# Relative Deprivation in Human Capital Investment in Urban Poor and Middle Class Households in Inchon, Korea

This study examined factors associated with the level of relative deprivation in human capital investment using a sample of 335 households in Inchon, Korea. Regression results indicated levels of deprivation in human capital investment were significantly higher for older household heads or residents of the poor residential class. Household heads with higher education levels or households with a higher level of nonasset income had significantly lower levels of deprivation in human capital investment.

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## Introduction

Despite rapid economic growth since the 1960s, economic inequality has been a persistent problem in Korea. Relative poverty has become a more serious issue than absolute poverty. Human capital investment has been recognized as an important factor in individual and household level economic well-being (Becker, 1993; Bryant, 1990). Differential human capital investment can exacerbate economic inequality. Thus, examination of relative deprivation in areas of human capital investment can help family economists understand the determinants of inequality and can inform public officials interested in mitigating disparities in individual and household level economic well-being.

*Deprivation* exists when level of consumption fails to meet a given standard. *Relative deprivation* measures this standard as the ability to have or to do certain things commonly deemed essential in a society, things that others within the society have or can do. The concept of relative deprivation focuses on level of actual consumption versus level of economic resources, thus, it is important as a theoretical perspective for understanding the level of consumption in poor households as compared to the middle class.

When most or all within a society face similar constraints in resources and, hence, in consumption level, deprivation may not be as great a source of frustration or discouragement than if some groups believed they faced more constraints than other groups. Thus, it is also instructive to examine reports of *subjective deprivation*. In this case, the standard of comparison becomes the survey participant's own view regarding what they think they should have compared to others.

The purpose of this study is (1) to examine the factors associated with relative deprivation in areas of human capital investment in urban poor and middle class households in Inchon, Korea, and (2) to assess the levels of subjective deprivation reported by study participants relative to areas of human capital investment.

## Literature Review

### Concept of relative deprivation

Merton and Rossi (1957) and Runciman (1966) introduced the concept of relative deprivation as *subjective* deprivation, defined as "feelings of deprivation relative to others". Subsequently, Townsend (1979) emphasized that *objective* deprivation, "a condition of deprivation relative to others", is a more useful concept for explaining the level of living of poor households. Objective deprivation exists when the level of living of a particular household cannot come up to that of an average reference group of the nation.

Townsend (1979) developed a comprehensive concept of deprivation, and suggested "people can be said to be deprived if they lack the material standards of diet, clothing, housing, household facilities, working, environmental and locational conditions and facilities which are ordinarily available in their society, and do not participate in or have access to the forms of employment, occupation, education, recreation and family and social activities and relationships which are commonly experienced or accepted" (p. 413). He and his colleagues argued that deprivation is not the same as poverty. "The first turns on the level of conditions or activities experienced, the second on the incomes and other resources directly available" (Townsend et al. 1987, p. 85). Thus, to understand the effects of poverty in actual living, the concept of deprivation is adequate.

### Determinants of relative deprivation in consumption

During 1968 -1969, Townsend asked sixty questions of a sample of 2,050 households throughout Britain, focusing on an objective versus subjective assessment of deprivation. He hypothesized "with a

diminishing level of resources, people will engage less fully in the national 'style of living'" (Townsend 1979, p. 59). He verified the relationship between deprivation and income using Pearson's correlation coefficient (Townsend 1979, p. 1168).

In 1983, London Weekend Television (LWT) conducted a large investigation of poverty in the United Kingdom. The LWT research team interviewed 1,174 people over age 17, and asked questions about thirty-five indicators of styles of living (Desai 1986). Results of the regression analysis indicated that the relationship between deprivation and the reciprocal of income was curvilinear (Desai 1986; Mack and Lansley 1985).

Desai and Shah (1988) used a deprivation measure related to the Townsend measure. They obtained information from the 1968/1969 Townsend data on the socio-economic characteristics of households (income, family type, health, education, region and origin) and used dichotomous logit analysis to assess the existence of deprivation. They concluded that income was neither the sole nor the most important indicator of deprivation. This conclusion may be quite relevant to the analysis of Korean data. Compared to other newly industrialized countries, income distribution in Korea is relatively equal, but the distribution of wealth is so seriously skewed that the Gini coefficient is over 0.9 (Korean Research Committee for Public Concept of Land, 1989). Therefore, it could be shortsighted to conclude that income is the sole determinant of deprivation of Korea.

While income certainly has a significant impact on consumption (Keynes [1936] 1973), other economic resources such as assets may also influence consumption levels. Education level of the household head may influence the level of resources available to the household and, hence, the level of consumption (Becker 1964; Mincer 1974; Schultz 1963). The work of Ando and Modigliani (1963) and of Modigliani and Brumburg (1955) posits that consumption patterns change over the individual and family life cycle, suggesting age of household head and household size may influence consumption levels.

Residential segregation by social class in Korea has been expedited due to the construction of new large-scale residential areas in urban Korea since the mid-1970s (Lee 1980, 1982; Hong and Kim 1988; Hong 1992; Park 1992). Therefore, residential class may also be an important determinant of relative deprivation.

This study is based on Townsend's hypothesis that resources determine deprivation. Relative deprivation is operationalized consistent with Townsend's definition - lacking specific material items that are "ordinarily available." On the basis of previous research and characteristics of Korean life, factors thought to influence level of relative deprivation include: age and education level of household head, number in household, nonasset income, asset level of the household, and household residential class. This study also uses the concept of deprivation as "feelings of deprivation relative to others" to assess study participant's subjective views of their consumption in health, medical care, and education relative to other specific reference groups.

## Method

### Data

The survey population of the Poor Residential Class (PRC) was those people residing in 75 areas in Inchon city designated as "areas which have been identified as needing significant environmental improvements for urban low income residents by Inchon city" (Inchon City Government, 1991a). Twenty out of 75 areas were selected as the PRC sample areas using a sampling proportionate to the size of urban low income residents in the six city wards (in Korean, gu). The survey population of the Middle Residential Class (MRC) was those people residing in "24 middle class areas in the six administrative units called gu in the city of Inchon" (Inchon City Government, 1991b). All of these areas were selected as MRC sample areas. Twenty households from each PRC sample area (20 * 20 = 400), eight households from each of 12 MRC sample areas and nine households from each of another 12 MRC sample areas (8 * 12 + 9 * 12 = 204) were selected using a two-stage stratified systematic sampling. The ratio of PRC to MRC was 2:1

After a preliminary survey, data on 604 households were collected by the researcher through interviews with the principal woman of the household in November, 1991. After excluding households in the middle residential class whose household heads were not employed; households in the middle residential class with net assets below 30,000,000 won; households in the poor residential class with net assets greater than or equal to 30,000,000 won; households who did not report complete information on all the dependent and independent variables, 563 households remained. From that group, the analysis in this study focused on the 335 households with children between 5 and 17 years old since this household type would face a strong social norm regarding investing in the children's education.

### Statistical model

The multiple regression model used in this study was:

$$Y = b_0 + b_1AGE + b_2EDUC + b_3NFAM + b_4NAINC + b_5ASSET + b_6PRC + e \quad (1)$$

where Y is the level of relative deprivation in consumption in areas of human capital investment; AGE is age of the household head; EDUC is education of the household head; NFAM is the number in the household; NAINC is nonasset income of the household; ASSET is assets of the household, PRC is residential class (PRC = 1, MRC = 0) and e is a random error term.

Variables

Dependent variable. The index of relative deprivation in human capital investment was based three sources. Some items were drawn from Townsend (1987) and Mack and Lansley (1985) adapted to Korean culture. Other items were based on professional judgment and knowledge of lifestyles in Korea. Study participants were asked about relative deprivation in areas of health, medical care, and education. The specific components assessed for each area are presented in Table 1. For each item, deprivation was indicated by the score of 0 in the case of nondeprivation, and by the score of 1 in the case of deprivation. The level of relative deprivation in each consumption category was the sum of the scores from five items, thus for each consumption category, the range was from 0 (not deprived on any measure) to 5 (deprived on every measure). The indexes for health and medical care and education were combined to yield a measure of relative deprivation in areas of human capital investment. Values of this index could range from 0 to 10.

Table 1.
Measures of relative deprivation in health and education

| Consumption Items | Deprivation Measures |
|---|---|
| Health & Medical Care | 1. No dental treatment<br>2. Problem of chronic disease of one of the household members<br>3. No medical treatment from doctors<br>4. No exercise for health such as ping pong, tennis or mountain climbing<br>5. No basic inexpensive equipment for sports or mountain climbing such as ping-pong paddles or appropriate footwear to hike the mountains |
| Education | 1. Not being able to afford education expenses such as tuition, school fees, or kindergarten and nursery school fees during last six months<br>2. Neither encyclopedia, Korean dictionary, children's books, novels, nor science books<br>3. No help sessions with private tutor<br>4. No consulting with children's school or kindergarten teacher<br>5. No subscription of study materials |

Independent variables. The proposed determinants of relative deprivation in this study were age and education level of the household head, number in household, nonasset income of the household, assets of the household and residential class. Age and education of household head were measured as continuous variables in number of years. Number in family was the count of all individuals residing in a household. Nonasset income was defined as total household income excluding asset income, measured in won. Typically, this was labor income. Assets were measured in won as total assets net of total debt. Residential class was divided into PRC and MRC, with MRC assigned as the reference category. The operational definition of PRC was those who live in squatter areas which have been identified as needing significant environmental improvements and whose assets are below thirty million won. MRC was defined as those who reside in an ordinary residential area and whose assets are more than thirty million won.

## Results and Discussion

Means and standard deviations of the dependent and independent variables are reported in Table 2. On average, survey participants reported low levels of relative deprivation in areas of health, medical care, and education. The average household was headed by someone in their early 40s with 11 years of education. Households had about 4 members, in general. Household labor income was about 1,320,000 won [3] per month while net asset holdings were about 102,660,000 won. Most survey respondents, 66%, resided in a poor residential class.

Regression analysis results are reported in Table 3. In general, the model performed well. The independent variables explained almost half of the variance in the dependent variable. Age of the household head and residence in the poor residential class were significantly and positively associated with higher levels of relative deprivation in areas of human capital development. The age of the household head may be capturing some family life cycle effects. Older household heads are more likely to have chronic health problems but less likely to have a lifestyle focused on exercise for health improvement. They are also more likely to have teen-aged children who are expected to go to college. Parents who believe that their children's future level of living

will be determined by the quality of their postsecondary education (more precisely education from a highly ranked university in the hierarchical order of universities in Korea) will spend large sums of money for private education in addition to the expenditures required for public school. While food expenditure accounts for 28% of total household expenditure, educational expenses constitutes 16 % of total expenditure for those households headed by someone in their 40s. The level of educational expenditure share is compared to 2.5% for the households headed by someone in their 20s, 4.8% for those in their early 30s, and 11.2% for those in their late 30s (National Statistical Office, ROK, 1996). Inability to afford tuition expenses, sessions with private tutors, or study materials would contribute to relative deprivation in areas of human capital investment.

Residence in a poor area may proxy limited access to health and educational resources compared to residence in a middle-class area as well as other constraints not captured in the empirical model used in this study. In Inchon city, the poor residential areas are identified as the place where low income urban households reside; these are also areas that need significant environmental improvements. In Korea, the residential class does not simply represent differences in physical residential environment. Households living in similar residential areas share the common cultural and moral aspects of family life.

Higher levels of education of the household head and nonasset income are associated with lower levels of relative deprivation in areas of human capital investment. It may be that household heads with higher levels of education understand the importance of human capital investment for themselves and other family members, consequently, efforts are directed towards meeting household member's needs relative to health and education, perhaps at the expense of consumption in other areas. Higher levels of nonasset income, of course, facilitate acquisition of the items used to assess deprivation, reducing the level of deprivation experienced.

Table 2
Means and standard deviations of dependent and independent variables

| Variables | Means (Standard Deviation) |
|---|---|
| Human Capital Deprivation Index | 4.28 (2.35) |
| Age HH head | 42.75 (7.46) |
| Educ. HH head | 11.06 (3.36) |
| HH Size | 4.22 (0.89) |
| Nonasset income | 1,317,000.00 (1,217,600.00) |
| Assets | 102,659,000.00 (329,070,160.00) |
| Reside in PRC | 0.66 (0.48) |

Table 3
Multiple regression analysis of relative deprivation in human capital investment

| Independent Variables | Parameter Estimate |
|---|---|
| Age HH head | 3.29** (0.01)[a] |
| Educ. HH head | -0.15*** (0.04) |
| HH Size | -0.10 (0.11) |
| Nonasset income | -0.002* (0.001) |
| Assets | 0.36E-6 (0.31E-5) |
| Reside in PRC | 2.34*** (0.27) |
| Constant | 3.29 (0.92) |
| Adjusted $R^2$ | 0.49 |

[a]Standard errors given in parenthesis.
*** $p < .001$
** $p < .01$
* $p < .05$

In Table 4, the report of study participants regarding their subjective assessment of their consumption of health and education compared to relatives, neighbors, and the country at large is given. It is interesting that for both health and education, a vast majority of participants felt their levels of deprivation were "about the same" as any of the three comparison groups. However, for either health or education, participants were more likely to judge that they were "much worse off" when comparing themselves to the "average in the country" than when comparing themselves to relatives or neighbors of the same age. It would seem that the more distant and amorphous the comparison group, the greater the disparity between self and that other was judged to be. However, the "closer to home" the comparison group, the smaller the disparity between self and other was judged to be.

Correlation analysis between levels of relative and subjective deprivation was conducted to examine the relationship between the two different types of measures. Results indicated that the correlation between subjective assessment of deprivation in health and medical care and relative deprivation in human capital investment areas was .38 when the comparison group was relatives, .33 when the comparison group was neighbors like me, and .47 when the comparison group was the average in the country. The correlation between subjective assessment of deprivation in education and relative deprivation in human capital investment areas was .50 when the comparison group was relatives, .39 when the comparison group was neighbors like me, and .59 when the comparison group was the average in the country. Correlation for subjective deprivation in education and relative deprivation in human capital investment are slightly higher, perhaps reflecting keener attention to levels of education consumption given the social norms relative to education in Korea.

Table 4
Proportions of reported levels of subjective deprivation for health and education

| Consumption Category | Reported Level of Subjective Deprivation | | | | |
|---|---|---|---|---|---|
| | Feel much better off | Feel slightly better off | Feel about the same | Feel slightly Worse off | Feel much worse off |
| Health and medical care Compared with: | | | | | |
| Relative | 2.4 | 14.6 | 67.5 | 13.7 | 1.8 |
| Neighbors of same age | 0.9 | 15.2 | 72.5 | 10.7 | 0.6 |
| Average in the country | 1.2 | 13.4 | 58.8 | 23.9 | 2.7 |
| Education Compared with: | | | | | |
| Relative | 1.8 | 9.6 | 61.5 | 22.4 | 4.8 |
| Neighbors of same age | 1.5 | 11.6 | 73.1 | 11.6 | 2.1 |
| Average in the country | 1.2 | 10.1 | 48.4 | 31.3 | 9.0 |

## Summary and Implications

Measures of relative deprivation indicate the degree to which people do not have items ordinarily consumed within a society. This measure provides a different way of assessing poverty than looking at economic resources alone. In areas of human capital investment, the consumption-based measure of relative deprivation is useful. If human capital investments are made by some groups but not by others, economic differences between those groups can become larger as deficits in health or education limit productive ability.

Subjective measures of deprivation gives a different way of assessing deprivation. If most or all within a society believe they face similar constraints in consumption compared to others, real deficits in consumption may be tolerated. However, if some groups believe they face greater deprivation than others, frustration and social division between those who think they are the "have nots" among the "haves" can arise.

Results of this study indicate that average levels of relative deprivation in health, medical care, and education are fairly low. Lower levels of deprivation were associated with having a household head with higher levels of education and nonasset income. Both factors alter the resource base of a household and may influence consumption choices. Household heads with higher levels of education may cut back in other areas of consumption when necessary to focus available resources on education of household members. Correlation between relative and subjective measures of deprivation is higher for education. Higher levels of deprivation were associated with older household heads and residence in the poor residential class. With respect to investment in health, older household heads are more likely to have chronic health problems. Moreover, they are less likely to have a lifestyle that includes daily exercise for health maintenance, even though low cost activities such as mountain climbing or playing ping-pong are available. Older householders are also more likely to have children in high school versus children in kindergarten. In Korea, parents are expected to invest heavily in their children's education and these expectations and costs increase as the child becomes older. As children near completion of high school, parents may experience a high level of relative deprivation due to the high level of private educational expenditures thought needed to prepare to send their children to a highly ranked university.

In the current Korean economic crisis, there is a wave of lay-offs occurring for middle-aged (40s) and even younger age groups (30s). Also, residential segregation continues with the less educated residing in the poor areas. Both trends would reduce access to the very factors found in this study to be associated with lower levels of deprivation. Should these trends continue, it is likely that levels of both relative and subjective deprivation in areas of human capital investment will increase, leading to a net loss of human potential for the country as a whole.

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Endnotes:

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3 The exchange rate in 1991 was $1 per 750.30 won. Thus, household labor income would be $1,755.30 and net asset holdings would be $136,823.94 if converted to US dollars.