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The Consumption Patterns of Low-Income Households and Their Policy Implications

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I

Background and Purpose of the Research

I Background and Purpose of the Research

The purpose of this study is to identify and analyze the consumption patterns of low-income households as well as the factors that influence those patterns. The subject of this study is the consumption characteristics of low-income households because we believe that consumption is more reflective of their needs and lifestyles than is income, and is therefore more likely to reveal the diverse needs and desires of a class that policymakers ought to take into greater account.

Consumption at the individual level can be understood as a process by which one satisfies a need. The amount of consumption thus depends upon the amount of resources at one's disposal for satisfying basic needs. Poverty studies in the past mostly focused on the availability of economic resources and their potential for satisfying needs of the poor. Income was one of the most popular proxy variables standing for those resources in such studies, shaping their approaches to the amounts and structures of income that the low-income class earned. Confining our attention to resources in poverty research, however, runs the risk of blinding us to the particular characteristics of the poor's needs and actual living conditions, and could potentially result in inadequate and unrealistic

policies.

Income has for a long time been favored as a main measure of poverty in analysis and research because it is relatively easy to measure in relation to a large population and can easily be translated into policy terms. However, there is a growing tendency in research toward emphasizing consumption instead of income as a measure for understanding the level of (material) wellbeing that members of a society enjoy. Examples include Atkinson (1991), Deaton (1997), the World Bank (2001), and Meyer and Sullivan (2003).

Meyer and Sullivan (2003) have especially influenced researchers into turning their attention to consumption as the more important subject of analysis than income in matters of policymaking on poverty. First, consumption is a more direct measure of the material quality of life one enjoys. Second, and related to the first, consumption as such thus provides a more helpful guide on understanding long-term developments in standard of living than current income. Third, consumption runs less risk of under-reporting. Fourth, consumption provides more useful information on understanding culturally heterogeneous groups making up a population (Meyer and Sullivan, 2003, p. 1).

Researchers have generally preferred income over consumption because of the existence of official sources of reports on the former. A population enjoying the same single source of

income has no difficulty in answering questions about income. The same ease is not found when researching the poor, who tend to be under-educated. Members of the low-income class earn much of their income from a variety of sources, many of which are also informal.

Consumption is also the more standard and intuitive measure of the material quality of life than income in developing countries. This stems from the difference between developed countries and developing ones in official employment rates (Meyer and Sullivan, 2003, p. 1). As many in developing countries work in jobs that are outside the formal sector, we may better understand their wellbeing by measuring their consumption than their income. The same applies to the poor in developed countries who also tend to work outside the formal sector. Poterba (1991) has demonstrated the glaring disparities between income and consumption in the young and elderly groups. These differences reflect lifecycle-specific employment behavior. Measuring the current income of these groups is therefore likely to lead us to underestimating their material wellbeing (Meyer and Sullivan, 2001, p. 4). The fact that the elderly and young adults make up a significant portion of the poor is all the more reason we should turn our focus from income to consumption.

Despite the importance of consumption in research, it has been relatively neglected in the existing literature on poverty.

In this study, we closely examine the changing characteristics of the consumption patterns of the poor in Korea with a view to better understanding their policy needs.

II

Literature Review

II Literature Review

The fundamental premise underlying this study is that the conventional method of understanding poverty using a single measure—mostly, income—is essentially flawed. Not all households defined as "poor" in light of their income levels share the same needs.

The poor are likely to concentrate on satisfying their basic and essential needs. It is therefore crucial to policy researchers to identify and understand how theyselect consumption items to do this. Adopting this alternative approach, we divide the poor into a number of groups according to consumption pattern, and explore the factors that lead these different groups to develop these patterns.

The total amount of consumption tends to be decided by income in low-income households because this group's propensity to consume always exceeds 100. The poor, in other words, are compelled to prioritize how to spend their limited incomes, foregoing their other needs to satisfy the most basic and urgent ones. This is why we need to focus more on the consumption patterns of the poor than the total amounts of money they spend. Consumption patterns can be understood as "totalities of the consumption activities and interests of individuals or

groups living under certain living conditions" (Usitalo, 1980, quoted in Ban and Kim, 2008, p. 5). Understood as such, consumption patterns make up an overall structure of the items that households purchase to improve or maintain their standard of living. There are only a few studies exploring the consumption patterns of the poor in Korea, which are summarized in Table 1.

〈Table 1〉 Previous Studies on Consumption Patterns of Low-income Households in Korea

Author(s)	Subject population	Input variables for clustering analysis	Patterns/types	Method for factor analysis
Jeong and Lee (2011)	Households earning 60% or less of the median income	Proportions ofhousehold expenditures on 10 major categories	Education spender, grocery spender, social spender, transportation and communication spender, health spender, housing spender	Multinomial logit regression analysis
Lee (2009)	Households earning 70% or less of the median income	Proportions of household expenditures on 20 major categories	Basic living spenders, relationship spenders, parenting spenders, private education spenders, housing spenders, health spenders	Multinomial logit regression analysis
Ban and Kim (2008)	Households with working household heads earning	Proportions of household expenditures on 17 major	Social spenders, education spenders, transportation	Logit regression analysis

Author(s)	Subject population	Input variables for clustering analysis	Patterns/types	Method for factor analysis
	less than 50% of the median income	categories	and communication spenders, health spenders, balanced spenders	

Jeong and Lee (2011) use the Korean Welfare Panel Survey data from 2007 and 2008 to understand poverty in Korea. Defining households earning less than 60 percent of the median income as the poor, the authors analyzed their consumption patterns. Factors determining the proportions of income that these households spend on 10 major categories of consumption were analyzed: groceries, housing, utilities, household objects, apparel and shoes, health care, education, entertainment and leisure, transportation and communications, and other consumption. The authors then performed a clustering analysis based on this categorization. The six clusters that emerged were education spenders, grocery spenders, social spenders (spending most on other consumption), transportation and communications spenders, health spenders, and housing spenders.

Transportation and communications spenders spent much on groceries, while education spenders spent much on transportation and communications. Differences between the gro-

cery, social, and transportation and communications spenders were not so prominent. The concept of "other consumption" used in the clustering analysis is largely subjected to extra-ordinary spending and is therefore likely to have misled the authors' understanding of the needs of the poor. The "other consumption" category even includes the money Koreans spend on occasions calling for celebration or condolence, such as weddings and funerals.

The authors employ the technique of multinomial logit regression analysis to examine the influences of relevant factors on these consumption patterns. Included were financial variables (household income, economic activity status of household heads, and occupations of household heads) and demographic variables (number of household members, household type, home occupancy status, age and education of household heads, and household location—Seoul or elsewhere). The authors concluded that the factors relating to households, household heads, and society exerted greater influences than financial factors.

The authors selected the grocery spenders as the base group, and analyzed the factors determining households' likelihood of belonging to each spender group. The social, education, and transportation and communications spenders were more subjected than the grocery spenders to the influences of household factors, including age and education of household heads as well as the number of household members. Factors influencing the

housing spenders were the number of household members, home occupancy status, and residence location. Income was a significant factor relevant to almost all spender groups.

Lee (2009) explored the consumption patterns and financial stability of low-income households. Using the Ninth Korean Labor Panel Survey data from 2006, the author defined households earning less than 70 percent of the median income as poor households. The author performed a clustering analysis using 20 main categories of consumption items: groceries, eating out, public education, private education, vehicle maintenance, housing, social functions, health care, entertainment and leisure, durable goods, communications, financial support for parents, child allowance, other types of family allowances, apparel, offerings and charitable giving, social insurance, public transportation, daily necessities, and other. The proxy variables used to measure financial stability were debts, assets, and net assets.

The clustering analysis revealed that poor households could be divided into several groups depending on their consumption patterns, i.e., the basic living spenders spending most on groceries, the relationship spenders spending most on private cash transfers, the parenting spenders spending most on education of the children, the private education spenders spending most on private education and vehicle maintenance, the housing spenders spending most on housing-related expenses, and the

health spenders spending most on health care. The basic living spenders, spending most on groceries, made up 28 percent of all households; the relationship spenders, spending most on private cash transfers and eating out, 20 percent; the parenting spenders, spending most on (public) education of the children, 8.7 percent; the private education spenders, 21 percent; the housing spenders, 37 percent; and the health spenders, seven percent. The relationship spenders tended to earn more, possess relatively little debt and have smaller households than the other groups.

Lee's multinomial logit regression analysis, with the age and education of household heads, income, expenditure, home occupancy status, number of household members, and gender of household heads as the input variables and the basic living spenders as the base group, revealed no significant differences between the basic living, relationship, housing, and health spenders in terms of financial stability. The analysis also showed private education and parenting spenders as similar in terms of financial stability, possessing more debt than the other spender groups. The basic living and relationship spenders differed significantly only with respect to the age of household heads, consumption, and the number of household members.

It is important to keep in mind that raising, even just by a little, the threshold income level with which poor households are defined, abruptly increases the number of samples. Studies em-

ploying higher threshold income levels thus encounter greater heterogeneity among households.

Unlike the two preceding studies, Ban and Kim (2008) confined their focus on the working poor in analyzing the consumption patterns of poor households. Using the Seventh Korean Labor Panel Survey data from 2004, the authors analyzed working poor households with working household heads earning less than 50 percent of the median income. The authors attempted a factor analysis on the proportions of the main categories of consumption for these households,[1] and used the resulting factor scores to perform a clustering analysis on all households. The authors then divided all analyzed households between "poor" and "non-poor".

The authors' clustering analysis led a number of distinct household types to emerge, i.e., the social spenders spending most on donations, social insurance, cash transfers on congratulations or condolence, culture and entertainment, and eating out; the educational spenders spending most on the public and private education of the children; the transportation and communications spenders spending most on vehicle maintenance and telecommunications; the health spenders spending most on housing and health care; and the balanced spenders spending evenly on all categories. The analysis of all house-

1) The authors are unclear on whether the variables used in factor analysis were the amounts or proportions of spending. One can infer from the context, however, that proportions of spending were used.

holds (rather than only those designated as poor) appears to have led to the grouping of housing and health spenders into a single type.

The authors then performed a logit analysis to determine the decisive factors of household consumption patterns. The independent variables were the gender, age, education level, and marital status of household heads; the presence of dependent children; the health of household members; home occupancy status; working status; residence location; and poverty. Of these variables, poverty made little difference to education spenders.

The facts that the authors confined their attention to the working poor only and analyzed the influences of the input variables by statistically controlling for the influence of poverty on all households make their findings not so applicable to all low-income households. Nevertheless, the authors made an important discovery in that the income elasticity of the working poor concerning education, housing, apparel, and health care was below one. In other words, the working poor cannot afford to readjust or reduce their spending on basic and essential needs, and are therefore likely to reduce their spending on other categories to satisfy these basic needs.

This study departs from the existing literature on a number of points. First, it analyzes more recent data. Previous studies reviewed here rely on data from relatively long ago, and are

therefore unsuited as sources of information on the recently-changing consumption patterns of the poor in Korea. This study, on the contrary, uses data from 2014.

Second, this study analyzes consumption patterns taking needs into account. Previous studies use few or inappropriate proxy variables for household needs and therefore fail to provide a clear explanation of the differing characteristics of households. These studies have neglected either the characteristics of households including children or seniors as members or the amounts of debt that centrally define household financial status. This study, in contrast, adds proxy variables for household needs in examining the factors influencing their consumption patterns.

Most importantly, this study focuses particularly on basic needs. Previous studies treat all needs and consumption categories without considering the priority of basic needs. This, in turn, adds to the murkiness of their analysis and understanding on spending patterns. Spending on social purposes, for example, becomes a category of its own for understanding poor households, while expenditures on housing and health are used to put two very different types of households together into a single group. In the following chapters, the reader will see how clustering analysis based on basic needs will radically alter implications for policymaking on poverty.

III

Method of Analysis

III Method of Analysis

In this chapter, we shall divide low-income households into a number of groups according to their consumption patterns and analyze the factors determining those patterns. We perform clustering and multinomial logit analyses to this end. We also analyze the main characteristics of consumption patterns of low-income households in Korea and their recent changes.

Our clustering analysis is limited to low-income households only. The proportions of income that low-income households spend on each of the main consumption categories are used as independent variables. Using the amounts, rather than proportions, of expenditures by category would not produce significant results due to the marginal differences in amounts, and also make it impossible to define low-income households as a group with clarity. Having defined the low-income class or the poor subject to our analysis, we then identify the factors that determine the likelihood of belonging to each spending group.

We divide the poor into a number of spending groups solely on the basis of our clustering analysis without performing a factor analysis. Some studies on spending patterns perform factor analyses to identify the factors of spending patterns, and then use the emerging factors to divide spenders into groups.

The results produced by these factor analyses, however, tend to be unstable. Factor analysis involves grouping together highly correlated variables and re-sorting the groups of variables into certain factors. The expenditure categories, however, already serve as such groups of correlated variables. Trying to inject diverse expenditure categories into factor analysis re-group them into groups of factors thus compromises the validity and reliability of the resulting groups of factors. As a result, different authors reach quite different conclusions with their factor analyses, and their clustering analyses based upon such factor analyses also end up producing less than reliable results.

Our analysis concerns the basic data for the 2014 Household Trend Survey (HTS). We focus specifically on this survey because it provides detailed categories of household expenditures. The data for the same survey conducted in 2015, by contrast, do not provide information on the detailed household expenditure categories. We define the households subject to our analysis as those earning less than 50 percent of the median disposable income.

In describing the general characteristics of and changes in the consumption patterns of low-income households, however, we do refer to additional data provided by the HTS of other years. Our analysis of health, education, and housing expenditures that are not divided into subcategories are also based on the data from the latest available HTS, which is from

2015. We also rely on the Korean Welfare Panel Survey data, particularly with respect to identifying the number of patients suffering similar diseases, the inclusion of registered students as household members, and households at risk of deprivation who are forced by their high spending on rent and housing to radically cut down on other expenditure categories.

Statistics Korea, which conducts the HTS, follows International Labour Organization (ILO) recommendations in breaking household expenditure into 12 categories. The categories pertaining to basic needs for subsistence are the central subject of our analysis.

In our analysis, we maintain the same 11 expenditure categories as the HTS, except for spending on tobacco and alcohol. We also analyze spending with an emphasis on basic goods, by re-estimating the amounts and proportions of household expenditures on the housing, education, and health categories that are not directly spent on satisfying basic needs. On the other hand, it was difficult to discern spending on clothes, groceries and other such categories that did not directly concern basic goods. In other words, we rearranged the proportions of expenditures on the categories of housing, health care, and education by taking into account the amounts spent on basic goods in performing our clustering analysis.

〈Table 2〉 Essential Goods in Expenditure Categories

Category	Subcategories
1. Groceries and beverages (non-alcoholic)	
3. Apparel and shoes	
	4-1. Actual housing costs / 4-1-1. Monthly rent / 4-1-2. Other housing expenses / 4-2. Costs of housing maintenance and repair / 4-4. Expenses of other housing-related services / 4-5. Fuel / 4-5-1. Electricity tariffs* / 4-5-2. Kerosene*
	5-10-2. Wages for domestic helpers*
	6-1. Pharmaceuticals / 6-1-1. Prescription drugs / 6-1-2. OTC drugs / 6-1-3. Traditional medicine and ingredients / 6-4. Outpatient services / 6-5. Dental services / 6-7. Inpatient services
	9-15. Culture and the arts / 9-17. Books / 9-17-1. Learning aids and supplements / 9-17-2. Secondary school textbooks / 9-17-3. Other books
	10-1. Regular (public) education / 10-3. Private education (cram schools and tutorials) / 10-4. Private education (cram schools and tutorials, adult education not included)
	11-1-1. Eating out
	12-5-2. Childcare /12-5-3. Other social services
Non-household spending*	13. Ordinary taxes / 17. Interest / 17-1. Mortgage interest / 17-2. Other interest
Other spending*	20. Spending due to change in assets / 20-1. Savings / 20-2. Savings-type insurance premiums / 21. Spending on debt reduction / 21-1. Amortization of mortgage

Note: Categories and subcategories indicated with asterisks (*) are for reference.

The influence of factors determining to which spending group households belong are analyzed in a multinomial logit regression analysis. The dependent variables are the spending groups identified by the clustering analysis. The independent variables reflect the needs and means of households, and are similar to the variables used to identify factors influencing consumption patterns. Note that the square of age, used in the re-

gression analysis on factors affecting consumption, is not used in the analysis on the likelihood of belonging to the given spending groups because the dependent variables of the latter analysis are nominal.

We take care to ensure that the independent variables reflect both households' needs and their financial insecurity. The locations of living, the number of household members, the age and gender of household heads, the numbers of children and seniors, and home occupancy status are thus used as variables reflecting needs. Ordinary income and home ownership status are also used as proxy variables for financial means and assets. Home ownership status reflects both the means and needs of households. It not only represents the wealth of given households, but also reflects the differences between them in terms of earned income and the working status of household heads (tied to household means and financial insecurity), and is tied to the amount of public assistance received and the amount they can afford to spend to reduce debt. The amounts of public assistance provided by the government are used as a proxy variable for social security benefits. This variable is discussed in numerous studies as a major influencing factor on household spending. Below is the model used in our multinomial logit analysis.

$$\ln\left(\frac{P_A}{P_D}\right)=b_{A0}+b_{A1}X_{A1}+b_{A2}X_{A2}+b_{A3}X_{A3}+b_{A4}X_{A4}+$$
$$b_{A5}X_{A5}+b_{A6}X_{A6}+b_{A7}X_{A7}+b_{A8}X_{A8}+b_{A9}X_{A9}$$
$$+b_{A10}X_{A10}+b_{A11}X_{A11}+b_{A12}X_{A12}$$

Where: XA1 = location, XA2 = number of household members, XA3 = age of household head and square thereof, XA4 = gender of household head, XA5 = number of children, XA6 = number of seniors, XA7 = home ownership status, XA8 = household head's working status, XA9 = ordinary income, XA10 = earned income, XA11 = public assistance, and XA11 = spending to reduce debt. "D" is the reference group, "A" is the analyzed group.

IV Results

1. Consumption of Low-Income Households: Changes and Characteristics
2. Consumption Patterns of Low-Income Households
3. Decisive Factors of Low-Income Households' Consumption Patterns

Ⅳ Results

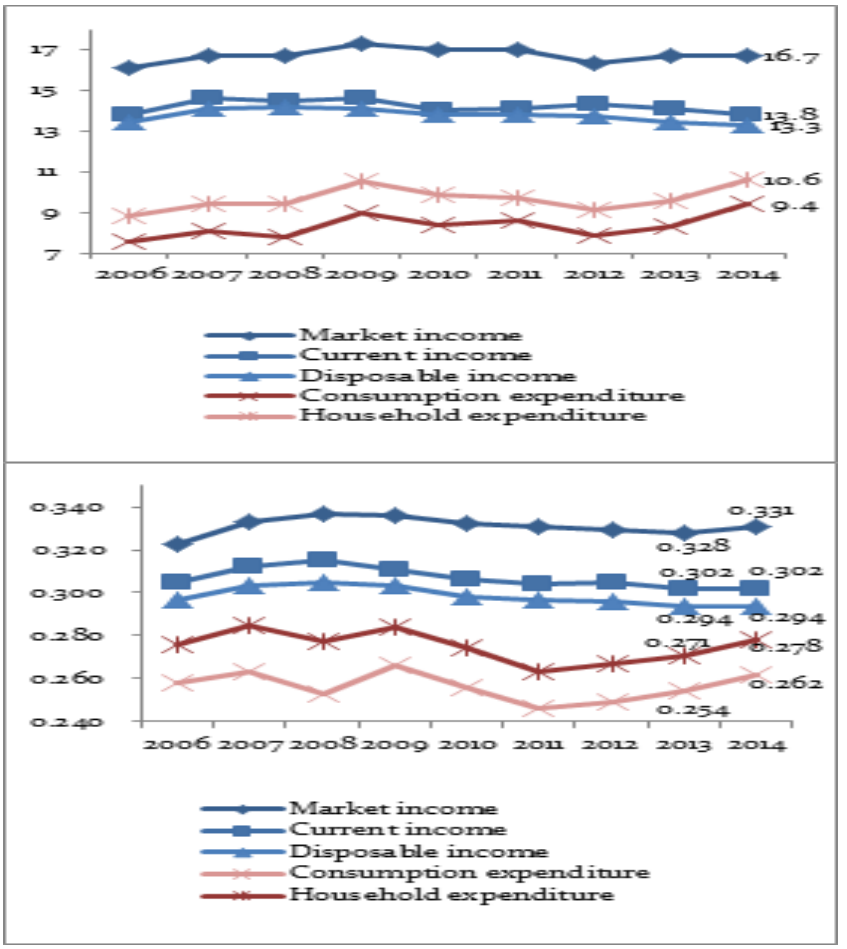
1. Consumption of Low-Income Households: Changes and Characteristics

A. Changing Levels of Spending

Before analyzing the consumption patterns of low-income households, we need first to examine the recent changes in those characteristics. In particular, our goal is to identify how high the risk of deprivation—being unable to spend—runs among low-income households in satisfying the same basic needs that other income groups have as well.

The consumption poverty rate (at 50 percent of the median income) in Korea has been rising since 2008, except for brief decreases in 2011 and 2012. The same pattern is observed with respect to consumption inequality.

[Figure 1] Proportion of Households in Relative Poverty and Changes in Inequality



Source: Statistics Korea (2006 to 2014). Household Trend Surveys (raw data).

The amount of actual household spending by low-income households grew by 1.1 percent from 2006 to 2015, while the amounts of actual household spending increased by 9.2 percent in middle-income households earning 50-150 percent of the

median income, and by 5.8 percent in high-income households earning 150 percent of the median income or more. The pale growth of this consumption by low-income households likely reflects the contraction of their income, particularly their market income. Although the real amount of disposable income for low-income households increased by 15.2 percent over the same years, their actual market income fell by 18.5 percent. By contrast, the disposable income of the middle- and high-income households grew by 16 percent and 13.5 percent, while their market incomes grew by 14.3 percent and 14.6 percent, respectively. Although the amount of actual spending by low-income households increased, it grew at a far lower rate than those of the other two income groups. Notwithstanding the similarly-paced growth of the disposable income for low-income households and other income groups alike, low-income households were the only income group to experience a radical drop in market income at the same time.

While since 2011, low-income households' propensity to consume has been in decline, it still significantly exceeds 100. The fact thatthe propensity to consume for low-income households remains above 100 despite the increase in their disposable income since 2006 indicates that spending has been much more burdensome here than on other income groups.

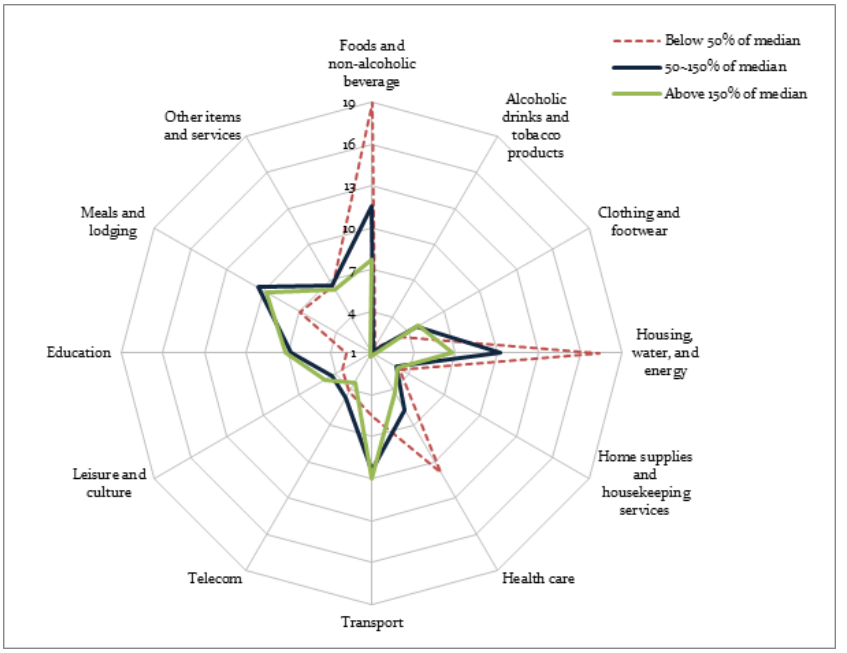
Now that the consumption poverty rate is on a rapid rise for low-income households, it is crucial for policymakers to see

both this growing poverty and identify which categories of spending exert the greatest burden.

B. Low-Income Class Spending by Category and Risk of Deprivation

As of 2015, low-income households spent a far greater proportion of their income on groceries, housing, and health care than the other income classes. Despite this, these households still spent less on food, accommodations and education than other households. The drop in low-income class spending on education reflects the changing household structure of the class. In 2015, only 9.3 percent of the members of low-income households were minors aged six to 18, but 18.6 percent for the other classes. The low-income class also includes considerably more elderly households than the other classes, which explains the relatively greater spending on health care. Policymakers ought to note that the low-income class is made up of diverse household types and diverse needs when seeking to understand the risk of deprivation that households in this class face.

[Figure 2] Household Consumption Expenditures of Different Income Groups on Various Items (2015)



Source: Statistics Korea (2015). Household Trend Survey (raw data).

We now turn to the risk of deprivation the low-income class faces in spending on housing, education, and health care. Assuming that households with similar needs and spending less than the median on each given category face a greater risk of being deprived of the goods and services making up that category, we can compare the income classes in terms of the proportions of deprived households within them. Average household spending is more likely to be influenced by the spending patterns of the upper income class, so we refer to the median

household spending level instead.

As for housing, we examine the proportion of households living in rented homes and spending less than the median on monthly rent. As for education, we examine the proportion of households with children enrolled in primary, secondary, and post-secondary education institutes and spending less than the median on (public and private) education. As for health care, we look into the proportion of households with chronically ill members (under treatment or care for six months or longer) and spending the median level or less on health care. Households with members diagnosed with chronic conditions (i.e., hypertension, diabetes, arthritis, lower back pain (lumbago), sciatica, or herniated discs) are also examined. Our analysis of spending on health care additionally takes into account health care and benefits that households receive from the government and examines whether such public assistance has helped them reduce their spending in this area.

Households spending less than the median on monthly rent make up 64.6 percent and 55.1 percent, respectively, of the low-income class in Seoul and rural counties. The proportions for the other classes are 46.8 percent and 47.4 percent, respectively.

〈Table 3〉 Proportion of Households Spending Less Than the Median on Monthly Rent

(Unit: %)

Class \ Region	Seoul	Metropolitan cities	Cities	Rural counties	Mixed counties
Overall	50.6	50.3	50.2	50.0	56.3
Low-income	64.6	67.7	63.4	55.1	44.3
Other	46.8	40.0	44.4	47.3	59.3

Source: KIHASA (2015). Korean Welfare Panel Survey (raw data).

Households with children registered in primary and/or secondary schools and spending less than the median on education make up a vast bulk—87 percent—of the low-income class, and only 46.9 percent of the other classes. Households with college-enrolled children spending less than the median on education make up 61 percent of the low-income class and 49.3 percent of the other classes.

〈Table 4〉 Households with School-Registered Children & Spending Less than the Median on Education

(Unit: %)

Class \ Region	With children in primary and/or secondary schools	With children in postsecondary education
Overall	50.1	50.0
Low-income	86.5	61.4
Other income classes	46.9	49.3

Source: KIHASA (2015).

Households with chronically ill members spending less than the median on health care make up 63.6 percent of the low-income class and 45 percent of the other classes. Households with persons diagnosed with chronic conditions, such as hypertension, and spending less than the median on health care are also over-represented in the low-income class.

One could assume that health care and benefits provided by the government may have kept spending by the low-income class in this area down. Even with this factor taken into account, households with chronically ill members and spending less than the median on health care make up 61 percent of the low-income class, while households with persons diagnosed with major chronic illnesses, such as hypertension, and spending less than the median on health care make up 57 percent of the same class. Being on government care makes little difference to the amount of money low-income class households spend on health care because the government care programs employ eligibility criteria that strictly limit the number of benefitting households in the first place.

〈Table 5〉 Households with Chronically Ill Members Spending Less than the Median on Health Care

(Unit: %)

Households / Class	With chronically ill members			With persons with major chronic conditions (hypertension, etc.)		
	Overall	On government care	Other	Overall	On government care	Other
Overall	50.5	50.3	51.1	50.2	50.3	50.3
Low-income	63.6	61.5	61.0	63.0	62.5	57.3
Other	45.0	40.3	49.7	44.7	40.1	49.3

Source: KIHASA (2015).

2. Consumption Patterns of Low-Income Households

A. Inter-Class Comparison of Basic Statistics

Low-income households start with smaller amounts of general and earned income, spending, and even numbers of household members than other classes. Low-income household heads also tend to be older than their counterparts in other classes. The proportion of households with female heads is greater in this class than others. Relatively fewer low-income class households are found in urban areas. These households also have relatively fewer children and more seniors as members. Many household heads and members are either unemployed or work in temporary jobs. While the amount of in-

come that the low-income class spends on reducing debt is less than that of the other classes, in terms of how much they make, it is still a significant proportion. Low-income class households receive greater amounts of public assistance, but not significantly more than the other classes.

In analyzing the factors influencing spending patterns, we need first identify the factors that create differences in the spending patterns of different classes. The model we have set up for this analysis shows significant explanatory power, with a modified R^2 value of 0.41. All the input variables retain significance at the 0.01 level.

〈Table 6〉 Basic Statistics on the Income Classes

Variable		Low-income class	Other classes	Overall
Mean (S.D.)				
Household spending		856307.8 (602603.540)	2506758.1 (1381170.471)	2,206,336.9 (1,425,508.095)
Number of household members		1.7 (1.014)	2.9 (1.234)	2.7 (1.287)
Age of household head		65.8 (14.660)	48.9 (12.160)	52.0 (14.229)
Number of children		0.2 (0.615)	0.8 (0.960)	0.7 (0.937)
Number of seniors		0.9 (0.718)	0.2 (0.560)	0.4 (0.640)
Ordinary income		708,147.1 (434,483.883)	4,189,883.8 (2,323,669.670)	3,556,125.0 (2,501,181.154)
Earned income		203,004.1 (378,653.043)	2,887,129.8 (2534906.241)	2,398,555.2 (2,520,892.566)
Spending on reducing debt		174,138.5 (541,193.703)	1,208,006.1 (1,685,402.345)	1,019,817.6 (1,592,478.545)
Public assistance		66,063.8 (167,901.653)	49,905.6 (198764.779)	52,846.8 (193,614.159)
Proportions (%)				
Living location	Urban	80.1	86.3	85.1
	Rural	19.9	13.7	14.9
Gender of household head	Male	43.6	77.9	71.7
	Female	56.4	22.1	28.3
Working status of household head	Full-time	3.4	50.2	41.7
	Other	30.3	38.8	37.3
	Unemployed	66.3	10.9	21.0
Home ownership status	Owning	60.8	63.8	63.2
	Renting	39.2	36.2	36.8

Source: Statistics Korea (2014).

The number of household members is clearly a decisive factor in the amounts of income households spend. These amounts also increase in proportion to the age of the household heads up to a certain point, before sliding down again. The spending curve in relation to age takes the shape of an upside-down U, as does the income curve, but likely moves at a steeper angle than the income curve. Further analysis is needed to determine the positions and angles of the spending curve, though. The numbers of seniors and children as household members negatively affect spending. As previous studies on minimum income show, elderly households and single-parent households with dependent children spend far less on household necessities than adult households.

Income has a significant positive influence on spending. This again confirms the conclusion reached by existing literature that relatively smaller incomes (characteristic of the poor) limit household spending. However, the amounts of earned income and public assistance are inversely correlated to low-income class spending. This is probably because earning higher incomes likely deprive one of the time and opportunity to spend that income on shopping, and because the amounts of public assistance one receives generally increase with one's financial insecurity, which inhibits spending. At any rate, we need more analysis and discussion to test these hypotheses. In the meantime, the amounts of spending on reducing debt positively af-

fect spending in general. Yet we need additional analysis to determine whether this is due to the smoothing effect of income as held by the lifecycle hypothesis or because households incur greater debt to meet their consumption needs. Interestingly, having a full-time or part-time job negatively affects consumption more than being unemployed. Having a part-time job, in particular, leads to less consumption than having no job. Home ownership status, used as a proxy variable for assets, shows that households that own their own homes rather than renting tend to spend more.

The consumption patterns of the other income groups are quite similar to those of the low-income group, except for the fact that having children means greater consumption for the other groups. This is likely because the other income groups tend to spend significantly more on educating their children. This, in turn, suggests the growth and perpetuation of the poverty trap that is consolidated with the education gap between the income groups. The amounts of public assistance also positively affect consumption by the other income groups, leading us to assume that semi-universal cash allowances and social insurance benefits for the middle- and high-income groups assuage their worries about financial security and promote consumption.

〈Table 7〉 Regression Analysis on the Decisive Factors of Consumption

	Low-income group	Other income groups	Overall
Constant	449933.719***	-326867.525***	-83935.114***
Urban (Base = rural)	.021***	.016***	.015***
Number of household heads	.415***	.184***	.188***
Gender of household head (Base = male)	.065***	.024***	.025***
Age of household head	.131***	.313***	.242***
Age of household head, squared	-.277***	-.345***	-.289***
Full-time job (Base = unemployed)	-.029***	-.024***	-.017***
Other employment status (Base = unemployed)	-.102***	-.059***	-.052***
Home ownership status	.026***	.007***	.010***
Number of school-registered children	-.088***	.053***	.042***
Number of seniors	-.168***	-.038***	-.052***
Ordinary income	.161***	.558***	.588***
Earned income	-.032***	-.110***	-.107***
Amount of public assistance	-.051***	.003***	-.003***
Spending on debt reduction	.180***	.156***	.146***
R2	0.406	0.524	0.613
Modified R2	0.406	0.524	0.613

Source: Statistics Korea (2014).

B. Consumption Patterns of the Low-Income Group

The low-income group is not a monolithic structure, but consists of diverse household types and needs. Using means and averages is therefore not a particularly well-suited way of

understanding the needs of this group. It makes more sense, for policymaking, to identify different subgroups making up this group and understand their specific needs. One way to do this is to analyze the diverse spending patterns of low-income households.

Our clustering analysis of consumption by category reveals four clusters. Cluster 1 is made up of basic living spenders; Cluster 2, housing spenders; Cluster 3, education spenders; and Cluster 4, health spenders. The basic living spenders have little income in the first place, and spend the majority of their income on groceries, and not much on other spending categories. Housing spenders spend most of their income on paying down mortgages, renting, and maintaining their homes. While education spenders also spend significant amounts on housing, they spend relatively more on the education of their children. They also spend a significant proportion of their income on communications and transportation. Finally, health spenders are characterized by their especially high spending on health care.

Clusters 1 through 4 make up 30.3 percent, 20.5 percent, 33.2 percent, and 16.0 percent of the low-income group. High education spending is correlated to high spending on communications and transportation as well as entertainment. This likely reflects the influences of the number of household members, the overall age makeup of the household, and the

amounts of income. This clearly contrasts the conclusion of the existing literature that primarily considered only the basic needs of the clusters. Previous studies failed to show differences between low-income households in the amounts of income they spend on communications, parenting, and for social purposes.

Basic living and health spender households tend to be smaller in size and have older household heads. Housing spender households were not so large in size, either, and also have older household heads. However, the basic living and health spender households tend to have small incomes and low spending, while receiving relatively greater public assistance. Housing spenders, on the other hand, are largely excluded from public assistance and also show low levels of income due to this exclusion. Education spenders tend to have higher incomes and spending levels, but also more household members. The heads of these households are likely employed, supporting dependent children.

〈Table 8〉 Characteristics of Spending Groups

Spending category	Amount of spending (KRW)					Proportion (%)				
	1	2	3	4	Total	1	2	3	4	Total
Groceries and non-alcoholic beverages	192,221	130,355	131,588	137,247	150,590	40.6	23.8	16.5	20.6	26.0
Apparel and shoes	18,385	18,953	44,802	21,706	27,797	3.5	3.1	4.8	2.8	3.7
Housing and utilities	84,901	187,353	160,382	97,757	133,030	17.7	32.9	20.9	15.1	21.5
Housing and utilities (NBLSP)	65,309	153,600	78,364	77,410	89,703	13.9	27.1	9.8	12.1	15.0
Home essentials and domestic help	17,527	34,295	31,694	24,773	26,830	3.4	5.3	3.0	3.4	3.6
Health care	44,770	52,155	48,858	248,481	80,329	9.1	9.4	5.7	34.1	12.1
Health care (NBLSP)	41,893	48,390	44,843	243,402	76,538	8.6	8.8	5.3	33.4	11.5
Transportation	24,712	28,753	88,539	31,734	47,839	5.0	5.1	9.1	4.4	6.3
Communications	18,791	26,337	57,690	24,596	34,174	3.9	4.9	7.1	3.5	5.1
Entertainment	19,440	18,544	47,291	22,228	28,942	4.1	3.5	5.1	3.3	4.2
Education	1,292	1,528	49,163	3,702	17,606	0.2	0.2	4.9	0.3	1.8
Education (NBLSP)	814	624	42,860	3,026	15,076	0.2	0.1	4.3	0.2	1.5
Food and accommodations	25,677	30,045	108,574	38,640	56,150	5.0	5.2	12.8	5.0	7.7
Other goods and services	29,985	28,291	76,281	52,506	48,607	6.1	5.0	7.6	6.0	6.4
Urban or rural	-	-	-	-	-	77.3	79.4	82.2	82.0	80.1

Source: Statistics Korea (2014).

〈Table 9〉 General Characteristics of Each Cluster

Cluster	No. of household members	No. of working members	Age of household head	No. of school-registered children	Monthly rent appraised (KRW)	Ordinary income (KRW)	Ordinary tax (KRW)	Spending (KRW)	Public assistance (KRW)
1	1.50	0.33	71.49	0.00	515	638,817	9,648	484,312	63,808
2	1.50	0.35	70.16	0.02	624	617,497	13,541	564,814	41,788
3	2.10	0.60	55.08	0.04	519	863,562	17,671	862,166	51,019
4	1.60	0.32	71.46	0.00	574	633,577	14,104	712,884	50,808
Total	1.72	0.42	65.77	0.02	548	708,147	13,823	662,844	52,960

Source: Statistics Korea (2014).

Housing spenders also include households without fully-employed household heads. There are also households headed by elderly retirees who continue to live in urban areas while paying high rent.

3. Decisive Factors of Low-Income Households' Consumption Patterns

Our multinomial logit analysis on the spending clusters, with the basic living spenders as the reference group, shows that housing spenders tend to have more household members and household heads relatively advanced in age, but fewer senior members. These households also have relatively more working members and male household heads. Households owning their own homes are unlikely to be found in this cluster. Compared to basic living spenders, housing spenders are more likely to

have male household heads working in urban areas; education spenders, more likely to have more household members, fewer senior members, more school-registered children, and male household heads working in non-urban areas; health spenders, more likely to have more household members, more working members, fewer senior and underage members, and to own homes in urban areas with more female household heads than male ones. Compared to all other clusters, the basic living spenders are the most likely to include seniors earning little income and living in urban areas.

〈Table 10〉 Analysis of the Decisive Factors in Spending Patterns (by spender category)

	Housing vs. basic living	Education vs. basic living	Health vs. basic living
Constant	.199**	1.249**	-.785**
Number of household members	.101**	.305**	.117**
Age of household head	.005**	-.029**	.012**
Number of school-registered children	-25.953	.192**	-.148**
Number of seniors	-.470**	-.968**	-.107**
Number of working members	.558**	.557**	.305**
Earned income	.000**	.000**	.000**
Spending on debt reduction	.000**	.000**	.000**
Public assistance	.000**	.000**	.000**
Urban (vs. rural)	.113**	-.045**	.291**
Male household head (vs. female)	.048**	.789**	-.005**
Full-time employed (vs. unemployed)	1.077**	.097**	1.324**
Part-time employed (vs. unemployed)	-.604**	-.866**	-.632**
Home-owning	-.116**	-.1.286**	.088**

Source: Statistics Korea (2014).

Our analysis reveals that household needs exert decisive influences on the likelihood of each household belonging to a given cluster. For education spenders, as one example, the number of school-registered children in the household serves

as a decisive factor in spending, unlike for basic living spenders. Housing spenders are more likely than basic living spenders to reside in urban areas and rented homes. Health spenders are unlikely to be affected by the number of seniors as household members, presumably because seniors earn little income and therefore suppress their spending, or because seniors are on government programs providing healthcare.

Resources such as income and public assistance, and of course debt, exert even greater influences on household spending. The influence of the household head's employment status still remains ambiguous. Only the full-time employment of a household head exerts a positive influence on the likelihood of belonging to any of the other spending clusters except for the basic living cluster. Detailed analysis is needed with respect to the influence of job security on consumption by low-income households.

V

Policy Implications

V Policy Implications

Of the variables that were expected to influence consumption patterns of low-income households, the numbers of children and senior members in the household emerged as not so influential after all. This is likely because low-income households are already spending to their limits, without much income to satisfy their needs. The number of children, for example, significantly and positively influences consumption in other income groups, most notably with respect to education. Household variables that represent the needs of basic living, such as the number of household members, exert the greatest influences on low-income class spending levels.

Work as a source of income itself also exerts relatively little influence on low-income class spending. Although full-time employment appears to marginally alleviate the financial pressure of spending compared to part-time employment, the difference is not very significant. It appears that working full time does not necessarily raise the hopes of the low-income class for a better future. Debt, on the other hand, contributes to increasing spending by the low-income class, likely because this debt helps these households satisfy the needs unmet by their income or assets. Asset-owning low-income class households

also tend to spend more than their counterparts, who do not own assets yet and who earn the same level of income and share similar needs. Asset ownership seems to provide a sense of financial security essential to spending. Income still plays a decisive impact on spending levels, while spending levels by themselves do not reveal significant differences in needs. This confirms our theory that, in order to understand the spending patterns of the poor, it is more important to examine how they allocate their spending across different categories rather than analyzing the absolute amounts of money they spend.

Low-income households at the same spending level nonetheless show quite different needs. It is possible to divide these households into a number of clusters according to their spending patterns, such as housing spenders, health spenders, and education spenders. Existing literature on the correlation between poverty and spending has neglected this significant difference in the spending priorities of low-income households. Merely providing financial assistance for basic living would therefore fail to cater to these diverse needs of the poor.

Our multinomial logit analysis reveals the different characteristics of these low-income spender groups. Our analysis provides useful information for prioritizing the forms of policy support needed by different target groups. Health spenders, for example, are more likely than basic living spenders to own their own homes. This suggests that there are a sizable number

of low-income households that are excluded from the government's medicare system due to the strict asset limits it employs.

It is important to cater to the diverse needs of low-income households by diversifying the forms of policy support. Government programs targeting the poor ought to apply different eligibility criteria in providing services catering to basic needs, such as housing, healthcare, and education.

Our study reveals that the poor do not make up a monolithic group, and that they spend limited amounts of the resources they have on quite diverse needs. Analysis like ours that focuses upon spending can take on different designs depending on the policy issues and priorities of concern. The lower a household's income level, the less the differences in the income it spends on different spending categories. It is thus crucial to improve the existing techniques of analysis, and develop more refined ones, that can capture the differences in needs even from marginal differences in spending patterns. Future analysis should also take note of the fact that the extremely limited nature of the resources available to low-income households will likely deprive these households of the ability to meet certain needs if they spend large portions of their income on other needs.

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