis of causes of the decline in crude birth rate from around 40 to 30 per 1,000 from 1962 to 1971, it is estimated that about 32 per cent of the decline is attributable to the rising age at marriage, 61 per cent to the decline in marital fertility rate and the remaining 7 per cent to the favorable change in age-sex structure. (See Table 2-13)

Proportion of the women of child-bearing age in fact declined about one-half percentage point between 1960 and 1966 and the increase in the later half of sixties was also less than one percentage point. Note that in the later half of sixties, the proportion of women in 25~29 ages, the most fertile age group actually declined by 8 percentage point. (See Table 2-14) In contrast, according to the K.I.F.P. estimate, the proportion of women in child-bearing age will increase by 5.9 percentage point between 1970 and 1977 and 2.7 per cent more during 1977~1981 period. Furthermore, next to 20~24 age group, the biggest increase is expected, 1.1 percentage point in the most fertile age group of 25~29 ages. In terms of the effect on total growth of population, it is to be kept in mind that these proportionate increases are of the rising total population.

According to Table 2-13, the most important factor in reducing birth rate during 1960's was the decline in fertility rate among women in their thirties. This observation is supported by the trend in age-specific fertility rate recorded in Table 2-15. Women in their thirties are those whose decision to stop or to continue to have additional children is crucial. In 1960's, it is believed that the exposure to contraceptive methods had the greatest impact among this group. In the 1977~1981 period, the impact is expected to decline as the proportion of women in this age group who are not aware of contraceptive methods will decline. On the other hand, socio-economic developments mentioned earlier in this chapter may change the family size preference among those in their thirties who knew about contraceptives but did not use them.

The next most important question is whether the age at marriage will continue to rise at the rate of 1960's. Obviously there is a definite limit to the contribution that can be made for the reduction of birth rate by this factor. The mean age at marriage at present is estimated as 23 years, only 1.5 years less than the desired mean age among the 545 unmarried women of 18 to 27 years of age interviewed for the K.I.F.P. survey mentioned before. According to the same K.I.F.P. survey, only 11 per cent wanted to start using contraceptives from the start of their marriage, whereas 47 per cent did not want to use contraceptives until they have one

6) After marriage, women's attitude changes due to influences of husbands and in-laws. It will be worthwhile to make a longitudinal survey of these 545 women their marriage to examine whether there have been changes in their attitude or behavior.

or two children.

What is needed is a change in social structure and economic opportunity for the young women, married or unmarried, in the future. The change is likely to alter the newly married people's preference. One of the changes in social structure expected is in the past marriage pattern of young women marrying men about five years older. This pattern of young women marrying men about five years older will change necessitated by the coming marriage squeeze; that is, there will not be sufficient number of men 5 years older for the large cohort of young women of marriageable age. This will increase the age at marriage. Also, as mentioned before, as the labor market tightens during the 1977~1981 period, employment opportunity is bound to improve for women before and during their marriage as well as for men. Such employment

Table 2-13. Per Cent Distribution of Decline in the Crude Birth Rate, by Change in Specified Factors: Republic of Korea, 1962~1971

		Age group						
	Al age	15~19	20~24	25~29	30~34	35~39	40~44	45~49
1971 KIFP fertility survey		(24.2% decline in Crude Birth Rates from 40.9 to 31.0)						
Agesex structure	7.5	−0.3	8.5	11.3	−8.1	−2.2	−1.6	−0.2
Marital fertility rates	60.2	0.1	−9.4	−5.9	32.1	28.4	11.6	3.3
Marital structure	32.3	3.9	28.1	4.7	−2.1	−1.8	−0.5	−0.1
All three	100.0	3.7	27.2	10.1	21.9	24.4	9.5	3.4
1971 special demographic survey		(25.6% decline in Crude Birth Rates from 40.7 to 30.3)						
Agesex structure	7.7	−0.2	8.5	10.5	−7.1	−1.9	−1.9	−0.1
Marital fertility rates	60.1	−5.7	−5.6	2.1	20.7	25.0	20.4	3.3
Marital structure	32.1	3.9	27.9	4.4	−1.8	−1.6	−0.6	−0.1
All three	99.9	−2.0	30.8	17.0	11.8	21.5	17.9	3.1
Own children tabulation from 1971 KIFP fertility survey		(25.9% decline in Crude Birth Rates from 39.8 to 29.5)						
Agesex structure	6.0	−0.3	7.9	9.9	−7.4	−2.1	−1.5	−0.2
Marital fertility rates	63.0	−0.9	−4.4	−2.8	31.5	25.4	11.1	3.1
Marital structure	30.7	4.8	25.9	4.1	−1.9	−1.7	−0.4	−0.1
All three	100.0	3.6	29.4	11.2	22.2	21.6	9.2	2.8

Percentages do not sum total due to rounding error.
Reproduced from Cho, Lee-Lay. *Current Fertility Estimates and Trends.* Published by the Korean Institute for Family Planning. June, 1973. p.15.

Table 2-14. Proportion of Women in the Child-Bearing Ages 15~49 of Total Female Population: Republic of Korea, 1960, 1966, 1970 & 1977~1981

	1960[1]	Growth rate 1960~1966	1966[1]	Growth rate 1966~1970	1970[1]	Growth rate 1970~1977	1977[2]	1978[2]	1979[2]	1980[2]	1981[2]	Growth rate 1977~1981
15~19	9.1	−0.1	9.0	0.6	9.6	2.6	12.2	12.1	12.0	11.8	11.6	−0.6
20~24	8.6	−1.0	7.6	0.2	7.8	2.1	9.9	10.5	11.0	11.5	11.4	1.5
25~29	7.7	0.1	7.8	−0.8	7.0	0.6	7.6	7.7	8.0	8.2	8.7	1.1
30~34	6.3	0.5	6.8	0.1	6.9	−0.4	6.5	6.5	6.5	6.6	6.8	0.3
35~39	5.8	−0.1	5.7	0.3	6.0	0.1	6.1	6.1	6.0	5.9	5.9	−0.2
40~44	4.5	0.3	4.8	0.2	5.0	0.5	5.5	5.6	5.7	5.8	5.7	0.2
45~49	4.1	−0.2	3.9	0.3	4.2	0.4	4.6	4.8	4.8	4.9	5.0	0.4
50~54	3.3	0	3.3	0	3.3	0.8	3.8	3.9	3.9	4.0	4.1	0.3
15~54	46.1	−0.5	45.6	0.9	46.5	5.9	52.4	53.3	54.0	54.7	55.1	2.7

Source: 1) ROK, EPB. Bureau of Statistics (1963, 1969, 1972).
2) KIFP Estimate.

Table 2-15. Age Specific Fertility Rates Obtained from Various Surveys for Korea: 1962~1981

		1962~1963	1963~1964	1965~1966	1967~1968	1969~1970	1970~1971	1977	1978	1979	1980	1981
15~19	KIFP	16.0	22.5	19.6	11.4	7.4	2.3	2.3	2.2	2.2	2.2	
	OWN	18.9	16.9	15.4	12.2	8.7	10.2					
20~24	KIFP	227.3	212.2	193.7	185.0	181.6	182.2	101.2	92.4	84.3	77.1	74.4
	OWN	225.5	221.2	192.4	186.8	176.3	171.2					
25~29	KIFP	321.3	316.6	309.7	304.7	311.9	324.6	242.8	227.4	211.9	197.8	177.1
	OWN	300.9	298.8	284.4	266.4	291.8	297.1					
30~34	KIFP	304.8	274.2	220.1	212.5	219.9	215.3	194.2	185.2	177.5	168.4	155.9
	OWN	294.3	282.8	216.4	218.3	200.5	202.2					
35~39	KIFP	204.2	194.3	163.2	143.7	106.2	114.9	109.7	106.6	108.3	99.8	85.0
	OWN	204.2	194.3	177.9	146.5	116.5	121.3					
40~44	KIFP	90.6	91.3	67.8	50.5	50.0	44.2	40.0	37.9	36.0	34.1	33.1
	OWN	90.6	91.3	67.8	50.5	50.5	44.2					
45~49	KIFP	25.1	24.0	7.8	6.1	9.2	9.8	3.6	3.4	3.3	3.2	2.0
	OWN	25.1	24.0	7.8	6.1	9.2	9.8					

Source: KIFP: 1971 KIFP Fertility Survey for 1962~1971, KIFP estimate for 1977~1981.
OWN: Own children tabulation based on the 1971 KIFP fertility survey.

will be accompanied by urbanization or rural to urban migration, for rural to urban migration is a reflection of the shift of the sectorial share of GNP from farming to manufacturing sector. The next chapter discusses general trends of internal migration in Korea.

II. Internal Migration in Korea and Characteristics of Migrants: 1955~1970

A. INTERNAL MIGRATION IN KOREA

The objective of this chapter is to present general information on internal migration in Korea and main characteristics of migrants. It is hoped that this chapter gives background information for rigorous analyses of determinants of migration and of the relationship of migration to fertility rate in later chapters.

Changes in population distribution among metropolitan, shi (city) and rural area between 1955 and 1970 reveal that rural-urban migration of Korea in recent years can be characterized as movements of population mainly into metropolitan areas of Seoul and Busan. (See Table 1-3 in Chapter I). The greatest migration into metropolitan area is recorded during five-year period between 1965 and 1970. According to 1970 census where respondents were asked their places of residence five years ago, 60.6 per cents of all migrants move into metropolitan area between 1965 and 1970. Shi's (cities) which number 30 received only 17.1 per cent of migrants, whereas rural areas received 22.3 per cent of migrants. Table 3-1 shows migrants' provinces of origins and their destinations.

If we look into inter-provincial movements of people between census periods since 1955, of two metropolitan areas, it is Seoul which gained about three per cent or more in its share of

Table 3-1. Internal Migration Based on "Residence Five Years Ago" by Province: Korea, 1965~1970

Origin	Destination	Number of migrants	Proportion	
Metropolitan	Metropolitan	79,607	3.2	15.1
	Shi	121,801	4.9	
	Rural	173,900	7.0	
Gyeonggi	Metropolitan	259,524	10.5	12.9
	Shi	25,426	1.0	
	Rural	35,687	1.4	
Gangweon	Metropolitan	96,047	3.9	7.5
	Shi	30,238	1.2	
	Rural	58,411	2.4	
Chungbuk	Metropolitan	90,972	3.7	6.7
	Shi	34,035	1.4	
	Rural	38,815	1.6	
Chungnam	Metropolitan	202,930	8.2	12.4
	Shi	49,125	2.0	
	Rural	55,518	2.2	
Jeonbuk	Metropolitan	138,433	5.6	8.3
	Shi	31,559	1.3	
	Rural	35,695	1.4	
Jeonnam	Metropolitan	193,293	7.8	11.2
	Shi	37,807	1.5	
	Rural	46,597	1.9	
Gyeongbuk	Metropolitan	193,759	7.8	12.3
	Shi	39,819	1.7	
	Rural	68,794	2.8	
Gyeongnam	Metropolitan	228,422	9.2	12.3
	Shi	48,225	1.9	
	Rural	30,426	1.2	
Jeju	Metropolitan	7,330	0.3	0.5
	Shi	2,052	0.1	
	Rural	2,703	0.1	
Foreign country	Metropolitan	7,184	0.3	0.5
	Shi	1,989	0.1	
	Rural	4,207	0.2	
All provinces	Metropolitan	1,410,710	57.1	84.3
	Shi	298,286	12.1	
	Rural	372,646	15.1	
Total	Metropolitan	1,497,501	60.6	100.0
	Shi	422,076	17.1	
	Rural	550,753	22.3	

Source: *1970 Population and Housing Census Report*. Vol. 2, 4-3, "Internal Migration."

Table 3-2. Population Distribution by Province, 1955 to 1970

Province	1955	1960	1966	1970
Seoul	7.0	10.4	13.0	17.6
Busan	4.7	4.8	4.9	6.0
Gyeonggi	10.5	10.4	10.6	10.7
Gangweon	6.6	6.2	6.3	5.9
Chungbug	5.3	5.5	5.3	4.7
Chungnam	9.8	10.6	10.0	9.1
Jeonbug	9.4	9.2	8.6	7.7
Jeonnam	13.9	14.2	13.9	12.7
Gyeongbug	14.8	15.8	15.3	14.5
Gyeongnam	16.7	11.9	10.9	9.9
Jeju	1.3	1.1	1.2	1.2
Total(%)	100.0	100.0	100.0	100.0
Population(in thousand)	21,677	24,989	29,160	31,460

Sources: Bureau of Statistics, Economic Planning Board. 1955, 1960, 1966 and 1970 Censuses.

nation's total population between each three intercensal periods. (See Table 3-2) Busan gained 0.1 per cent between each of the first three census periods of 1955, 1960, 1966, and slightly more than one per cent during the last two census periods of 1966 and 1970. Besides Seoul and Busan, the only province which gained its share of nation's total population between 1955 and 1970 is Gyeonggi, which surrounds Seoul. To repeat, then, Korean internal migration between 1955 and 1970 can be summed up as movements of people into the capital city and its surrounding area and only peripherally into Busan.

Table 3-3. Intercensal Population Growth and Density by Province: Korea, 1955~1970

	Annual Growth Rate(%)			Population Density[a]	
	55~60	60~66	66~70	1966	1970
Whole country	2.9	2.7	1.9	296.1	319.3
Seoul	9.2	7.6	9.9	6187.2	9014.1
Busan	2.2	3.5	7.1	3820.7	5029.1
Gyeonggi	3.1	2.0	1.0	283.2	306.1
Gangweon	2.2	1.9	0.4	109.6	111.6
Chungbuk	2.8	2.1	1.1	208.3	199.0
Chungnam	2.6	2.3	0.4	333.7	328.6
Jeonbuk	2.4	0.9	0.9	313.2	302.2
Jeonnam	2.3	2.2	0.3	335.7	332.1
Gyeongbuk	2.7	2.5	0.5	225.9	230.2
Gyeongnam	2.1	0.9	0.4	265.7	261.0
Jeju	−0.6	3.0	2.0	184.2	199.6

Density is defined as the number of population per square kilometer.

Source: Institute of Population Problems. *Analysis of Korean Population Distribution and Its Projection Based on 1970 Census*. Seoul, Korea. December, 1972.

Table 3-4. Rate of Population Growth by City, 1955~1960, 1960~1966 and 1966~1970

	1955~1960	1960~1966	1966~1970
1. Seoul	55.9	55.1	43.2
2. Busan	11.3	22.5	29.2
3. Incheon	26.3	31.0	20.6
4. Suweon	11.7	40.7	30.9
5. Euijeongbu	97.1	45.4	24.5
6. Chuncheon	21.7	21.2	20.5
7. Weonju	0.8	34.8	6.1
8. Ghangneung	15.4	11.1	11.8
9. Sogcho	61.1	38.3	14.1
10. Cheongju	13.6	34.3	14.1
11. Chungju	35.7	16.5	7.6
12. Daejeon	32.5	37.6	29.2
13. Cheonan	28.3	62.5	7.5
14. Jeonju	51.7	17.1	16.8
15. Gunsan	5.2	13.2	7.6
16. Iri	6.1	18.9	8.8
17. Gwangju	34.9	28.3	22.3
18. Mogpo	14.2	25.1	7.3
19. Yeosu	19.5	16.8	9.4
20. Suncheon	12.8	14.1	12.3
21. Daegu	38.9	24.9	25.8
22. Pohang	13.7	10.7	17.8
23. Gyeongju	16.3	12.9	5.5
24. Gimcheon	11.8	11.1	6.8
25. Andong	17.6	19.1	17.8
26. Masan	21.9	−2.2	20.9
27. Jinju	11.3	22.9	11.5
28. Chungmu	−22.0	5.7	6.8
29. Gimhae	0.2	19.0	11.6
30. Samcheonpo	19.7	5.6	1.3
31. Ulsan	12.9	280.4	39.2
32. Jeju	13.1	28.5	19.6

Note: City boundries are not adjusted.
Source: Wen Lang Li. "Research on Migration in Korea." October, 1974.

Reflecting the fact that Seoul gained more than any other city or province in its share of total population, Seoul's population grew more than 55 per cent between each of the three census periods of 1955, 1960 and 1966. (See Table 3-4) Between the last two census periods of 1966 and 1970, although Seoul gained more than during previous intercensal periods in terms of its share of total population, the rate of population growth was 43.2 per cent for the capital city due to the decline in nation's rate of population growth.

The resulting concentration of population in Seoul and Busan is well-illustrated by Table 3-3.

Korea had relatively high population density of 296 people per square kilometer in 1966 and it increased further to about 319 per square kilometer. The nation's increase in population density is insignificant, however, compared with the magnitude of increase for Seoul and Busan. Seoul had over 9,000 people per square kilometer and Busan over 5,000 in 1970. It is interesting to note that between 1966 and 1970, Gangweon and Gyeongbug were only two major provinces which gained in population density except metropolitan cities and Gyeonggi, which surrounds Seoul and Jeju which is an island with 1.2 per cent of nation's population.

B. DEMOGRAPHIC CHARACTERISTICS OF MIGRANTS

According to 1970 census, Korea has a youthful population with median age of 18.4. Median age for migrants into metropolitan areas is 23.0. This is misleading because migrants status is determined by whether or not one has moved ruing the last five years and, therefore, 0~4 age is excluded. If we exclude those under 15 who are not likely to migrate by themselves, a comparison of age composition between metropolitan in-migrants and total population shows that it is mainly young people who migrated into metropolitan areas between 1965 and 1970. Modal age for female migrants is 15~19 and for male migrants, it is 20~24. (See Table 3-5) About 40 percent of all metropolitan in-migrants fall into age bracket of 15~24. Only 17 per cent of migrants are 35 years of age or older.

If we compare the age composition of in-migrants into Seoul with that of those moved into Busan, Seoul appears to have attracted younger people than Busan. Figure 3-1 graphically demonstrates that model age of migrants into Seoul between 15~19 whereas it is 25~29 for Busan in-migrants. It is interesting to note that people in age group 60~64 outnumbered those in 40~50 among those who moved into Seoul or Busan. Many explanations can be offered for this preponderance of young people in 15~29 ages among migrants into metropolitan areas. Better oppotunities to invest in human capital and to obtain better returns from that investment among young in cities than in rural area, the rigidity of family life for the young in rural area, and the concentration of high schools and colleges as well as other cultural and recreational facilities in metropolitan areas are some of the more plausible explanations.

The above hypotheses are supported by Figure 3-2 which indicates that only those who moved from rural to urban areas have youthful age composition. In fact, for other migrants, that is, those who moved within urban area, or within rural area or from urban to rural area, have more or less even age distribution. This means that these migrants have proportionately more older people than nation's total population. It reveals that migration itself is not predominantly for the young but that only rural-urban migration is. This has an important implication for studying the relationship between migration and fertility. Does the act of moving itself or only (the contact with) urban life influence fertility rate of migrants in general?

If we compare the sex ratio for given age group of migrants with that of total population, female migrants outnumber male migrants 100 to 75 for the young adult age group of 15~19, whereas the sex ratio for the population as a whole for this age group is 107. (See Figure 3-3) For those in age group 25~34, male migrants outnumber female migrants by 135 to 100, whereas for the population as a whole in this age group, female outnumber males by 10 to 9.

Table 3-5. Age-Sex Distribution of In-Migrants into Metropolitan Areas: Korea, 1965~1970

Age	Male	Female	Total In-migrants	Nation's total population
Total[a]	100.0 (774,261)	100.0 (723,240)	100.0 (1,497,501)	100.0 (31,435,252)
0~4	excluded	excluded	excluded	13.7
5~9	9.8	9.0	9.4	14.4
10~14	9,0	10.5	9.7	14.0
15~19	15.6	21.0	18.2	9.8
20~24	23.0	19.0	21.2	8.0
25~29	15.2	13.8	14.5	7.0
30~34	11.3	8.5	10.0	7.0
35~39	6.5	5.2	5.2	5.0
40~44	3.6	3.2	3.4	4.7
45~49	2.3	2.5	2.4	4.1
50~54	1.4	2.0	1.7	3.3
55~59	1.0	1.9	1.4	2.7
60~64	0.7	1.5	1.1	2.1
65~69	0.3	0.9	0.6	1.4
70~74	0.2	0.6	0.4	1.0
75+	0.1	0.4	0.2	0.9
Median Age	23.4[b]	22.5[b]	23.0[b]	18.4[b]

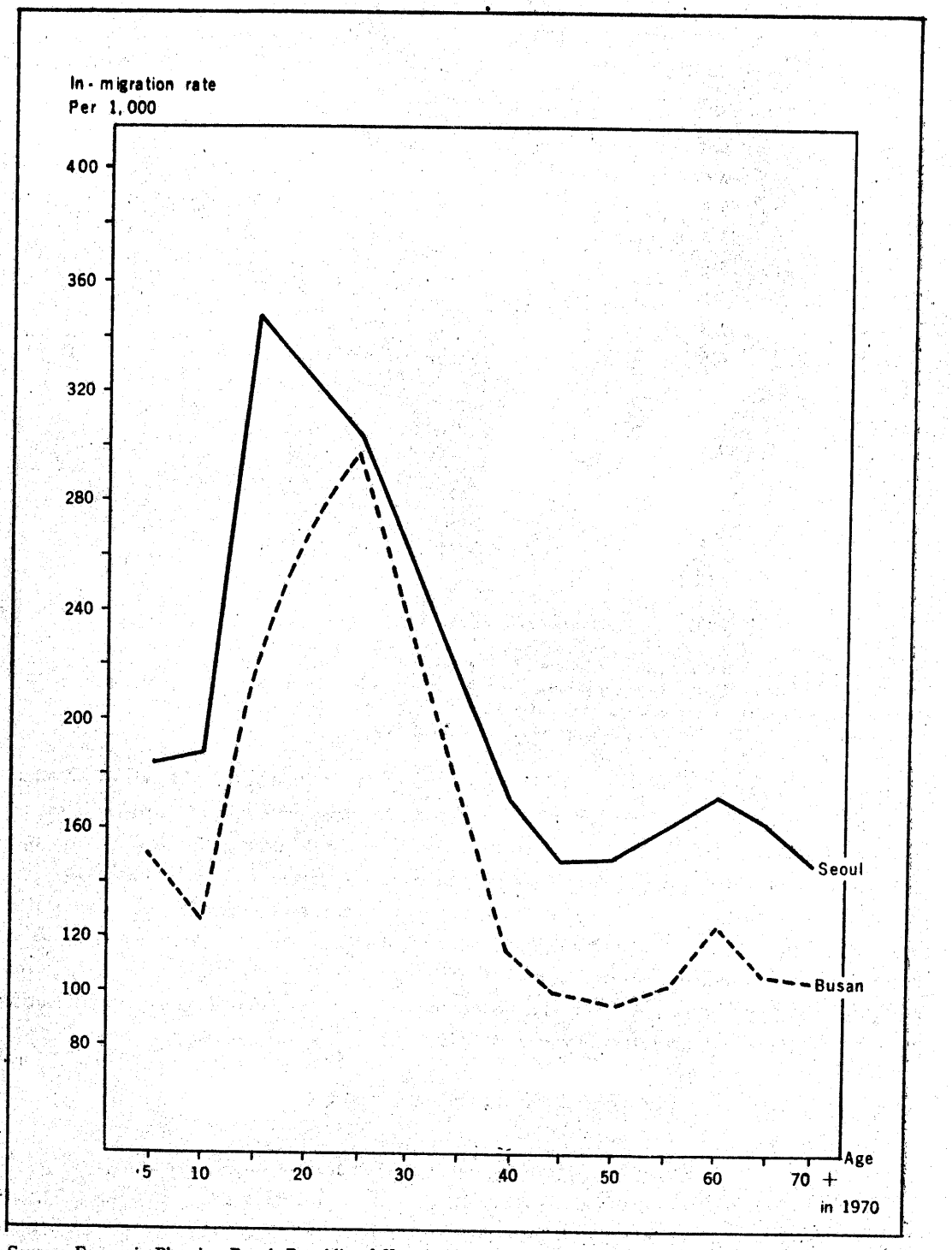
a) Ages 0~4 excluded for migrants are defined as those who moved durlng last five years.
b) Median age for migrants and total population are not comparable because the former excluded ages 0~4.
Source: *1970 Population and Housing Census Report.* Vol. 2, 4-3, "Internal Migration," Table 4, p.173; and Vol. 1, 12-1, "Complete Enumeration," Table 2, p.22.

This seems to indicate that girls move into cities before their marriages. During their child-bearing age following marriage, girls become less mobile than males. Note also the most common age difference at marriage in Korea is about five years. If single migrate more than married people, then, due to the age difference at marriage, males are likely to become less mobile five years after females do. For all ages group, females are slightly more mobile than males. Overall sex ratio is 1.008 for the population as a whole, whereas it is .976 for migrants. As age advance to middle age and beyond, the difference in the sex ratio between migrants and non-migrants increases. This indicates that females are more mobile than males during their early adult ages and after they reach middle ages.

C. SOCIO-ECONOMIC CHARACTERISTICS OF MIGRANTS

According to 1970 census, those who migrate into cities from rural areas are proportionately more educated than those who remain in rural areas. Table 3-6 shows that a greater proportion of those who moved into Seoul from rural areas have gone beyond primary school than those who remained in rural areas. The most significant difference between these two groups is the fact that 6.1 per cent of rural-urban migrants 15 years and over never attended any school, whereas for rural (non-migrants) residents, the proportion was 15.3 per cent. Among

Figure 3-1. Proportional Share of Migration into Seoul and Busan by Age



Source: Economic Planning Board, Republic of Korea. *1970 Population and Housing Census Report*. Vol. 2, 4-3, "Internal Migration," Table 4, p.172.
Formats of Figures 3-1 through 3-3 are borrowed from Wen Lang Li. "Research on Migration in Korea," Mimeographed, October, 1974.

Figure 3-2. Proportional Share of Migrants by Type and Age

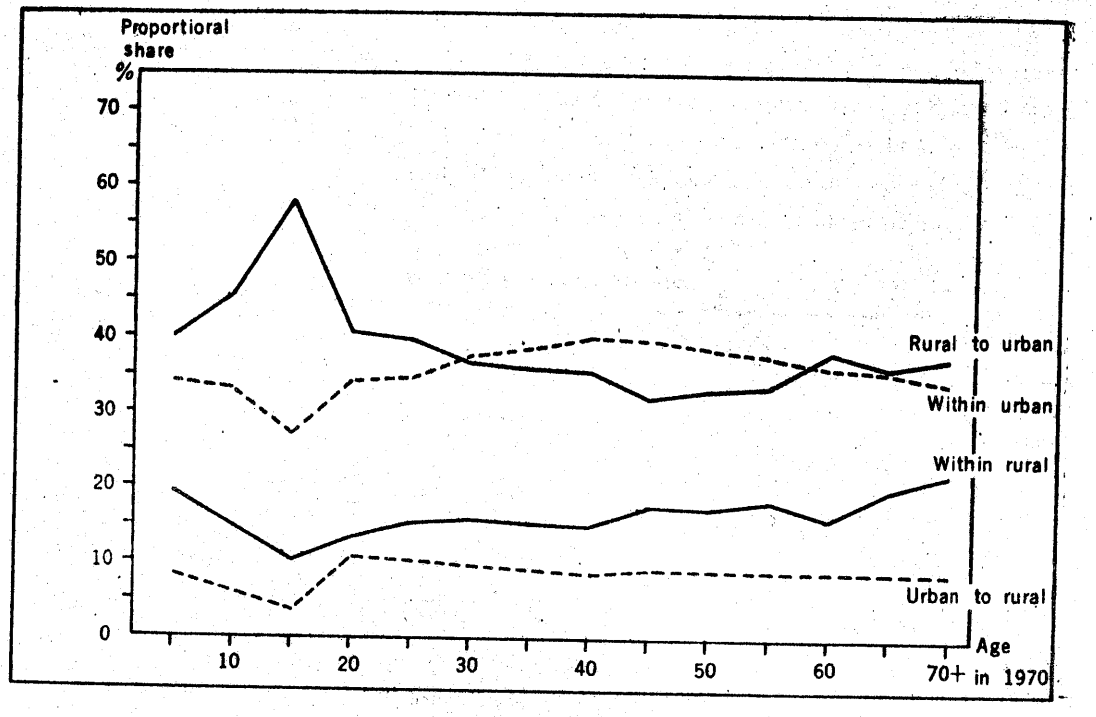


Figure 3-3. Sex Ratio by Age for Migrants(1965~1970) and for Total Population

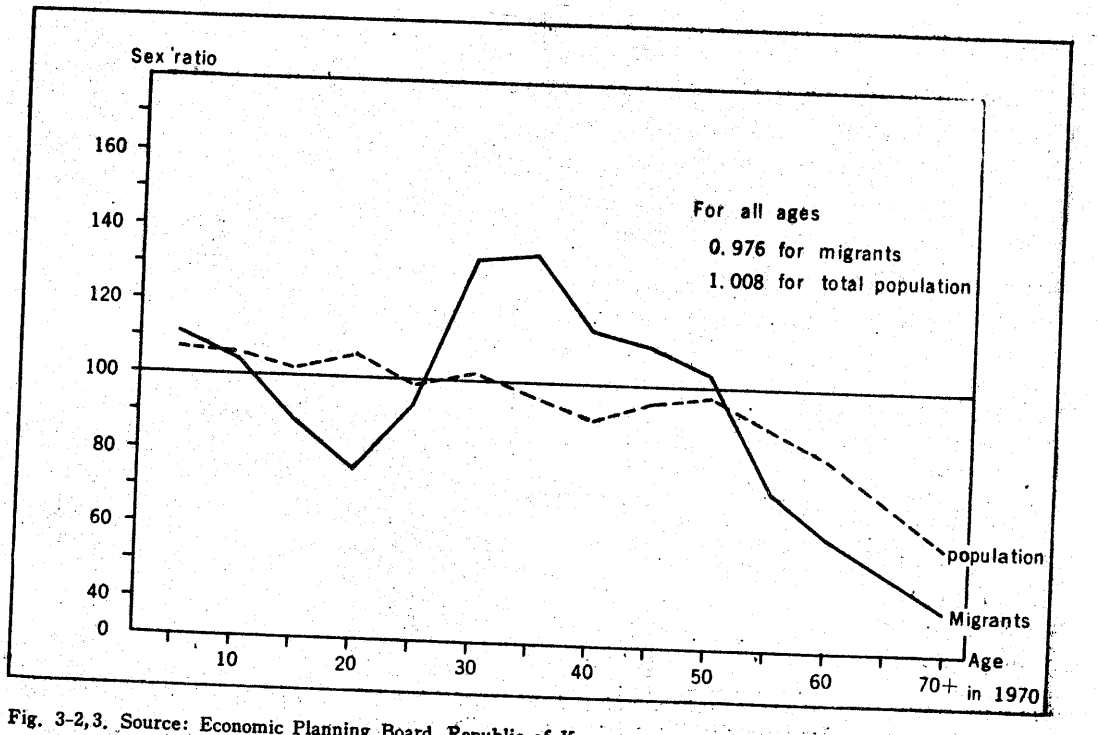


Fig. 3-2,3. Source: Economic Planning Board, Republic of Korea. *1970 Population and Housing Census Report.* Vol. 2, 4-3, "Internal Migration," Table 4, p. 172.

in-migrants into Seoul, a greater proportion of those who came from other smaller cities have gone beyond middle school than those who came from rural areas. As expected, Seoulites are far more educated proportionately than newcomers to Seoul. 18.9 per cent of Seoul residents of more than five years have gone beyond high school compared with 4.2 per cent of rural residents who went to college. This difference in the proportion of people who went to college is significant because those who stayed in Seoul more than five years presumably exclude those who came to Seoul to attend college and are currently attending one.

Table 3-6. Migration Status and Educational Attainment

Migration status educational attainment[b]	Seoul non-migrants	In-migrants into Seoul from Shis (cities) and Guns (rural areas)[a]	In-migrants into Seoul from r ural areas (guns)	Non-migrants residing in rural areas (guns)
Primary school	10.5%[c]	44.6%	48.8%	52.7%
Middle school	20.2	22.6	23.2	14.5
High school	21.9	16.4	14.5	10.3
College or more	18.9	8.4	5.1	4.2
No school	6.3	7.9	8.3	18.2
Under 15 years	1.9	2.1	2.2	2.9
15 years and over	4.4	5.8	6.1	15.3

a) Migrants means those who moved out of province between 1965 and 1970.
b) Each category includes those attending, graduated and attended but did not graduate.
c) Per cents in some columns do not add up to 100.0 due to rounding.
Source: Economic Planning Board, Republic of Korea. *1970 Population and Housing Census Report.* Vol.2, 4-3, "Internal Migration," Table 6, pp.202~205.

Another way of looking at the role of education in internal migration is to examine the difference in proportion of those who move out of province by educational attainment. According to 1970 census, the more one is educated, the more is he likely to move out of his province. Table 3-7 shows that as the educational attainment increases, the rate of migration increases monotonously. 36.6 per cent of those who went to college left the province of his residence between 1965 and 1970, whereas 91.8 per cent of those who never attended any school stayed in their province. Education appears to spark females to move more than males. Approximately one out of three females who went beyond primary school left their province of residence

Table 3-7. Migration Rate (per cent) 1965~1970, by Educational Attainment and Sex

Educational attainment[a]	Total	Male	Female
Never	8.2	7.2	8.8
Primary School	17.0	13.7	19.5
Middle School	27.0	22.8	32.8
High School	30.2	28.0	34.7
College over	36.6	35.9	39.3

a) Primary denotes those who are attending, graduated and attended but did not graduate primary school. The same is true for all other categories. Never denotes no schooling whatsoever.
Source: Economic Planning Board, Republic of Korea. *1970 Population and Housing Census Report.* Vol. 2, 4-2, Table 6, pp.200~205; and *Ibid.*, Vol. 1, 12-1, Table 2.

during the five-year period under survey. As pointed out before in this chapter, females in general have higher propensity to move and it appears that education enables them to accomplish the move.

If we compare the occupational distribution of in-migrants into Seoul from rural areas (guns) who moved during 1965~1970 with that of those who stayed in rural areas during the same period, the most significant difference between the two is to be observed in two occupational categories: agriculture, forestry and fishing; and laborers, manufacturing and transportation. 22.3 per cent of employed rural residents were engaged in agriculture and kindred occupations, whereas only 1.2 per cent of employed in-migrants into Seoul from rural areas were in the same occupations. (See Table 3-8) On the other hand, 33.6 per cent of employed rural residents

Table 3-8. Occupational and Employment Status of In-Migrants into Seoul: 1965~1970, and, of Non-Migrants

	Seoul non-migrants	In-migrants into Seoul from rural areas (guns)	Non-migrants residing in rural areas (guns)
Professional and technical	8.8%[a]	2.8%[a]	6.7%[a]
Administrative and managerial	4.2	0.7	0.6
Clerical	18.3	8.1	6.9
Sales	19.2	15.5	11.8
Service	12.1	22.3	13.1
Agricultural, forestry and fishing	0.9	1.2	22.3
Laborer, manufacturing and transportation	28.6	45.1	33.6
Non-classifiable	7.7	4.1	5.1
Unknown	0.3	0.2	0.1
Employed[b]	96.1	96.6	97.8
Unemployed	3.9	3.4	2.2
Economically active	49.1	59.5	54.8
Economically inactive	50.9	40.5	45.2

a) Totals may not add up to 100.0 due to rounding.
b) Employed out of economically active.
Source: Economic Planning Board, Republic of Korea. *1970 Population and Housing Census*, Vol. 2, 4-3, Table 5, pp.192~199.

were laborers or in the kindred occupations in manufacturing and transportation, whereas 45.1 per cent of their counterparts who migrated into Seoul had the same occupations. Proportionately more employed in-migrants in Seoul had semi-skilled jobs such as clerical, sales and administrative jobs than those who remained in rural areas. An exception is to be found in professional jobs--proportionately fewer in-migrants have professional jobs than those who remained in rural areas. This seems to indicate that proportionately a greater number of people who have attained professional status in rural areas remain there rather than seeking new opportunities in cities compare with those who have unskilled or semi-skilled jobs.

The difference in occupational distribution between in-migrants into Seoul and those who remained in rural area could be explained by the way people change their occupations as they move into the capital city. According to a study of 725 in-migrants into Seoul in 1968, the biggest change in occupation is recorded among those who changed to "service" occupation from

unskilled jobs which numbered 56. (See Table 3-9) Next three most numerous changes in occupation all occurred among those who move out of agriculture to service, unskilled labor and sales, which numbered 38, 36 and 31, respectively. 124 out of 162 people whose jobs had been in "service" found jobs in the same category of occupation. It has been said that rural-urban migration in developing countries can be explained by farmers becoming laborers in manufacturing industry. To a large extent, the above observation is correct for Korea because except a few, most farmers switched to unskilled or semi-skilled jobs in non-agricultural sector after having moved into Seoul.

Table 3-9. Changes in Occupation of 725 In-Migrants into Seoul after their Moves: 1968

After move	%	Number	Before move 0	1	2	3	4	5	6	7	8	9	UK
0	6.3	46	27	—	7	—	3	—	—	3	—	6	—
1	5.4	39	5	12	7	3	5	—	—	5	1	1	—
2	12.3	89	5	25	44	3	3	—	—	1	1	2	—
3	18.6	135	3	—	5	76	31	—	—	—	1	19	—
4	1.9	14	—	—	—	3	10	—	—	—	—	1	—
5	0.2	1	—	—	—	—	1	—	—	—	—	—	—
6	2.6	19	—	—	1	—	5	—	12	—	—	1	—
7	7.7	56	6	—	3	1	8	—	—	35	1	1	—
8	11.3	82	2	—	1	2	36	1	—	—	39	1	—
9	32.1	233	2	—	2	10	38	—	1	—	56	124	—
UK	1.5	11	—	—	—	—	1	—	—	—	3	6	1
Total	—	725	50	37	70	98	146	1	13	44	102	162	2
(%)	—	—	(6.9)	(5.1)	(9.7)	(13.5)	(20.1)	(0.2)	(1.8)	(6.1)	(14.1)	(22.3)	(0.3)

0 : Professional, technical
1 : Administrative
2 : Clerical
3 : Sales
4 : Farmer, forestry
5 : Miners
6 : Transport and communication
7 : Craftsman
8 : Unskilled workers
9 : Service
UK : Unknown

Source: Yoon, Jong-Joo. *Findings from a Survey of Fertility and Immigration of Seoul.* 1970. Seoul, Korea. Table 5-14, p.149.

Ⅳ. Relationship between Migration and Fertility Rate

A. SETTING OF THE ISSUE AND FRAMEWORK OF ANALYSIS

Migrants have lower fertility than nonmigrants. This proposition is supported by most analyses of U.S. and Canadian and Puertorican fertility.[7] When the effect of residence background

7) For example, see Kiser. 1963. pp.157~182, Grabill and Campbell. 1968. West-off, et al., 1961; Long. 1970. Macisco, Weller and Bouvier. 1971. pp. 285~297.

on fertility is considered, however, the above proposition has been found to need modifications.[8] The effect of socio-economic status on fertility and migration further muddles the hypothesized negative relationship between migration and fertility.[9] In this chapter we propose to estimate the fertility differential of migrants and nonmigrants in Korea, holding constant the effects of socio-economic factors and residence background on fertility.

What is the meaning of the "pure" effect on fertility of migration? An individual's decision to migrate reflects his perception of and willingness to exploit the labor market disequilibrium and the opportunity differentials in nonmarket activities between the area of his origin and that of his destination. As such, if the relevant socio-economic factors are held constant, the revealed relationship between migration and fertility behavior will be a reflection of the relationship between an individual's behavior pattern with respect to the investment and use of human capital and his utility function with respect to childbearing. Based on this hypothesis, we rely on the household production theory of fertility as the general framework of analysis.

Although household production theory of fertility has not been incorporated in the empirical part of our study in any meaningful way and we present here this theory to show the theoretical underpinning. According to the household producton theory, the household is seen as being engaged in production of utility. Thus, the family is viewed as making decision on the number of children and quality per child so as to maximize its ordinal utility indicator.

$$u=u(N, Q, S)^{10} \tag{1}$$

Where

N=number of children

Q=quality per child

S=all other sources of satisfaction

Assuming C to be the total amount of satisfaction the parents derive from children, let

$$C=N+Q \tag{2}$$

Then, C and S may be "produced" in our household production model by

$$C=F(x_c, t_c) \tag{3}$$

and

$$S=g(x_s, t_s) \tag{4}$$

where

F and g are homogeneous of degree one.[11]

8) Analyses of fertility data of Mexico, Chile and U.S.A. have found that rural-to-urban and rural-to-rural migrants have higher fertility than urban nonmigrants. (Zarate, 1967; Tabah and Samuel, 1962; Kantner and Whelpton, 1952) Other studies found that it is the degree of exposure to urban or rural environment rather than the place of birth or migration which influences fertility. (Kiser, 1938, and Goldberg, 1960) For a discussion of the relationship between residence background, migration and fertility, see Richey and Stokes, 1972.

9) There are too many studies to list about the relationships between socio-economic status and migration and between socio-economic status and fertility. For a survey article on the former relationship, see Easterlin, 1969. For some examples of studies of relationship between socio-economic factors and migration, see Green wood, 1968; Sjaastad, 1961; and Sahota, 1968.

10) This model is patterned after one by Willis, 1973, which is in the tradition of the theory of allocation of time by Becker, 1965, and Mincer, 1962; and Becker's Theory of Fertility, 1960. The family utility indicator is written in the tradition of a Bergson-Samuelson "Family Welfare Function." See Samuelson, 1956.

11) This assumption in the literature. However, it could be replaced by a member of the class of general production functions. See Zeellner and Revanker, 1969.

x_c and x_s are inputs of goods to children, and all other sources of satisfaction, S.

t_c and t_s are input of wife's time to children and S respectively.[12]

We impose the following constraints:

$$x = x_c + x_s \tag{5}$$

and

$$t = t_c + t_s \tag{6}$$

where

x=family's total input of goods to home production

t=wife's time available for home production

x and t are further subject to the following constraints:

$$Y = px = H + wL \tag{7}$$

and

$$T = t + L \tag{8}$$

where

Y=family's life time money income

px=Y expressed as an aggregate good, x, with price index, p.[13]

H=husband's lifetime income

w=wife's market wage rate

L=wife's time devoted to market activities

T=wife's life span after her marriage

The utility function (1) may be transformed into

$$u = u[F(x_c, t_c), g(x_s, t_s)] \tag{9}$$

Given our assumption about the nature of F and g, we know that for the rational family, x_c/x_s and t_c/t_s will be related to their relative costs, i.e.,

$x_c/x_s = Px_c/Px_s, t_c/t_s = Ptc/Pt_s$, etc., where P's denote shadow prices.

Within the framework of this theory of fertility, the basic hypothesis of this study is that migration is related to fertility because the ratio of the family's marginal utility of number of children, N, to that of quality per child, Q, is greater for migrants than for nonmigrants, e.g.,

$$\left(\frac{\partial U}{\partial Q} / \frac{\partial U}{\partial N}\right)_m > \left(\frac{\partial U}{\partial Q} / \frac{\partial U}{\partial N}\right)_n$$

where m denotes migrants and n nonmigrants.

Ceteris paribus, the act of migrating, means that the migrants possess a keener perception and stronger willingness than nonmigrants to maximize and utilize the value of human capital. Accordingly, the migrants have a propensity to invest more than nonmigrants in their children's human capital as well as in their own. This would mean that migrants prefer higher quality per child and a smaller number of children than nonmigrants. In terms of the indifference curve between the number of children, N, on the Y axis and child quality, Q, on the X axis, migrants have a steeper curve than nonmigrants.

The corollary hypothesis is that the migrants are more sensitive to the shadow price of time inputs to childbearing activities than to that of goods inputs to the same activities. The rationale

12) We are assuming that only the wife's time is productive at home.

13) It is assumed that the structure of relative prices remains fixed so that the Hicks composite commodity theorem may be used to justify treating goods inputs as an aggregate good, x, with a price index, p.

for this is that the act of migration indicates a higher propensity to exploit market opportunities. Given the migrant's preference for quality over quantity in childbearing and because higher quality per child indicates time-intensive childbearing, this sensitivity will be a reinforcing factor for expecting a smaller number of children for migrants than for nonmigrants.

B. DATA AND METHOD

Data used are one per cent sample of 1970 Korean census obtained from the Bureau of Statistics, Economic Planning Board, Republic of Korea. Census data include information on migration status classified by the place of residence at the time of census taking and five years before, educational attainment, occupation and industry as well as the usual demographic characteristics such as age, sex, marital status, family relation, etc.

The number of individuals included in the one per cent sample is 312,974. Because of unusable units for various reasons such as error in coding or key punching, unknowns and blanks, we have done a considerable amount of data editing. The edited data are divided into 6 groups: age group 16~20, 21~25, 26~30, 31~35, 36~40, and 41~45 for females only.

Data on each of these groups are, then, put on separate tapes. Data analyses performed are cross tabulations, correlation matrics and regressions. These are done with each of the six tapes separately.

C. RESULTS

First, we examine the difference in the number of children by migration status for each of six age groups of women who resided in urban areas (shi's) and rural areas (gun's) in 1970. As presented Table 4-1, for all age groups and regardless of the place of residence, the distribution of women by the number of children ever born shows that migrants have fewer number of children than nonmigrants. As expected, nonmigrants residing in rural areas have the greatest number of children for all age groups. It is interesting to note that the difference in the number of children is small among migrants regardless of the place of residence and age group. The relative proportion of migrants and nonmigrants confirm our earlier observation of characteristics of migrants and nonmigrants in Chapter III. Proportionately a greater number of younger age groups are migrants than older age groups, regardless of current place of residence, and a greater proportion of urban dwellers are migrants than rural residents. Note that among rural women who belong to age group 36~40, only about four per cents are migrants, whereas about 45 per cent of young females (16~20) residing in urban areas are migrants.

Next, we examine the difference in the number of children by migration status classified not only by the current place of residence but also by the place of residence five years ago. As expected, residents of Seoul have fewer number of children than rural (myon) residents for all age groups. (See Table 4-2) Migrants who moved from a rural area (gun) to another rural area have fewer number of children than rural residents (of myon) in general. Those who moved from a city to another also have fewer number of children than residents of Seoul for

all age groups. Thus, the generally-held hypothesis about the association between the place of residence and fertility rate and also about that between migration and fertility rate is supported by our data.

Table 4-1. (Per Cent) Distribution of Women by the Number of Children Ever Born by Migration Status, Place of Residence and Age Group

Age	Place of residence	Migration status[d]	Number of children ever born											Relative proportion of migrants & nonmigrants[b]
			0	1	2	3	4	5	6	7	8	9 & Over	Unknown	
			%	%	%	%	%[c]							
16~20	All	Migrants	37.0	46.6	14.3	1.8	0.3	—	—	—	—	—	Omitted[a]	32.5
	Nation	Nonmigrants	26.9	44.0	22.9	5.1	0.7	0.3	—	—	—	—	〃	67.5
	Shi's	Migrants	37.8	45.0	15.0	1.9	0.3	—	—	—	—	—	〃	45.2
	(Urban)	Nonmigrants	31.5	43.6	21.2	2.9	0.6	0.1	—	—	—	—	〃	54.7
	Gun's	Migrants	35.3	50.0	12.7	1.7	0.3	—	—	—	—	—	〃	17.3
	(Rural)	Nonmigrants	24.2	44.3	23.8	6.2	0.8	0.3	—	—	—	—	〃	82.6
21~25	All	Migrants	12.8	29.4	29.5	14.1	3.8	0.5	0.2	—	—	—	9.7	30.7
	Nation	Nonmigrants	6.5	17.6	30.0	25.0	9.5	1.6	0.3	—	—	—	9.5	69.3
	Shi's	Migrants	12.8	29.2	29.3	14.1	2.9	0.2	0.2	—	—	—	11.2	43.2
	(Urban)	Nonmigrants	8.8	22.4	30.1	17.0	5.2	0.6	0.2	—	—	—	15.7	56.7
	Gun's	Migrants	12.8	29.9	30.1	14.2	6.3	1.2	0.1	0.1	—	—	5.3	16.4
	(Rural)	Nonmigrants	4.8	14.1	29.9	30.9	12.6	2.4	0.3	0.0	—	—	5.0	83.6
26~30	All	Migrants	5.6	11.8	21.8	30.9	20.1	6.0	1.1	0.2	0.0	—	2.4	20.3
	Nation	Nonmigrants	2.7	5.4	13.5	28.9	28.3	15.1	4.0	0.7	0.1	0.1	1.1	79.7
	Shi's	Migrants	5.7	12.0	22.3	31.5	18.8	5.7	1.0	0.2	—	—	2.8	32.8
	(Urban)	Nonmigrants	4.2	8.3	19.0	33.1	23.2	8.0	1.9	0.1	0.1	0.1	2.0	67.1
	Gun's	Migrants	5.2	11.6	20.5	29.2	23.7	6.9	1.4	0.2	0.2	—	1.2	9.9
	(Rural)	Nonmigrants	1.7	3.5	10.2	26.3	31.5	19.5	5.3	1.1	0.1	0.1	0.6	90.1
31~35	All	Migrants	3.9	8.3	12.8	21.2	24.8	17.9	7.6	2.4	0.4	0.3	0.5	15.0
	Nation	Nonmigrants	2.0	4.7	6.6	15.1	26.7	25.1	13.4	4.8	1.0	0.3	0.3	85.0
	Shi's	Migrants	4.0	8.2	13.2	22.8	24.3	17.9	6.5	1.8	0.4	0.4	0.7	26.6
	(Urban)	Nonmigrants	2.8	7.1	9.9	21.9	28.3	19.6	7.1	2.4	0.3	0.1	0.6	73.3
	Gun's	Migrants	3.6	8.8	11.5	16.1	26.4	17.9	11.2	4.2	0.3	—	0.0	6.3
	(Rural)	Nonmigrants	1.6	3.2	4.6	11.1	25.7	28.4	17.1	6.3	1.5	0.4	0.1	93.7
36~40[e]	All	Migrants	3.9	8.3	12.8	21.2	24.8	17.9	7.6	2.4	0.4	0.3	0.5	9.2
	Nation	Nonmigrants	2.0	4.7	6.6	15.1	26.7	25.1	13.4	4.8	1.0	0.3	0.3	90.7
	Shi's	Migrants	4.0	8.2	13.2	22.8	24.3	17.9	6.5	1.8	0.4	0.4	0.7	18.7
	(Urban)	Nonmigrants	2.8	7.1	9.9	21.9	28.3	19.6	7.1	2.4	0.3	0.1	0.6	81.3
	Gun's	Migrants	3.6	8.8	11.5	16.1	26.4	17.9	11.2	4.2	0.3	—	0.0	3.9
	(Rural)	Nonmigrants	1.6	3.2	4.6	11.1	25.7	28.4	17.1	6.3	1.5	0.4	0.1	96.0

a) Unknowns for age group 16~20 are omitted from calculation.
b) Column per cents usually add up to less than 100.0% because of unknowns.
c) Per cents do not add up to 100.0 due to rounding.
d) Migrants and nonmigrants are so classified by their residence of 5 years ago.
e) Age group below 16 and above 40 omitted since they do not offer much additional information.
Source: 1% sample(tape) of 1970 census obtained from Bureau of Statistics, Economic Planning Board, Republic of Korea.

Table 4-2. Percenctage Distribution of Number of Women by Number of Children Ever Born for Place of Residence and Migration Status

Age of women	Places of residence and migration status	Number of children ever born									
		0	1	2	3	4	5	6	7	8	9+
15~24	Myons[a]	29.2	41.3	22.1	6.0	1.0	0.3[b]		None		
	Seoul	36.6	44.1	15.4	2.9	0.5	0.2		None		
	Guns→Seoul	39.0	45.0	13.5	2.0	0.4	0.1				
	Guns→Guns	36.5	45.8	14.5	2.6	0.5	0.1				
	Shis→Shis	41.5	43.6	12.8	1.7	0.2	0.2				
25~29	Myons	5.6	15.1	29.5	30.2	14.6	4.0	0.8	0.2	None	
	Seoul	13.3	30.3	32.8	17.7	4.4	1.1	0.1	0.0	None	
	Guns→Seoul	14.3	31.1	32.3	16.9	4.0	0.3	0.2	0.0	None	
	Guns→Guns	12.1	27.0	30.6	20.3	7.7	1.7	0.3	0.1		
	Shis→Shis	17.0	34.1	30.6	14.2	3.2	0.7	0.1			
30~34	Myons	1.8	3.3	8.2	21.4	30.1	22.4	9.2	2.6	0.7	0.1
	Seoul	4.5	10.1	21.8	32.8	20.6	7.4	1.9	0.5	0.1	0.1
	Guns→Seoul	4.5	9.7	19.5	30.4	23.6	8.4	2.8	0.8	0.0	0.0
	Guns→Guns	4.1	7.4	15.4	27.7	25.6	13.9	4.2	1.2	0.4	0.1
	Shis→Shis	6.4	13.0	22.0	32.6	17.4	6.2	1.8	0.4	0.1	0.1
35~39	Myons[a]	1.4	2.8	4.1	8.1	18.3	25.2	21.6	11.5	4.8	2.1
	Seoul	2.9	6.2	12.2	24.2	26.1	17.2	7.1	2.8	0.8	0.4
	Guns→Seoul	3.3	6.1	9.8	18.5	25.6	20.4	9.9	4.4	1.5	0.6
	Guns→Guns	2.8	7.6	8.2	13.0	19.7	21.1	15.5	7.7	2.8	1.4
	Shis→Shis	4.7	8.3	13.9	27.0	23.9	16.9	6.0	2.8	1.0	0.2
40~44	Myons	1.4	3.0	4.6	6.3	10.2	16.3	19.8	17.4	11.7	9.3
	Seoul	2.3	6.4	10.0	15.1	20.3	19.9	13.6	1.0	3.2	2.2
	Guns→Seoul	3.2	7.0	10.8	11.0	17.6	16.1	15.2	9.5	6.0	2.5
	Guns→Guns	2.5	6.0	7.8	8.6	11.7	16.6	15.3	15.0	9.2	7.4
	Shis→Shis	3.6	7.8	11.2	16.5	16.5	18.3	13.6	7.4	3.4	0.8

a) Guns are comparable to counties in the U.S.A., but shis (cities) are given status of guns. Guns are all rural except that guns can be further divided into eups (towns) and myons. Therefore, myons and guns are not strictly comparable. Shis exclude Seoul and Busan, which are given special status of metropolitan cities and administratively treated as provinces.

b) Per cents do not add up to 100.0 because of rounding and "unknowns" which are not presented here.

Source: Economic Planning Board. *1970 Population and Housing Report*, Vol. 2, 10% Samply, 4-2 Fertility and 4-3, Internal Migration.

How would the fertility rate of those who moved from rural area to urban area be compared with that of residents of urban area? On the basis of the hypothesis about the association between residence background and fertility rate, urban rural-urban migrants are expected to have higher fertility rate than urban residents. However, on the basis of the association between migration and fertility rate alone, the latter group is expected to have higher fertility rate than the former group. Our dataa ppears to give a neat answer. Among young women (15~29) who are expected to have received less influence from residence background on their behavior pattern than older people age group, rural-urban migrants have fewer number of children than residents of Seoul. On the other hand, among older age group (30~44 ages) residence background

Table 4-3. Distribution of Women by the Number of Children Ever Born by Age Group, Migration Status and Educational Attainment

Ages	Educational attainment	Migration status	Number of children ever born[a] 0	1	2	3	4	5	6	7	8	9 & over	Unknown	Relative proportion of migrants vs. nonmigrants[b]
16~20	No school at all	Migrants	33.9	44.6	13.8	6.2	1.5	—	—	—	—	—	Omitted	24.8
		Nonmigrants	13.3	37.6	37.2	9.7	1.3	0.9	—	—	—	—	from	75.2
	Primary school	Migrants	32.7	46.8	17.8	2.4	0.3	—	—	—	—	—	Calcula-	28.5
		Nonmigrants	25.3	44.3	23.6	5.7	0.8	0.2	—	—	—	—	tion for	71.5
	Middle sch. (7~9 gr.)	Migrants	42.5	45.1	11.3	0.8	0.4	—	—	—	—	—	Age group	40.1
		Nonmigrants	32.1	46.2	19.2	1.8	0.7	—	—	—	—	—	16	59.9
	High school (11~12 gr.)	Migrants	41.0	50.5	8.1	0.4	—	—	—	—	—	—	to	34.0
		Nonmigrants	37.7	47.1	13.9	1.2	—	—	—	—	—	—	20	65.9
21~25	No school at all	Migrants	11.5	22.1	24.4	20.6	10.7	0.8	1.5	—	—	—	8.4	14.4
		Nonmigrants	3.5	11.6	24.9	32.6	19.0	3.7	0.9	0.1	—	—	3.7	85.6
	Primary	Migrants	11.7	24.9	32.7	18.3	5.2	0.6	0.2	0.1	—	—	6.3	24.8
		Nonmigrants	5.3	15.9	32.1	29.3	10.6	1.8	0.2	0	—	—	4.8	75.2
	Middle	Migrants	12.8	31.9	31.2	11.6	2.5	0.5	—	—	—	—	9.4	40.2
		Nonmigrants	9.2	22.7	31.3	16.7	4.7	0.7	0.2	0.1	—	—	14.4	59.8
	High	Migrants	12.8	36.6	24.3	8.7	1.0	0.5	—	—	—	—	15.9	44.1
		Nonmigrants	9.7	24.7	25.9	11.5	2.0	0.3	—	—	—	—	25.9	55.9
	College[c]	Migrants	22.4	40.0	19.4	6.1	0.6	—	—	—	—	—	11.5	46.0
		Nonmigrants	16.5	21.1	17.0	8.8	2.1	—	—	—	—	—	34.5	54.0
26~30	No school at all	Migrants	7.6	12.7	15.9	15.9	26.8	14.6	2.5	0.6	—	—	3.2	9.2
		Nonmigrants	1.9	3.6	9.4	22.4	31.5	22.1	7.0	1.2	0.3	0.1	0.5	90.7
	Primary	Migrants	5.6	10.0	18.6	32.9	22.6	7.4	1.4	0.3	—	—	1.2	17.1
		Nonmigrants	2.6	4.6	12.3	28.8	30.6	16.0	3.8	0.7	0.1	0.1	0.6	82.9
	Middle	Migrants	2.9	12.3	23.0	34.1	20.8	3.4	1.0	—	0.2	—	2.2	30.7
		Nonmigrants	3.4	8.2	19.5	36.2	21.7	7.4	1.6	0.1	—	—	1.8	69.2
	High	Migrants	6.4	13.4	27.7	32.9	12.2	2.0	0.3	—	—	—	5.0	40.4
		Nonmigrants	4.4	10.1	23.4	36.8	14.9	4.6	1.0	0.2	0.2	0.2	4.4	59.6
	College[c]	Migrants	7.8	20.8	36.4	20.8	7.8	1.3	—	—	—	—	5.2	39.7
		Nonmigrants	6.0	17.1	27.4	33.3	10.3	0.9	—	—	—	—	5.1	60.3
31~35	No school at all	Migrants	4.5	10.4	10.0	15.9	21.9	17.4	11.9	5.0	1.0	1.0	1.0	7.7
		Nonmigrants	2.1	4.2	5.4	10.4	23.3	27.5	16.9	7.7	1.9	0.6	0.1	92.3
	Primary	Migrants	4.4	8.9	10.9	16.8	26.1	20.6	8.9	2.9	0.3	0.2	—	14.1
		Nonmigrants	1.9	4.0	5.8	14.9	28.1	26.5	13.4	4.2	0.8	0.3	0.2	85.9
	Middle	Migrants	2.2	5.3	17.3	26.2	25.8	16.4	5.3	0.9	0.4	—	—	25.8
		Nonmigrants	2.0	7.4	9.3	23.5	28.3	19.5	7.1	1.7	0.5	—	0.6	74.2
	High	Migrants	2.6	7.1	14.3	33.2	24.0	12.2	4.6	0.5	—	0.5	1.0	31.7
		Nonmigrants	1.9	7.3	14.4	27.4	30.5	11.8	4.5	1.2	0.2	—	0.7	68.3

a) Per cents sometimes do not add up to 100.0 due to rounding.
b) Column per cents sometimes add up to less than 100.0 because unknowns are excluded.
c) College graduates except for age groups 21~25 and 26~30 are excluded because they are too few for meaningful computations.
Source: 1% sample(tape) of 1970 Korean Census obtained from Bureau of Statistics, Economic Planning Board, Republic of Korea.

appears to have exerted a stronger influence than migration, that is, residents of Seoul have fewer children than rural-urban migrants. In the absence of data on age-specific fertility rate, this observation has to be modified to the extent to which the fact that greater number of children among older age groups rural-urban migrants have than residents of Seoul reflects the fact that rural-urban migrants might already have had a greater number of children than

Seoul residents before their moves.

It is hypothesized that women with higher educational attainment are more likely to move than those with less education, and our census data supports this hypothesis. For all age groups, a greater proportion of women with more schooling moved than those with less education with two exceptions. Exceptions are observed for age group 16~20 where a greater portion of middle school graduates migrated than high school graduates, and for age group 21~25 where a greater portion of high school graduates migrated than those with college degrees. (See Table 4-3)

On the basis of the household production theory of fertilty, it is expected that women with higher education would have fewer number of children than those with less education. This is because more education means higher efficiency in the household production of utility (small u in equation 1) and also because those with higher education earn higher wages (small u in equation 7) indicating that they have higher cost of time and, therefore, higher unit cost of time input to raising children (tc in equation 3) than those with less education. This hypothesis is supported by our data. Table 4-3 shows that migrants with higher education have fewer children than migrants with less schooling for all age groups and that this holds true for nonmigrants also. What is remarkable in what is shown in Table 4-3 is the difference in the number of children between migrants and nonmigrants. For all education levels and for all age groups, those who moved during the last five years (1965~1970) have much fewer children than those who did not during the same period. This seems to clarify one significant point. The idea that migrants have fewer children than nonmigrants because the former have more education than the latter is refuted so far as the cross tabulation of our data shows.

To test another often-held hypothesis that migrants have fewer children than nonmigrants because a greater portion of migrants are employed or economically active than nonmigrants, the cross tablation (as presented in Table 4-4) has been run. So far as this cross tabulation of our data shows, the above hypothesis is not valid for two reasons. First, given economic activity, migrants have fewer children than nonmigrants. This is to say that, for all age groups, economically active migrants have fewer children than economically active nonmigrants, and that the same holds true for economically inactive women. Second, for all age groups, a smaller proportion of economically active women are migrants than economically inactive ones.

This is a very interesting finding because, according to the human capital theory of migration, the principal cause of migration is migrants' desire to exploit wage differentials between urban and rural area. Our finding that a greater proportion of women who are currently economically inactive move than economically active ones does not necessarily refute the human capital theory of migration. Rather, we are inclined to interpret this as the result of the fact that a greater proportion of migrant women's husbands are economically active and thereby reduce the necessity for wives to find jobs or that of the fact that a greater proportion of migrants, in particular, of young women migrants (16~20 ages) are seeking jobs but have been successful in getting them than nonmigrants.

What would be the effect of economic activity of women on the number of children they have? According to the household production theory of fertility, the more a wife devotes her time to market activities, i.e., the greater L, fewer the number of children (N) she has.

Interestingly, Table 4-4 shows that this theory is supported only for migrants. Economically active migrant women have fewer children than economically inactive migrant women for all age groups (Age group 21~25 appears to be an exception, but this is an illusion created

Table 4-4. Distribution of Women by the Number of Children Ever Born for Given Age Group and Economic Activity

Age	Economic activity[a]	Migration status[b]	Number of children											Relative proportion of migrants and nonmigrants
			0	1	2	3	4	5	6	7	8	9	Unknown	
16~20	Active	Migrants	43.5	43.5	10.0	2.5	0.6	—	—	—	—	—	Omitted	30.6
		Nonmigrants	24.2	41.8	26.0	6.8	0.8	0.3	—	—	—	—	—	69.4
	Inactive	Migrants	35.7	47.2	15.1	1.7	0.2	—	—	—	—	—	Omitted	34.0
		Nonmigrants	28.3	45.2	21.3	4.2	0.7	0.2	—	—	—	—	—	66.0
21~25	Active	Migrants	12.4	20.7	20.5	9.5	4.0	0.8	0.2	0.2	—	—	31.9	19.3
		Nonmigrants	4.9	14.2	26.7	26.1	11.6	2.4	0.2	0.0	—	—	13.8	80.7
	Inactive	Migrants	13.0	31.6	31.8	15.3	3.7	0.4	0.2	—	—	—	4.1	35.5
		Nonmigrants	7.4	19.6	31.9	24.4	8.2	1.1	0.3	0.0	—	—	7.1	64.5
26~30	Active	Migrants	9.3	15.3	23.3	20.8	14.7	7.4	1.6	0.2	—	—	7.4	11.8
		Nonmigrants	2.5	5.1	10.7	24.9	30.0	18.9	5.2	1.2	0.1	0.0	1.4	88.2
	Inactive	Migrants	4.6	10.9	21.4	33.7	21.6	5.6	1.0	0.2	0.1	—	1.0	25.0
		Nonmigrants	2.8	5.5	15.4	31.6	27.2	12.6	3.2	0.5	0.1	0.1	1.0	75.0
31~35	Active	Migrants	7.0	12.7	13.8	19.2	22.1	15.1	6.8	2.3	2.5	—	0.5	9.7
		Nonmigrants	2.3	4.3	5.8	11.9	24.8	26.7	15.9	6.4	1.3	0.3	0.2	90.3
	Inactive	Migrants	2.7	6.6	12.4	22.0	25.9	18.9	7.9	2.4	0.3	0.4	0.5	18.9
		Nonmigrants	1.8	4.9	7.2	17.8	28.2	23.8	11.3	3.5	0.8	0.4	0.3	81.1
36~40	Active	Migrants	6.2	14.2	14.6	13.1	16.9	16.5	9.6	6.2	1.5	0.4	0.8	7.5
		Nonmigrants	1.7	5.4	7.6	10.2	16.9	20.5	20.2	11.9	4.1	1.5	—	92.5
	Inactive	Migrants	3.0	8.4	11.5	15.4	18.9	21.8	12.8	5.2	1.5	1.2	0.2	15.0
		Nonmigrants	1.9	5.1	7.5	11.8	19.5	23.4	17.3	8.8	3.8	0.6	0.2	85.0

a) Active or inactive in "economic activity" is defined by the answer to question: "Did you do any work for pay at all during last week?"

b) Migration status is determined by the place of residence five years ago.

Source: 1% sample (tad) of 1970 census obtained from Bureau of Statistics, Economic Planning Board, Repulic of Korea.

by the unusually large number of women with "unknown" number of children). However, among nonmigrants, economically inactive women have fewer children than economically active ones for all age groups.

In order to examine the effect of migration status on fertility with other factors held constant, six multiple regressions are run with six different samples separately. Six samples are women of six age groups—16~20, 21~25, 26~30, 31~35, 36~40 and 41~45. "Other" factors which are hypothesized to influence fertility and held constant by inserting into regressions as conrol variables are the place of residence, literacy, educational attainment (schooling), type of work, occupation and industry in which one has her job. These variables are chosen because they are expected to be those factors theorized to influence directly or indirectly the number of children

within the framework of analysis represented by the household production theory of fertility. For example, mother's educational attainment is expected to influence fertility by influencing wife's market wage rate w in equation (7) and the shadow price of input of wife's time to children t_c in equations (3) and (9).

Rather than presenting results of all six regressions, we present the result of regression run with the sample of 8529 women of 26~30 ages. This age group is chosen because it is crucial age group in studying the effect on fertility of whether one has moved out of her province or not during the last five years. Also, the result of regression with data on this group has provided better insight than regressions with other sample data.

Since all independent variables inserted into regressions are categorical variables, they are converted into dummy variables (1 or 0). Table 4-5 shows the result in a tabular form. As theorized and supported by our previous cross-tabulations, migrants have significantly fewer children than nonmigrants (significant at .01 level as determined by t-ratio). In terms of its contribution to R^2, migration status is the second most important variable (with R^2 of .016 in incremental contribution). (See Table 4-6)

Residence background in terms of whether the respondent resides in shi (cities) or gun (rural area) is the most important variable in influencing the number of children the woman has (R^2=.073 in Table 4-6). As expected from theories and previous studies cited in the beginning of this chapter, women living in cities have fewer children than those in rural area and the

Table 4-5. Multiple Regression of Migration Status and Others on the Number of Children
Dependent Variable=Number of Children Ever Born
Sample=8529 Women Aged 26~30

Independent variables		b-co-efficients	Standard error	
Migration status	Migrant	−0.349*	0.038	84.61
	Nonmigrant	—		
Place of residence	Shi (urban)	−0.375*	0.035	115.03
	Gun (rural)	—		
Literacy	Can read	−0.350*	0.025	195.48
	Cannot read	—		
Educational attainment	Primary school	0.536*	0.053	102.8
	Middle school	0.195*	0.062	10.03
	College	−0.449*	0.115	15.23
	High school	—	—	—
Type of work	Self-employed	−0.236*	0.078	9.14
	Regular worker	−0.570*	0.143	15.96
	Others	—	—	—
Occupation	Unskilled labor in manufacturing	0.274*	0.040	46.85
	Others	—	—	—
Industry	Commerce (vending)	0.249*	0.077	10.52
	Others	—	—	—

Constant (a) 4.401 R square 0.134
Multiple R 0.366 Standard error 1.337
* : Significant at .01 level

difference is statistically significant (t ratio>3).

Table 4-6. Multiple Regression Summary Table

	Multiple R	R square	RSQ change	Simple R
City residents	0.26963	0.07270	0.07270	−0.26963
Migrants	0.29794	0.08877	0.01607	−0.19700
Can read	0.32079	0.10291	0.01414	−0.18842
Primary school	0.34911	0.12188	0.01897	0.08498
Unskilled labor in manufacturing	0.35474	0.12584	0.00396	0.22206
College graduate	0.35975	0.12942	0.00358	−0.12989
Regular worker	0.36217	0.13117	0.00175	−0.08320
Middle school	0.36367	0.13225	0.00108	−0.12929
Vending business	0.36436	0.13276	0.00051	0.00217
Self-employed	0.36564	0.13369	0.00093	0.00555

The third important variable in influencing the number of children one has is whether the woman is literate or not. As expected, those who can read have (statistically) significantly fewer children than those who cannot read. This finding acquires an added significance in that the effect of schooling on the number of children is held constant by inserting educational attainment into regression as one of other control variables.

As shown in Table 4-5, graduates of primary and middle schools have a greater number of children than high school graduates, and college graduates have fewer children than high school graduates (Dummy variable representing high school graduates is not inserted into regression so that b co-efficients of other category of schooling denote the difference in its effect on the dependent variable from that of high school graduates). Note that differences are statistically significant at .01 level.

Regular workers (meaning those who are employed in steady fulltime jobs) and those who work for themselves (self-employed) have fewer children than others, most of whom are housewives. According to the household production theory of fertility, this variables expected to have an important, if not the most important, effect on the number of children one has; for, this determines the market value of wage rate w in equation (7) as well as (the shadow price of) wife's time input to children, tc. According to our regression analysis, this is relatively unimportant variable in terms of its contribution to R^2 (See Table 4-6). This may be due to cross-correlation of this variable with other explanatory variables such as educational attainment and occupation.

The variable representing occupation of the respondent is divided into 10 categories originally. However, such a fine delineation turns out to be difficult to maintain in this kind of multiple regression with dummy variables (Computer simply does not insert all the dummy variables in stepwise regression). Therefore, for convenience, we divided occupation into two categories only: unskilled manufacturing jobs and all others, generally more skilled. The result shows that unskilled women workers in factories have a greater number of children than those who have more skilled jobs. This observation is valid only to the extent to which we are justified

in considering "others" categories as consisting of more skilled jobs.

The industry in which the respondent is employed is also divided into two categories only. Most numerous jobs held by women are vending various merchandises, classified here as "commerce." Women in vending businesses have a greater number of children than those in other rarer jobs, presumably involving more skills and paying better wages.

With all these 10 variables inserted, however R^2 is only 0.134. Since micro data usually have smaller R^2 than macro data, which have no noise problem, R^2 of 0.134 is not unusally small considering the fact that sample number is 8529. The analysis of variance below indicates this regression has respectable and statistically significant F value of 131.5.

Analysis of variance	DF	Sum of Squares	Mean Square	F
Regression	10	2352.75889	235.27589	131.46
Residual	8519	15245.81789	1.78963	

Summing up what Table 4-5 reveals, even when various factors hypothesized to affect fertility are held constant, migration status exerts a strong influence on the number of children a woman has. A woman's residence background, educational attainment, class of work, occupation, etc., all have varying degrees of association with her fertility and her migration status. What is significant is the fact that migration status, although it is associated with all these variables, exerts a strong influence on fertility, not because it is associate with these variables, but independently of itself.

V. Conclusions and their Policy Implications

Even when various factors hypothesized to affect fertility are held constant, migration status exerts a strcng influence on the number of children a woman has. A woman's residence background, educational attainment, type of work, occupation, etc., all have varying degrees of association with her fertility and her migration status. What is significant is the finding that migration status, although it is associated with all these variables, exerts a strong influence on fertiliity, not because it is associated with these variables, but independently of itself.

What are the policy implications of this finding? Should government and other agencies encourage internal migration as an effective means of reducing the fertility rate? The Republic of Korea has set the target rate of population growth at 1.6 per cent per annum by 1981 as an integral part of its Fourth Five-Year Plan for 1977~1981. At present, the Korea government's policy is also to discourage migration to Seoul and to encourage dispersion and diversification of industry. Are the policies of reducing the rate of population growth and of discouraging migration to the big cities in conflict?

There is some degree of conflict if we interpret the results of our study as indicating that the act of migrating itself has significant effects on the fertility rate of migrants. However, if it is the distinctive attitude and motivation of migrants and not the act of migration which brought about the lower fertility rate among migrauts than among non-migrants of the same socio-economic cohorts, then these policies are not in conflict. We tend to interpret our findings

in the latter way.

On the other hand, the fact that rural-urban and urban-urban migrants have a lower fertility rate than rural-rural migrants seems to indicate that given the same attitude and motivation, the exposure to urban life gives an incentive to reduce the number of children one has. Therefore, to the extent to which the policy of discouraging migration to Seoul and other big cities reduces the chance of the population to be exposed to urban life, there is some degree of conflict of policies, even according to our interpretation of the results of this study.

If urbanization and the expcsure to urban life have an effect of reducing the fertility rate, as indicated by our study, should the Republic of Korea adopt a policy of accelerating the pace of urbanization rather than discouraging it? (Expcsure to) urban life is neither a necessary nor a sufficient ingredient of a lower fertility rate. What is needed is an integration and coordination of policies on migration, urbanization, population growth and economic development. The overall goal of reducing the rate of population growth to accelerate economic develcpment and the quality of life should take into account the problems created by rapid urbanization resulting improve from the massive migration of population into Secul and other big cities, such as overcrowded housing, congestion, pollution, strain on educational and health care facilities, etc. The recent movement of population within Korea has an effect on, and is a cause of, the recent growth rate of the nation's population and its per capita GNP.

As we interpret the results, the principle policy implication of our study is that one should strive to create and foster and enviroment which encourages the kind of attitude and motivation possessed by migrants. To augment such an effort, an elaborate social and economic system of implicit and explicit rewards and punishments should be established giving incentives for families to have fewer children. Associations revealed in our study between sccio-economic variables and fertility rate and between migration status and sccio-economic variables indicate that investment in human capital in particular, and investment in social overhead and economic development in general, are some of the most effective ways to create and fcster the kind of environment sought. Corollary implicatcn is that an incentive system shculd be designed in such a way as to work in the same direction as that suggested by the hypothesis advanced thrcugh the economic theory of fertility behavior and supported by our study.

Investment in human capital would increase the educational and health level of the popula-tion. Our study shows that education, type of work and occupation, all of which are directly connected with investment in human capital, have the effect of stimulating migratcn and reducing the fertility rate. The quality of human capital and the fertility rate exert mutually reinforcing influences. A higher investment in human capital would lead to a lower fertility rate, and this in turn would improve the quality of human capital.

In augmenting the policy of giving priority to investment in human capital, the following specific rewards and punishments measures are recommended. These measures are designed to supply institutional and legislative reinforcement to make the influence of investment in human capital on fertility behavior more effectie.

—Policies should be enacted to establish a social security system and pension plans sponsored by private agencies as well as by government. These would discourage people from consid-

ering children as an investment good to support them in old age. This measure would also affect the traditional preference for sons among parents.

—Attempts should be made through legislation and other measures to promote employment opportunities for women in all job and professional categories. It has been pointed out that income elasticity of employment is higher for women than for men by Dr. Chong Kee Park of the Korea Development Institute. Such an effort would increase the employment of women further, thus increasing the cost of time of married and unmarried women, and thereby increasing the cost of raising the age at marriage.

—The tax structure should be designed to penalize families with more than two children vis-a-vis those with two children or less, and also to penalize young married people vis-a-vis unmarried people. Specifically, no tax exemption should be given for the third child and on, and no tax relief should be given for joint tax returns of married couples.

—Policies should be established to scale tuition and other fees according to the number of children a family has. For example, progressively increasing tuition and fees should be assessed to the third child and on to increase the cost of education for families with more than two children.

—Men from families of one or two children should have a smaller military obligation.

—Health programs should be launched to lower the infant mortality rate. For example, maternity and child health care should be provided in conjunction with family planning services. This will reduce the need for extra babies to ensure the survival of an heir or the number of surviving children.

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<抄 錄>

韓國에 있어서의 人口移動과 出産力

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最近 우리나라의 人口學的 變化의 重要한 特性은 急激한 都市化와 出産率의 低下라 할 수 있다. 1966年부터 1970年까지의 地域間 移動樣相과 移動人口의 年齡을 보면 大都市(서울, 釜山)로의 移動은 急激히 增加한 반면(63%), 市로의 移動率은 불과 7「퍼센트」로 나타나고 있으며, 年齡集團別로는 大都市의 경우 15 歲에서 24 歲사이의 移動人口가 가장 높은 比率을 차지하고 있다. 人口移動과 出産力間의 關係를 硏究하는데 있어서 問題가 되고 있는 것은, 비록 現在는 都市와 農村에서 女性의 出産率이 低下趨勢에 있다고 하여도 都市·農村間의 出産力水準의 基本的인 差異는 變化없이 남아있다는 점일 것이다.

本 論文에서는 우선 1955年부터 1972年까지의 人口移動의 趨勢, 移動人口의 特性 그리고 出産率變化에 관한 一般的인 性格을 살펴보면서 出産率에 영향을 미치는 社會·經濟的인 要因과 移動과 出産率과의 關係를 分析한 후에 이에 따른 앞으로의 展望과 出生率低下를 위한 몇가지 政策的인 提案을 하고 있다.

1955年부터 1960年까지의 期間에 社會·經濟的인 要因의 趨勢와 이들이 出産率과 어떻게 관련되어 있는 가의 分析에서 아래와 같은 結論이 얻어졌다. 즉 出産力과 關聯된 要因들로서는 都市化, 産業化, GNP, 敎育水準, 期待壽命이 있으며, 이 期間동안 이러한 要因들은 增加되었고 반대로 出産率은 低下되었다.

經濟學의 觀點에서 본다면, 都市化란 消費者의 消費類型의 變化를 뜻한다. 즉 都市人은 子女하나를 더 키우는데 費用을 들이느니 보다는 이외의 다른 곳에 費用을 할당하기를 원하고 있다는것이며, 더구나 都市는 農村보다 子女를 養育하는데 드는 費用이 더 많은 것으로 나타난다. 具體的인 例로 都市의 父母는 農村의 父母들보다 平均敎育水準이 더 높은데 父母의 敎育水準이 높을수록 그 子女에게 높은 水準의 敎育을 시키는 경향이 있으므로 子女의 養育費는 더한층 높아지는 것이다. 産業化의 傾向을 보면 1960年부터 1970年 사이에 農業, 林業, 水産業에 從事하는 人口의 增加率은 이 期間以前의 0.1「퍼센트」에서 −1.9「퍼센트」로 減少한 반면 같은 10年동안에 礦山과 製造業은 9.2「퍼센트」에서 18.2「퍼센트」로 增加하여 勞動力의 産業化를 나타내고 있다. 出産力低下의 또 다른 要因으로는 幼兒死亡率의 減少와 期待壽命의 延長을 들 수 있는데 이에 따라 父母들은 願하는 程度의 子女數를 갖기 위해 더이상의 出産을 억제는 하지 않는 것이다.

요컨대 出産率低下의 가장 큰 要因은 都市化로, 都市化가 될수록 出産率이 낮았으며, 둘째는 敎育水準으로, 높은 敎育水準의 사람일수록 少子女를 원하고 있고, 세번째 要因으로는 醫術의 發達을 들 수 있는데 醫術의 發達에 따라 子女死亡 危險率이 減少되면서 出産率이 低下된다는 것이다.

다음으로 移動과 出産率과의 關係를 살펴보면 우선 서울은 全地域에서 人口를 吸收하고 있으며

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釜山은 서울과 서울을 싸고 있는 京畿道를 除外한 全地域으로부터 人口를 받아 들이고 있는데 全地域의 모든 年齡集團에서 移動人口는 非移動人口보다 敎育水準이 높은 少子女數를 갖고 있는 것으로 나타난다.

또한 移動人口의 年齡集團은 15歲에서 40歲가 가장 많으며, 서울의 경우 서울로의 移動者들은 다른 地域으로의 移動者들보다 少子女數를 갖고 있었고 結婚前 年齡層 移動者의 比率이 가장 높은 것으로 나타났다.

1972年부터 1981年 사이에도 특별한 變化가 發生하지 않는 한 都市化, 産業化는 繼續될 것이며 GNP, 敎育水準, 期待壽命은 繼續 增加될 것으로 豫測되고, 家族計劃硏究院의 硏究結果에 의하면 農村人口의 都市 移動率도 계속 增加될 것으로 보인다. 出産力低下에 가장 큰 영향을 미치는 都市化는 繼續될 것이며 理想子女數 減少에 가장 큰 要因으로 알려져 있는 子女養育費도 繼續 增加될 것이다. 또한 産業化에 따른 勞動構造의 變化로 女性의 就業機會가 넓어져 家庭에서의 女性의 時間이 短縮되고, 따라서 少子女의 規範形成은 더욱 促進될 것이다.

結果的으로 現在의 人口都市集中現象이 出産率을 低下시킬 것이라는 推論을 하게 되고 이는 現在 우리나라의 政策 즉 人口分散策과 出産率低下政策이 동시에 矛盾되는 듯이 보이나 여기서 중요한 점은 都市化가 出産率을 低下시키는 가장 큰 要因이라는데 있어 都市化란 都市의 生活特性을 意味한다는 점이다. 즉 農村住民들에게도 都市와 같은 生活態度와 動機를 가질 수 있도록 環境施設이 바뀌고 政策이 實施된다면 人口分散政策과 出産力低下政策은 동시에 可能할 것이다. 또한 出産力에 영향을 미치는 다른 여러 要因들——즉 婦人의 居住地域, 敎育程度, 就業種類—과의 關聯性을 排除하고서도 移動 그 自體가 出産力에 영향을 갖고 있다는 것도 중요한 사실일 것이다.

다음으로 우리는 이와같은 硏究結果를 토대로 人口增加率을 抑制하기 위한 몇가지 提案을 하여 보았다. 政府는 1977年부터 1981年까지의 第4次 5個年計劃期間에 人口의 都市集中抑制와 人口分散政策, 그리고 工業의 多樣化政策을 繼續 推進하는 동시에 이 計劃이 끝나는 1981年의 우리나라 年平均人口成長率을 1.6「퍼센트」로 低下시킬 것을 目標로 하고 있다. 人口增加抑制策은 經濟發展을 促進하고 國民의 生活水準을 向上시키기 위해서는 全面的으로 要求되어지는 것인데 여기서는 다음의 두가지가 중요하게 考慮되어야 할 것이다. 즉 첫째로는 急激한 都市化에 의해 부수적으로 생겨나는 여러 문제들——住宅難, 公害, 敎育 및 醫療施設의 不足——이 중요하게 處理되어져야 한다는 것이며, 둘째는 人口移動, 都市化, 人口成長, 그리고 經濟發達에 關聯된 各 政策들은 相互協力과 統合을 이루어서 決定되고 施行되어져야 한다는 점이다.

都市化와 都市生活에의 露出이 出産力低下에 영향을 준다는 硏究結果는 前述한 바와 같이 都市로의 移動者, 그리고 都市人들이 갖고 있는 動機나 態度가 出産力을 低下시키는데 原因이 되는 것으로 볼 수 있으며, 이들 移動者들이 갖게 되는 같은 種類의 動機와 態度를 移動을 하지 않고서도 갖도록 해줄 수 있다는 前提下에 人口成長의 抑制를 위한 몇가지 具體的인 對策을 考慮해 보았다. 즉 社會保險制度의 確立에 政府와 民間財團이 모두 協力해야 하며, 모든 一般 및 專門職種에서 女性의 就業機會를 增進시켜 주어야 하고 3子女以上의 家族이나 早婚夫婦에게는 過重한 稅金을 賦課하는 內容으로 租稅政策을 活用해야 하며 兄弟가 적을 경우 兵役義務에서 減免惠澤을 주고 醫療 및 保健施設과 이에 대한 事業을 强化할 것 등이다. 이와같은 諸代案策들은 그것이 制度的 法律的으로 制定되고 施行되어 질 때만이 그 目的을 다할 수 있을 것으로 생각된다.