

# Economic Status of the Korean Elderly Women : How Secure Are They?<sup>1</sup>

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## Abstract

This study examined the economic status of elderly women and specified risk factors for elderly women in poverty. The contributions of this study were to improve the understanding of the economic conditions of older women and to provide considerable policy implications for elderly demographic changes in the future.

The data for this study were from the baseline wave of the Korean Longitudinal Study of Aging (KLoSA) and the sample consists of 2,419 elderly women. To examine the economic status of older women, poverty rates based on absolute and relative poverty thresholds were used, and income portfolios were analyzed. Multivariate analysis was used to provide an estimate of the extent to which older women correlated with poverty.

The major findings were: (1) the poverty rate for elderly women was more than 40 percent in a given year; (2) older women living alone were economically vulnerable in terms of poverty rate and income distribution; (3) private transfers were the main source of income for older women living alone and for poor elderly women in general; (4) elderly women's living arrangement, current employment status, holding of income from assets, pensions, and private transfers, net-worth level, and educational attainment correlated with elderly women poverty; (5) incomes from government transfers were not sufficient to preclude poverty among older women in later stages of life. Thus, income maintenance programs for poor elderly women need to be strengthened in order to prevent older women from becoming poor. In addition, improving younger women's life chances by expanding their lifetime work is needed in order to make possible their financial security in later life.

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## Key words

economic status, elderly women, poverty rate, private transfers, public transfer

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## Introduction

In Korea, the fertility rate has begun to decline at an unprecedented rate, and the elderly population growth has been outpacing the historical national average. Lowered fertility rates and improved health longevity are allowing the population to live longer. In fact, in 2000 the elderly aged 65 and over accounted for 7.2 percent of the total population; Korea has become an aging society. As a result of increased longevity, such demographic changes can greatly affect the economic security of overall elderly population.

In terms of their financial security, the elderly are the group most vulnerable to uncertainty, even though several income compensation programs have been established in order to transfer resources to the elderly. Many elderly could not recover from an income loss by working or from a large medical expense by borrowing against future labor earnings (Hurd, 1989). Most Korean elderly were less satisfied with their current income and they mostly depended on private transfers from family as a main income source. Furthermore, many elderly persons received financially inadequate income: in 2003, almost one-half of the elderly reported having no income, and in 2004, about 14 percent of the elderly received income from any pension (KNSO, 2005). As a result, the elderly who have unstable economic conditions have no option for supporting themselves at times of financial uncertainty such as an income loss or medical problems, as long as their family is responsible for helping them. However, the decline of the fertility rate, the likelihood of being in a nuclear family, and the lack of sufficient public assistance for the elderly have significantly accelerated economic vulnerability for the elderly in Korea.

Overall, most women of the elderly population are more likely to experience declines in income and the actual changes in economic well being. Many women face very difficult circumstances in life due to having experienced discrimination and economic vulnerability throughout their life (Choi, 2005; Choudhury & Leonesio, 1997; McDonald, 1997; Prus, 2000). Poverty was also disproportionately to females, divorced, abandoned, or widowed (Hardy & Hazelrigg, 1993). Women are more likely to be widowed due to their longer life expectancies and the propensity of men to marry younger; about half of women over the age of 65 were

widows (U.S. Census Bureau, 2007). Older women without a spouse are more likely than men to face threats to their economic security. Those women who have not worked are dependent in their later years on their spouse's lifetime earning record. In fact, it is the loss of a spouse and his economic resources that is associated with declines in the economic well-being of older women (Burkhauser, Butler, & Holden, 1991; Zick & Smith, 1991). As labor market involvement of women increases, older women contribute to employer-based retirement benefits for their own retirement income. However, more working men than working women (74 percent versus 69 percent) save for retirement, and women receive lower retirement benefits than men (U.S. Census Bureau, 2005). The risks of poverty for older women are directly related to certain life conditions, including low educational attainment, limited occupational opportunities, spousal death, dissolution of marriage, and so forth. Among various risk factors, some events later in the life course, in particular spousal death, have gender-differentiated impacts. Therefore, economic security in later life is the most pressing concern for elderly women with the rise of the aging population.

In the U.S., upon the loss of their spouse, women's income can be dramatically reduced due to lower Social Security Benefits and loss of pension income. Three out of every four older poor individuals are women, with women being twice as likely to be living in poverty as men in the U.S. (Choudhury & Leonesio, 1997). The combination of the increasing divorce rate and women's longer life expectancy greatly reduces the financial security for women in the older age group (Orel, Ford, & Brock, 2004).

In Korea, 41.2 percent of elderly women were in poverty, compared to 31.2 percent of male counterparts (Seok & Lim, 2007). In addition, Seok and Lim (2007) showed that the income level of elderly women was about less than one third of the average income of their male age-peers. Approximately 34 percent of elderly older women were the highest beneficiaries of the National Basic Livelihood Security System (NBLSS), which serves as a last resort for the lower income bracket (Kang & Kim, 2009).

Because of the high prevalence of poverty rate of elderly women and the continuous aging of the population in Korea, it is important to examine the economic status of elderly women in order to suggest policy implications for improving the later life of elderly women. The first part of

this paper discusses the poverty rate of the Korean elderly women. In the actual analysis, absolute and relative poverty threshold were chosen as representing the economic status of this group. The second part of this paper discusses the income portfolio of the Korean elderly women. It is shown that the relative contribution of public and private transfers as main income sources to old-age income security is considered. The last part of this paper provides results of multivariate analyses to specify risk factors of elderly women in poverty.

### Government Programs for the Economic Security of the Elderly

In the past decades, the Korean government provided very limited social protection for the poor under the Livelihood Protection System (LPS). Although the LPS Act was amended in 1986, this program still failed to meet the demands for effective public assistance to the poor. According to the amendment, people aged 65 or older and children aged 17 or younger could receive LPS benefits if they did not have any family support or did not expect any financial help from their family. However, there are several problems with this program (Kim & Kim, 2004) first, an insufficient government budget for the LPS, about 0.2 percent of the GNP, was restricted in terms of the benefit amount; second, the selection procedure of recipients was unfair because it was conducted without a means test; and third, the level of benefit did not make adjustments for different-sized families using an equivalence scale.

The Korean financial crisis in 1997 triggered reform to the LPS since the number of the poor requiring urgent social support was rapidly rising. In 2000 the National Basic Livelihood Security System (NBLSS) replaced the LPS. Although the NBLSS did not have an age for eligibility, the elderly had a large program participation rate of 25.8 percent among total recipients (Kang & Kim, 2009). Therefore, the NBLSS contributes to the support of the elderly poor as a public assistance program. The NBLSS examines both financial criteria and family responsibility at the same time to determine eligibility. To be eligible for this program, individuals must have limited income and assets and must not have any family member liable to support them. In fact, a large number of the elderly poor are excluded from the NBLSS benefits due to the determi-

nant of the family responsibility rule. Since the initial year of the implementation of NBLSS, the number of recipients has slightly expanded, but the recipient percentage of the elderly population has settled at around 8~9 percent.

Unlike people in developed economies, whose main source of income shifts from employment to pension income upon retirement, few Koreans have pensions. This is partly due to the country's immature National Pension Scheme (NPS). The National Pension Act was enacted on January 1, 1988 for workplaces with ten or more employees. The compulsory coverage was gradually expanded, eventually becoming the national pension scheme for the public in 2006 (National Pension Service, 2006). The compulsory coverage was extended to workers at workplace with five or more employees in 1992, less than five employees in rural areas, farmers, and fisherman in 1995, and the urban self-employed and employer and employees at workplace with less than five workers in 1999. Other public pension schemes in Korea include Government Employees Pension implemented in 1960, Military Personnel Pension (1963), Private School Teacher's Pension (1975), and Specially Designated Post Office Personnel Pension (1992). Because it is not a pay-as-you-go system, only limited numbers of the elderly are beneficiaries of the NPS. About 17.1 million people were enrolled in the NPS and 1.8 million people received the NPS benefits in 2005 (NPS, 2006). As a result of fiscal insolvency, the NPS income replacement rates began to reduced in 2008, with a planned total reduction to 40 percent by 2028. Despite this drop in income replacement percentage, the contribution rate will remain at nine percent.

In an effort to reduce elderly poverty and to complement the NPS, the Korean government introduced a means-tested income support program, the Basic Old Age Support Pension (BOASP), in January of 2008. About 60 percent of the elderly will receive five percent of the mean NPS, which is 84,000 won per month as the BOASP benefits. The BOASP program does not count private transfers for the means testing, whereas the NBLSS restricts its benefits to those who do not have any family members who are legally responsible or are financially unable to support them. Such eligibility criteria based on kinship assumes that informal support mechanisms will provide full old-age income support. However, with the weakening of these support mechanisms, the BOASP was introduced

without consideration of kinship network. At the beginning of 2008, the Korean government amended the NPS and the BOASP, in order to (1) increase the BOASP benefits from five percent to 20 percent and expand the coverage from 60 percent to 100 percent of the elderly population, and (2) to reduce the NPS benefits from 40 percent to 25 percent, while maintaining the current contribution rate of nine percent.

### Factors Associated with Poverty among Older Women

Socio-Economic Status (SES) is an important attribute in many studies on economic status of the elderly. Although the consumption opportunities available to an individual or household are conceptually suitable for measuring economic status, income is the most widely used measure of economic status (Hurd, 1989). In order to examine the distribution of income, the poverty rate, the fraction of a population whose incomes fall below the official poverty threshold is often used to measure it. Thus, the socio-demographic characteristics of the elderly such as age, educational attainment, marital status, residence, wealth, and job history are important factors associated with elderly poverty (Choi, 2007; Choi & Ryu, 2003; Kang & Kim, 2009; McLaughlin & Jensen, 2000).

For the last 40 years, the improved economic security of the aged population in developed countries is linked to the maturation and expansion of social programs, such as in the United States' Social Security, Supplementary Security Income, and Medicare and Medicaid programs (Barusch, 1994; Hurd, 1989). Since 2000, the elderly poverty rate in the U.S. has been below 11 percent, and that rate has remained stable over time (U.S. Census Bureau, 2007). Despite the well-developed social policies for the elderly poor and the rise of economic security in the elderly population over time, certain sub-population groups among the elderly still remain at high levels of poverty. Those groups include the very old and elderly women who head their own households or who live alone. Additionally, higher poverty rates among elderly women in the U.S. persist and tend to be more common than for men (Burkhauser & Holden, 1982; Minkler & Stone, 1985; Morgan, 2000). The poverty rate for older women in the U.S. is almost twice as high as that for men (Rupp, Strand, & Davies, 2003).

Women's economic vulnerability in old age is caused by their lower

lifetime earnings and insufficient retirement savings (McNamara, O'Grady-Leshane, & Williamson, 2003). Among non-elderly women, their low-paying jobs and occupational segregation further contributed to their poverty status (Heath & Kiler, 1992), and these economic circumstances could have a lasting impact on the economic outcomes of older women's later life (Choudhury & Leonesio, 1997). O'Rand and Henretta (1982) found that among women, interrupted work histories-not working in midlife or entering the labor force after 35 years of age-were associated with significantly less retirement income than lifelong work histories. According to Choudhury and Leonesio (1997), older women who reported two years or less of work experience faced a 40 percent chance of reaching poverty status one or more times during their life, and low hours of paid work in midlife (less than 500 hours per year) were associated with more time spent in poverty in old age compared with women who worked at least 1,000 hours per year (Vartanian & McNamara, 2002).

Marital dissolution is another important dimension explaining elderly poverty. Elderly married couples are less likely to be poor than their single, widowed, or divorced counterparts. Many studies found that widowed and divorced older women experienced higher poverty rates than did their married peers and even unmarried older men (Choudhury & Leonesio, 1997; Crown, Mutschler, Schulz, & Loew, 1993; Weaver, 1997). In 1987, the poverty rates of older married men and women were fewer than six percent, but the poverty rates for unmarried older women were three times as high as that for married older men. Poverty rate for unmarried older women were three to four times as high as that for married older women (Burkhauser, Bulter, & Holden, 1991). Wu (2003) presented that between the years 1989 and 1993, 13 percent of older married couples spent at least one year in poverty, and 1.3 percent among them spent all five years in poverty. On the other hand, 54.2 percent of never-married older persons spent at least one year in poverty, and 11.9 percent spent all five years in poverty (Wu, 2003). Married women who experienced a dissolved marriage had a lower economic status when compared to women in a lifelong marriage (Holden & Kuo, 1996; McNamara et al., 2003). McNamara and his colleague (2003) found that among married women aged 62 or older, the poverty rate of previously divorced or widowed women was 9.6 percent and 10.8 percent, respectively, compared to 8.6 percent of women in a lifelong marriage

(McNamara et al., 2003). Among non-elderly women, their low-paying jobs and occupational segregation further contributed to their poverty status (Heath & Kilker, 1992), and these economic circumstances could have a lasting impact on the economic outcomes of older women's later life (Choudhury & Leonesio, 1997).

Living arrangement also has been a significant factor for elderly women poverty. In Korea, the poverty rate of older women living alone was 63 percent than that of married older couples (Choi & Ryu, 2003). In addition, the likelihood of older women living alone and poor was the highest and income-to-need ratio for them was the lowest (Choi & Ryu, 2003). Thus, the influence of living arrangement on older women's poverty can be a contributing factor in the economic status of elderly women.

Finally, major determinants of economic disadvantages among older women include lower lifetime earnings, fewer years spent in the labor force, fertility experience, relatively long life expectancy, lower pension income, marital dissolution, and major health problems.

## Methodology

### *Data and Sample*

The data for this study is from the 2006 baseline wave of the Korean Longitudinal Study of Aging (KLoSA). The KLoSA is a nationally representative longitudinal survey supported by the Ministry of Labor and conducted by the Korea Labor Institute. The base-year survey was conducted in 2006 with an initial sample of 10,254 respondents from 6,171 households who completed the interview. This panel study has conducted biennial surveys to collect information such as demographics, health status, family structure, marital status, employment status, retirement plans, net worth, and income including public and private support system.

This study sample was drawn from the 2005 Census using a stratified multi-stage area probability sample design. When using the KLoSA, consideration of the complex sample survey design and imputation issues is needed. The KLoSA has employed a multi-stage area probability sample design. In order to take into account this sample survey design, probability sampling, weight and strata were used in estimation. The sample group of this study consisted of women aged 65 or older. Out of 4,155



aged 65 and older, 2,419 were elderly women.

### *Measurement*

#### *Poverty.*

There are several ways to define poverty, but absolute and relative measures are two basic types of income poverty measurement. Absolute measures define a truly basic needs standard that is fixed over time and is updated only for inflation (Iceland, 2005). This means that a completely absolute poverty line has an elasticity of zero with respect to changes in the general standard of living in the society (Ruggles, 1990). Thus, poverty as measured by an absolute level such as the official poverty threshold can be eliminated by economic growth and success.

The Minimum Living Cost (MLC) used to define the absolute poor in Korea. The MLC is not only a threshold with which to estimate who is in poverty, but also an important barometer for determining eligibility for government assistance programs. The MLC is constructed by the market basket method, which estimates the sum of necessities including taxes and other allowed income deductions from income for a reference family. Given the budget for a reference family, the MLC is defined for families with more and fewer members, using an equivalence scale. The MLC makes it possible to define “official poor” among Korean elderly women, but some adjustments must be created beforehand. As mentioned above, the MLC includes taxes and other deductions in the estimation and is calculated on a monthly basis. However, the income data of the KLoSA is based on yearly after-tax income. Thus, the yearly-adjusted MLC, which subtracts taxes and other deductions from the announced MLC, must be used in order to define the official elderly poor women in Korea. To obtain the yearly-adjusted MLC, an equivalence scale, which is used to estimate the MLC corresponding to different family sizes, is applied. Using this threshold, if the family’s income is below the threshold-adjusted MLC, the elderly women in the family are officially considered poor.

A relative measure uses a subjective or arbitrary income cutoff, such as the median, mean or some other quintile, rather than using some fixed standard of adequacy. When applying a relative measure approach, people are considered poor when they lack the amount of income derived

from a certain percentage of the median or mean income in a given society (Wagle, 2002). The relative poverty measure is based on a threshold set at one-half of the family median income initially suggested by Fuchs (1969). The standard of one-half median income as the relative poverty threshold is most commonly employed by researchers who study relative poverty (Burtless & Smeeding, 2001; Iceland, 2005; Rainwater & Smeeding, 2003). To obtain the threshold, equivalence scales should be defined because needs increase as family size grows, but not in a proportional way due to economies of scale in consumption. To account for the differing economic needs of different-sized families, a single parameter equivalence scale, in which equivalence elasticity equals 0.5, is proposed. Although this equivalence scale is not unique, it is a common method used by researchers implementing a relative poverty measure (Burkhauser & Smeeding, 1996; Coulter, Cowell, & Jenkin, 1992; Jenkin & Cowell, 1994). In this study, the relative elderly women in poverty were defined as having their size-adjusted income below one-half of the median income. The elderly are considered relative poor if their size-adjusted income is less than 50 percent of the median income of the sample.

#### *Source of Income.*

The KLoSA includes detailed information about the different sources of income. Respondents were asked questions about their personal income. In this study, we employed income at the family and household levels. Total family income is the sum of the respondent's and her spouse's income, and total household income is the sum of all household members' income. In this study, there are six types of family incomes among older women. First of all, earnings are composed of wage or salary income, income from self-employment or from a side job. Second, asset income includes rental income from primary residence and other properties, interest/dividends and other investment income. Third, pension income is composed of income from the NPS, and occupational pension income from government workers, military personnel, railroad workers, private teachers and postal workers. Fourth, public transfers include government benefits from the NBLSS, unemployment insurance, workers' compensations, veterans' benefits, and other welfare benefits. Fifth, private trans-

fers are the total amount of financial help received from family members. Sixth is other income that includes alimony or royalty.

Binary variables indicating whether or not a respondents and/or her spouse received income from each source are used as well as a set of continuous variables indicating the share of each source of family income. The share of income refers to the total amount of income the elderly respondent and her spouse received from a particular source divided by total household income.

#### *Socio-Economic Status.*

Educational attainments are divided into five groups: (1) no formal schooling, (2) elementary school (1~6th grade), (3) middle school (7~9th grade), (4) high school (10~12th grade), and (5) some college education or more.

Total net-worth is defined as total wealth minus total liability. In KLoSA, each respondent was asked detailed information about different types of wealth and debts. Total net-worth and total income are divided into three levels based on total net-worth or total income percentiles, which are low, mid, and high groups.

#### *Household Type.*

The sample of 2,419 older women is organized into four household types. The living arrangements are (1) older women living alone (WLA, 22.3 percent), (2) older women living with spouse only (WLS, 29.3 percent), (3) older women living with adult children (WLC, 42.1 percent), and (4) older women living with others (WLO, 6.3 percent).

#### *Analysis*

First, we examine the poverty status of Korean elderly women by socio-demographic characteristics, which are age, educational attainment, living arrangement, and residence. Those variables are known key risky factors of poverty, and we reported the poverty rate for each sub-population using absolute and relative poverty thresholds. The descriptive statistics are weighted to account for stratification of sample design for

the data.

Second, we investigate the relative contribution of public and private transfers to the old-age income security for older women by examining their income portfolios. In describing income portfolios of the elderly women, we present first the sources of income, indicating the proportion of elderly women household receiving income from specific income sources, and second we present the share of each source of income as the total amount of family income from particular sources divided by total household income. In addition, we report income source and income distribution by age and living arrangement of older women.

Third and lastly, we examine that factors are correlated with older women poverty, using a probity estimator. The dependent variables are coded as one when older women are in poverty or in low income level. In order to determine whether elderly women are in poverty, the one-year MLC and one-half of the family median income are used.

## Results

### *Poverty Status of Older Women*

Table 1 presents the poverty rate among older women by key socio-demographic characteristics. Age, living arrangements, urban/rural residence, and education are known risk factors of poverty, and therefore we report the poverty rate (i.e., the percentage of the poor) for each sub-population. The descriptive statistics are weighted to account for stratification of the sample design for the data. Poverty rate are calculated using the cut-off of both the MLC and one-half of the total household income for the absolute poor and the relative poor of the elderly women, respectively. Approximately 50 percent of the elderly women are categorized as absolute poor and 41 percent of elderly women are categorized as relative poor, only slightly lower than the absolute rate. The estimate of the poverty rate among older women is fairly higher than that of the government poverty rate of 32 percent. Not surprisingly, the elderly women poor are more likely to be 75 years old, to have less educational attainment, to be living alone, and to live in a rural area. There is no doubt that both age composition and living arrangement are tied to poverty.

Table 1  
*Poverty Status of the Elderly Women by Socio-Demographic Characteristics*

Socio-Demographic Characteristics		Weighted	Poverty Rate (%)	
			Absolute	Relative
All		100.0	49.6	40.7
Age	Age 65-74	60.7	49.1	39.8
	Age 75 +	39.3	50.4	42.1
Education	No school	51.1	55.1	46.2
	Elementary School	35.6	45.3	36.2
	Middle School	7.0	45.1	34.8
	High School	5.1	34.9	27.2
	College or More	1.2	36.0	32.4
Living Arrangement	Living Alone	22.3	72.2	69.4
	Couple Only	29.3	55.7	43.8
	Co-resident Child	42.1	32.1	22.2
	Living with Others	6.3	53.8	43.9
Residence	Urban	66.3	48.9	39.7
	Rural	33.7	51.1	42.6

### *Income Portfolio of Older Women*

Table 2 presents the percent of women having each income source by age and by living arrangement. Compared with total elderly women, the elderly women living alone (WLA) have more earnings, pensions, and income from transfers. In contrast, older women living with spouse (WLS) and children (WLC) have less income from pension and public transfers. The WLC respondents have much less income from asset, pension, and private/public transfers, compared with the WLA respondents. In addition, WLS have more income from employment, asset, and private transfers, compared with WLA. Only about 40 percent of older women among WLA respondents report having used public assistance when they were younger (age 65-74), whereas the rate increases to about 51 percent with older age. However, the rates of receiving income from employment and from private transfers in younger age group decrease by about 10

percent in older age groups. In contrast with WLA respondents, the rate of holding family's financial help among WLS respondents increases from 75.7 percent at aged 65-74 to 81.8 percent at age 75 and older. However, there is no difference between the two age groups in the rate of income from government programs. With respect to WLC respondents, there are minor differences between the two age groups in the public transfer incomes, but the rate of having private transfer income is a little different.

Table 2  
*Income Sources, by Living Arrangement and Age*

		Unit: %				
Age	Income Sources	ALL	WLA	WLS	WLC	WLO
65-74	Earnings	17.6	19.1	22.3	10.3	24.4
	Assets	11.1	8.0	13.9	10.4	7.8
	Pensions	9.8	16.2	6.5	9.3	12.1
	Public Transfers	36.7	39.8	34.9	36.2	40.7
	Private Transfers	71.0	76.6	75.7	62.6	70.2
	Other	0.7	1.6	0.8	0.3	0.0
	(N)	1472	304	574	515	79
75+	Earnings	5.5	9.4	10.3	3.1	1.0
	Assets	8.9	12.4	9.9	6.8	10.0
	Pensions	2.8	4.7	0.0	1.7	9.4
	Public Transfers	45.6	51.3	34.1	45.6	47.6
	Private Transfers	64.7	65.3	81.8	61.1	56.9
	Other	0.2	0.9	0.0	0.0	0.0
	(N)	947	235	127	516	69
All ages	Earnings	12.8	14.8	20.1	6.7	13.1
	Assets	10.3	10.0	13.1	8.6	8.9
	Pensions	7.0	11.1	5.3	5.5	10.8
	Public Transfers	40.2	44.9	34.7	40.9	44.0
	Private Transfers	68.5	71.6	76.8	61.9	63.8
	Other	0.5	1.3	0.6	0.1	0.0
	(N)	2419	539	701	1031	148

*Note.* Percentage of Respondent and/or Respondent's spouse receiving income from each source. WLA=women living alone, WLS=women living with spouse, WLC=women living with children, WLO=women living with others.

Table 3 presents the percent of women having each income source by age and by income levels. At older ages, the probability of paid employment and the wage rate decline in direct correspondence with age. Likewise, the percent of women receiving income from private transfers also decreases with age. In contrast, the probability of having income from public transfers increases as age increases. Older women are less likely to have pension income as they get older. For older women with low income, the probability of received private transfers is the highest, but the rate is the lowest compared with older women with mid or high income.

**Table 3**  
*Income Sources, by Income Level and Age*

		Unit: %		
Age	Income Sources	Low Income	Mid Income	High Income
65-74	Earnings	11.7	38.5	36.3
	Assets	9.7	24.6	31.0
	Pensions	10.5	27.4	26.4
	Public Transfers	38.8	46.2	37.0
	Private Transfers	64.4	72.4	72.2
	Other	0.9	1.3	4.7
	(N)	528	470	444
75+	Earnings	6.4	15.8	18.0
	Assets	7.4	19.5	16.3
	Pensions	5.8	8.7	5.1
	Public Transfers	48.8	44.6	45.4
	Private Transfers	59.6	69.0	66.5
	Other	0.6	0.8	0.4
	(N)	336	264	328
All ages	Earnings	9.6	30.4	28.6
	Assets	8.8	22.8	24.8
	Pensions	8.6	20.7	17.4
	Public Transfers	42.8	45.6	40.5
	Private Transfers	62.5	71.2	69.8
	Other	0.8	1.1	2.9
	(N)	864	734	772

*Note.* Percentage of Respondent and/or Respondent's spouse receiving income from each source.

Table 4 reports the income level by age and living arrangement. WLA respondents stand out most particularly. With respect to living arrangement, there is an obvious difference in income distribution between the WLA respondents and the WLC respondents. The WLA respondents are overrepresented in the lowest income category at 73.5 percent, whereas the WLC respondents are underrepresented in the same category at 15.2 percent. Among older women living alone, for example, the rate of low income increase from the youngest at 67.9 percent to the oldest age groups at 80.5 percent. The WLS respondents in the youngest age group have an even income distribution, but the rate of low income in the oldest age group increases by about 15 percent.

**Table 4**  
*Income Level, by Living Arrangement and Age*

Unit: %						
Age	Income Level	ALL	WLA	WLS	WLC	WLO
65-74	Low Income	36.2	67.9	38.2	15.4	28.2
	Mid Income	33.0	28.4	38.5	29.0	35.7
	High Income	30.7	3.7	23.3	55.5	36.1
	(N)	1442	304	571	489	78
75+	Low Income	37.1	80.5	44.2	15.0	32.9
	Mid Income	28.3	16.9	38.2	30.0	36.1
	High Income	34.7	2.6	17.7	55.0	31.1
	(N)	928	235	126	500	67
All ages	Low Income	36.6	73.5	39.3	15.2	30.5
	Mid Income	31.2	23.3	38.4	29.5	35.9
	High Income	32.3	3.2	22.3	55.3	33.7
	(N)	2370	539	697	989	145

*Note.* WLA=women living alone, WLS=women living with spouse, WLC=women living with children, WLO=women living with others.

The most common income source for older women was income from their family members. Table 5 presents the proportion of older women receiving income from each source by living arrangement. WLA respondents depend entirely on family's financial help (55.1 percent), and they received about 22 percent of their total income from public income



support programs. WLA respondents have less income from their employment (10.9 percent), compared with the total older women (16.3 percent). In contrast, between WLS respondents and WLO respondents have more earnings from employment, WLS respondents are more likely to receive earnings (29 percent). WLC respondents are less likely to receive family's financial support (11.1 percent) and income from employment (9.9 percent), compared with other older women. WLS respondents depend primarily on financial help from family members (37.7 percent) and WLO respondents are more likely to have income from family members (24.3 percent) as well as earnings (23.2 percent).

**Table 5**  
*Mean Income Share by Living Arrangement*

Income Sources	Unit: %				
	ALL	WLA	WLS	WLC	WLO
Family Income					
Earnings	16.3	10.9	29.0	9.9	23.2
Assets	6.1	5.9	11.3	3.1	4.7
Pensions	6.1	5.3	10.8	3.3	8.0
Public Transfers	10.3	21.5	9.4	4.8	13.0
Private Transfers	29.0	55.1	37.7	11.1	24.3
Others	0.4	0.7	0.8	0.1	0.0
Other HH Member's Income	31.8	0.6	1.0	67.6	26.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%

*Note.* WLA=women living alone, WLS=women living with spouse, WLC=women living with children, WLO=women living with others.

Table 6 presents the mean share of each family income sources out of the total income across income levels. About 51 percent of older women with low income rely on their children's income, whereas about nine percent of older women with high income depend on private transfers from family members. About 27 percent of older women with mid income depend on their children's income, and they are more likely to have paid employment as about 22 percent of their total income. Thus, income from private transfers is the most prominent income sources for older women with low income.

**Table 6**  
*Mean Income Share by Income Level*

Income Sources	Low Income	Mid Income	High Income
Family Income			
Earnings	7.6	22.1	19.9
Assets	5.0	7.8	5.7
Pensions	5.5	7.7	5.1
Public Transfers	21.7	7.9	1.0
Private Transfers	50.5	26.8	8.6
Others	0.4	0.3	0.6
Other HH Member's Income	9.3	27.4	59.1
Total	100.0%	100.0%	100.0%

**Table 7**  
*Probit Regressions of Poverty Status among Older Women*

	Absolute Poor Elderly women		Relative Poor Elderly Women		Low Income Elderly Women	
	Coef	z	Coef	z	Coef	z
Age	-0.004	-0.81	-0.003	-0.66	-0.004	-0.74
Live alone	0.138	1.68	0.368	4.54	0.657	7.93
Live with children	-0.960	-13.20	-0.974	-12.93	-1.160	-14.64
Live with others	-0.270	-2.22	-0.226	-1.84	-0.468	-3.71
Current employed	-0.594	-5.98	-0.629	-5.98	-0.717	-6.43
Asset income	-0.568	-7.33	-0.668	-7.97	-0.733	-8.12
Pension	-0.435	-5.32	-0.533	-6.14	-0.623	-6.69
Public transfers	0.071	1.23	0.031	0.53	0.003	0.05
Private transfers	-0.367	-6.04	-0.375	-6.05	-0.367	-5.67
Other income	-0.786	-2.76	-0.530	-1.80	-0.449	-1.45
Elementary school	-0.185	-2.89	-0.206	-3.13	-0.186	-2.72
Middle school	-0.192	-1.71	-0.269	-2.30	-0.247	-2.01
High school	-0.332	-2.45	-0.351	-2.50	-0.382	-2.59
College and more	-0.392	-1.53	-0.250	-0.96	-0.409	-1.45
Low net-worth	0.502	7.09	0.433	5.98	0.372	4.89
Mid net-worth	0.249	3.53	0.185	2.53	0.197	2.57
Con	0.954	2.66	0.702	1.90	0.642	1.65

*Multivariate Analyses*

The multivariate analysis is a straightforward regression model, using a probity estimator, because the dependent variables are measured as binary outcome denoting whether older women are experienced at absolute or relative poverty. Thus, the dependent variables for this study are measured by binary variables indicating entering poverty.

The probity model contains one continuous variable (i.e., age) and five categorical variables - living arrangement, current employment status, holding of each income source, educational attainment, and total net-worth. The following variables are included as determinants of the poverty status of older women.

- Living arrangement (categorized into three contrast terms: living alone, living with children, living with others with couple only as base)
- Current employment status (current employed or unemployed)
- Holding income sources (whether or not older women's household included asset income, pension, income from public transfers, income from private transfers, other income)
- Educational attainment (categorized into four contrast terms: elementary school, middle school, high school, college and more; with no formal schooling as base)
- Total net-worth (divided into two groups: low and mid net-worth; with high net-worth as base)

In general, there is nothing surprising in the fact that respondents living with children or others are less likely than respondents living with a spouse to have income that is below the poverty line. The current employment status is negative associated with older women in poverty. The presence of income from assets, pension, or private transfers is associated with poor elderly women. The net effect of public program receipts among sources of income is not statistically significant to reduce the poverty of older women. Nor is the income correlation of the presence of

income from public transfers an unexpected result. Respondents with low net-worth are more likely than respondents with high net-worth to have income below the poverty level. Living alone, current employment status, having asset income, and having low net worth have large coefficients, but the educational attainment is slightly less discriminative in terms of its effect on older women in poverty.

### Conclusion and Discussion

In this paper, we examine the economic status of older women using a representative sample of women aged 65 and older. The purpose of this study is to examine the income security of elderly women and the impact of different factors associated with on elderly women poverty. The rise of the aging population and the pressure of social policy changes for the elderly will directly affect the later year of the elderly live. Elderly poverty involves many complex factors including elderly individual's attributes, life history, and various experiences across the elderly person's life span. Additionally, elderly poverty is a controversial issue in terms of determining whether or not the elderly are a vulnerable group for obtaining social support. This study contributes to improving the understanding economic situation of older women, in particular elderly poverty, and offers considerable policy implications for preparing for elderly demographic changes in the future.

The major finding of this study is that the poverty rate for the elderly women using absolute and relative threshold in a given year is more than 40 percent. The poverty rate was particularly high as more than 70 percent of elderly were living alone. The poverty rate of older women living with adult children is the lowest, and children play an important role in providing old-age income support for their aging mothers. With respect to living arrangement, the rate of the lowest income group among WLA respondents largely increases from 68 percent to 81 percent with age. At age 75 and above, the rate of older women in the lowest income category among the WLA respondents are two times of those among the WLC respondents.

Second, the presence of income from private transfer among the WLA respondents decreases with age, even though the poverty status of the WLA respondents was severe. In contrast, the percentage having income

from private transfers increases slightly if at all with age among WLS and WLC respondents. Income from family transfers is the main source of income for older women living alone and for poor elderly women, in terms of mean income share.

Third, public transfers are not significant to preclude poverty among older women. According to the result of the probity estimator, the living arrangement; the current employment status; the presence of income from assets, pension, and private transfers; net-worth levels; and educational attainment are associated with the economics security of elderly women. Living with adult children, being currently employed, and having income from investment or private transfers was significantly associated with a lower risk of poverty among older women.

Combined with the results that older women living alone are not only the most likely to have income from public transfers among the old age groups, but are also less likely to have income from private transfers among the old age groups. Also, they are less likely than others to reduce poverty once in it. Although at older ages the risk of poverty increases with age and the abrasion of asset accumulations, factors associated with older women's poverty represent a gender-poverty linkage. The relationship between gender and economic hardship proposes certain policy implications.

First of all, income maintenance programs for poor older women need to be intensified. After controlling other variables, the presence of income from private transfers is statistically insufficient to reduce the risk of poverty. Older women have been more vulnerable to impoverishment because their assets may be eroded with the onset of chronic diseases or insufficient financial preparation for their later life. These facts imply that older women who have insecure economic conditions face intrinsic vulnerability to poverty. Thus, income support programs for poor elderly women would help to prevent older women from becoming poor.

Second, improving the life chances for younger women is needed in terms of preparing them to be economically secure in their later life. Factors such as current employment status and income from assets, pension, and/or private transfers are more likely to reduce the risk of poverty among older women. Over their life times, women are less likely to have interrupted job history and lifetime earning and their financial preparation for old ages must be secured. This is because being female is still

associated with a high risk of impoverishment. In addition, the net effect of the presence of public transfers is not sufficient to preclude poverty of older women. The fact of the matter is, older women who become impoverished are certain to remain in poverty. Thus, a lifetime of work is needed in order to have secure financial independence from their marriage or caregivers within family over the course of their lifetime.

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