FACTORS INFLUENCING PRODUCTIVE ACTIVITIES OF THE KOREAN RURAL ELDERLY

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Keywords
rural elderly, productive activity, paid work, care-giving, volunteer work

Abstract
The purpose of this study was to identify the factors influencing productive activities of the Korean rural elderly. Utilizing data from the 2004 survey "Living Profile and Welfare Service Needs of Older Persons in Korea," this study predicted the productive activities of the rural elderly. All of the ten predicting variables selected from the survey and literature review (age, gender, education, activity limitation, personal income, health, organization, family status, socio-economic status, and job) were found to have significant partial effects on such productive activities as paid work, care-giving and volunteer work. The following are major conclusions: The rural elderly women had more care-giving, whereas men had more volunteer work. Participation in religious or social organizations was a good predictor for participation in a volunteer work. Single-family status was a negative factor for care-giving. Being a farmer or not could explain the paid working time most effectively. The rural elderly with a relatively high socio-economic status have more inclination to participate in a volunteer work. Aging reduces the possibility of sharing the experiences of paid work or care-giving. Activity limitation had a negative partial effect on care-giving. Good health was the only valuable predictor for all kinds of productive activities. Personal income was positively related with paid work and care-giving. The highly educated were more likely to do unpaid productive work.

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Ⅰ. Introduction

Korea is one of the fastest aging nations in the world. With rising life expectancy and a sharp decline in fertility rate, Korea became an aging society in 2000, and will be an aged society in 2018 when the elderly population (aged 65 and over) is projected to reach 14.3%, and a super-aged society by 2026 with an estimated ratio of the elderly population reaching 20.0%[1]. Korea's elderly dependency rate (EDR)[2] becomes higher and higher[3], which poses significant challenges such as the need for long-term care or substantial medical or social support. In terms of aging, the rural community has already entered the super-aged society with the elderly taking up an 18.6% share of the population as of 2005. The EDR of rural community was 8.2 in 1970, which reached 29.0 in 2005. The rural community is aging faster than the urban community by about 20 years.

In the face of this longevity, gerontology scholars have focused on well-being within those extended years and proposed that successful aging is related with productive activities as well as low probability of disease, high functioning, and social support (Rowe & Kahn 1998). Productive activity is any activity that produces goods or services, whether paid for or not (Bass, Caro, & Chen 1993). Productive activities such as volunteering, working, and care-giving are clearly a subset of activities in which older adults engage, and they have a common element: they have social benefit, benefits that extend beyond the individual.

While it depends on the types, quantity, and conditions of activity, volunteering, working, and care-giving are assumed to have such personal benefits as mental health, psychological well-being and survival of the elderly (Glass 1999). In addition, older adults engaged in these productive activities are performing valued functions for the benefit of society. There would be increased

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[1] According to the United Nations, "aging society" is defined as a society where people aged 65 and over (the elderly) accounts for more than 7% of the entire population. By the same token, a society with the elderly accounting for higher than 14% is called "aged society," and a society with the elderly accounting for higher than 20% is called "super-aged society."

[2] The ratio of elderly to the working-age population

[3] The EDR went up from 5.7% in 1970 to 12.6% in 2005.

demand for elders in these roles in future years. The labor market will demand longer work lives (Blondal & Scarpetta, 1998). Growing social problems and reduced public expenditures will demand increased volunteerism (Cnaan& Cwikel, 1992). Increased numbers of the oldest old will require a larger force of caregivers. Thus, our society may require the productive engagement of older adults.

II. Purpose and Objectives of the Study

The purpose of this study was to identify the factors influencing productive activities of the Korean rural elderly. The objectives of this study were as follows:

- Describe the productive activities and the selected predicting variables of the rural elderly.
- Identify the factors influencing productive activities of the rural elderly.

III. Literature Review

Activity has long been associated with improved well-being in later life. However, it is possible that not all activity is created equal to the individual, the family, and society. Productive activity is any activity that produces goods or services, whether paid for or not (Bass, Caro & Chen 1993). Activities included in this definition are volunteering, working, and care-giving. These activities are clearly a subset of activities in which older adults engage, and they have a common element: they have social benefit, benefits that extend beyond the individual.

A substantial body of literature documents a positive relationship between employment and well-being, even when health and financial status are considered. In a recent review of the literature on job loss, retirement, and health, Kasl and Jones (2000) conclude that unemployment is associated with a 20-30% increase in mortality in most studies and that unemployment in-

creases physical illness and psychological distress. Furthermore, Gallo, Bradley, Siegal, & Kasl (2000) found that older adults who were involuntarily laid off had poorer physical functioning and mental health, even after considering their health before the job loss. These researchers conclude that late-stage job loss has important consequences for well-being. They point out that older workers are displaced from jobs more than younger adults and older adults often enter retirement involuntarily.

Many researchers have documented that volunteers have higher levels of well-being and life satisfaction than non-volunteers, suggesting that volunteering can play an important role in maintaining good health in later life. Musick, Herzog, and House (1999) document in an eight-year study of more than 1,200 adults over the age of 65 that volunteers have a lower risk of dying than non-volunteers, even after considering the effects of physical health, socio-economic status, and social connectedness. Moen, Dempster-McClain and Williams (1992) studied a sample of 300 women over a 30-year period and found that volunteering at an earlier time was related to functional ability at a later time.

There are at least four distinct categories of variables that influence the productive activities of older people: environmental variables, situational variables, individual variables, and social policy (Bass and Caro, 2001). The political, economic, and socio-environmental variables that influence individual productive participation include war, famine, political revolution, worldwide economic conditions, substantial demographic shifts, unique historical events, particular influences of a culture, and major world events. These variables are largely outside the control of the individual, but, in some respects, they can be influenced by social policy. It is less likely, for example, for an older person to find employment in an economic recession than in a time of low unemployment.

Situational variables include prescribed roles, obligations and responsibilities, socio-economic status, educational attainment, organizational circumstances, traditions, community context, and health. For the most part, individuals have little choice over situational variables; they are part of the individual's milieu. The way in which these circumstances are configured, however, can create either constraints or opportunities for productive activities.

Individual variables are those that are most frequently discussed when examining productive outcomes. These variables include motivation, drive, crea-

tivity, attitude, aptitude, habits, gender, race, ethnicity, physical features, and genetic profile. While there is often room for the adjustment of individual variables, some variables are inherited and cannot be changed. Individualized variables can influence one's interest in productive participation.

Finally, and perhaps least considered in its influence, is social policy. Social policy determines government and employer policies, pension policy, organizational rules, taxation regulations, priorities, and public and private programs.

Impingement from any one of these four categories can limit the extent to which a person chooses to participate in a productive activity. Alternatively, an incentive or encouragement from any of these variables, particularly from social policy, can encourage greater participation. It is here where economists, policy makers, and planners have begun to consider ways in which policies can remove barriers and provide incentives to encourage those who choose to participate in some form of productive activity.

In Korea, a few researchers have studied the productive activities of the elderly, while researches on those of the rural elderly were very limited. Lee (1994) reported in his study on how the Korean elderly live that 36.7% of the Korean elderly were working for paid work: 24.3% of urban and 53% of rural. She also found that the 85.5% of working rural elderly were engaging in agriculture, most of whom wanted to continue to work for economic reason, not for internal value such as health and self-realization. Similar results were indicated by Chung (1998). Yoon et al.(2004) studied the relationship of productive activities and psychological well-being of the rural elderly in Korea and reported that the women elderly are spending their time in productive activities more than men.

Ⅳ. Methods

1. Data

The analysis reported here utilized data from the survey on the Living Profile and Welfare Service Needs of Older Persons in Korea, which was conducted by Korea Institute for Health and Social Affairs (KIHASA) in 2004[4]. The total

number of rural respondents aged 65 and over was 1,055.

2. Variables

The dependent variables in this study were such productive activities as paid work, care-giving, and volunteer work. Care-giving includes economic support, nursing, childcare, housework, shopping, transportation, and counseling, which the elderly give to relatives or neighbors. The independent variables were selected from those variables which were reported to influence productive activities and were available from the survey, including age, gender, education, activity limitation, personal income, health, organization, family status, socio-economic status, and job. Major operational dentition of the variables were the following: paid work is working hours per week; care-giving is the experience of care-giving for others including economic support, nursing, daycare, house work, shopping support, commuting support, and counseling; organization is the participation in religious organization and social organization; family is whether he/she is single or living together with someone; job is whether he/she is a farmer or not; personal income is monthly personal income; and education is year of education.

3. Analysis

The data were analyzed using the SPSS 12.0 for Window. A multiple linear regression analysis was used to explain the percent variance in such productive activities as paid work and care-giving related to elderly individual and situational variables. A binary logistic regression was employed to identify the significant variables affecting volunteer work. The alpha level was established a priori at 0.05. Also, appropriate descriptive statistics such as frequencies, percentages, and means were used to describe the data.

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4 The aim of the survey was to provide information on the living profile of older persons and suggest ways to adequately respond to dramatic changes in both population ageing and socioeconomic development. The survey was conducted by KIHASA from June 13 to September 10, 2004 (75 days) on 3,278 elderly persons aged 65 and over.

Ⅴ. Results

1. Description of productive activities and the selected variables

Forty seven percent of the rural elderly were working, and their average working hours per week was 16.36, which was almost double that of the urban elderly. Seventy eight percent of the rural elderly had experiences of care-giving, averaging out at 2.04 of total score which came from seven 2-point (1=experienced, 0=not experienced) questions on care-giving experiences such as economic support, nursing, grandchild daycare, housework, shopping support, commuting support, counseling. The score is almost the same as that of the urban elderly. About ten percent of the rural elderly had donated their time to volunteer work, which was 5% less than that of the urban elderly[5].

　　　　Of the rural sample, 62.2% was female. The age was 74.36, and the total number of education years was 4.55 on average[6]. About forty-three percent had a membership in a religious organization, and 32.1% in a social organization. Single family has the proportion of 23.5%. Over a third of the rural elderly were farmers (35.7%) and they thought they belong to the middle or high socio-economic class (35.9%). Seven point two percent of the rural elderly had activity limitation, and 38.4% of them thought their health status was bad. The mean personal income of the rural elderly was 367.4 thousand won per month.

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[5] Of the urban elderly, 20% were working, and their average working hours per week was 8.25. Eighty two percent of the urban elderly had experiences of care-giving, and their care-giving score was 2.10. About sixteen percent of the urban elderly had spent their time on volunteer work.

[6] Twenty three percent of the rural elderly were illiterate and 49% of them had not experienced formal education.

TABLE 1. Operationalization and summary of descriptive statistics of variables

Variables	Definition and Measurement		Statistics
Dependent			
Paid work	working hours per week		16.36hrs
Care-giving	Total score of 2-point (1=experienced, 0=not experienced) seven questions on care-giving experiences such as economic support, nursing, grandchild daycare, housework, shopping support, commuting support, and counseling range: 0~7 (0= experienced nothing, 7= experienced all of them)		2.04
Volunteer Work	1= experienced, 0=otherwise		10.2%
Independent			
			Proportions
Gender	1=female, 0=male		62.2%
Organization	-Religious	1=participating, 0=otherwise	43.2%
	-Social	1=participating, 0=otherwise	32.1%
Family	1=single, 0=otherwise		23.5%
Job	1=farmer, 0=otherwise		35.7%
Socioeconomic Status	1=middle or high class, 0=otherwise		35.9%
Activity Limitation	1=yes, 0=otherwise		7.2%
Health	1=bad, 0=otherwise		38.4%
			Means
Age	Age in years		74.36
Personal Income	Monthly personal income in 10 thousand won		36.74
Education	Years of education		4.55

2. Factors Influencing Productive Activities

Table 2 showed the regression predicting productive activities of the Korean rural elderly. Linear regression on paid work of the rural elderly reflected that four variables had significant partial effects: job, β=0.469 age, β=-0.206 personal income, β=0.181 and health, β=-0.070. The completed model had an adjusted R square of 0.403, F=65.421, and P<0.001.The rural elderly whose jobs were farming spent more time on paid work than the rural elderly with other jobs. Aging was negatively related to the amount of time spent on paid working, while personal income and good health were positively related.

TABLE 2. Regression Predicting Productive Activities

Variables	Paid Work[a]		Care-giving[a]		Volunteer Work[b]	
	b	β	b	β	B	Odds Ratio
Gender	0.866	0.019	0.586***	0.183	-0.832**	0.435
Organization Religious	0.255	0.006	0.110	0.035	0.655**	1.926
Social	1.683	0.036	0.057	0.017	0.921***	2.512
Family	-3.192	-0.062	-1.569***	-0.428	-0.184	0.832
Job	21.468***	0.469	0.253**	0.078	-0.341	0.711
Socioeconomic Status	-0.743	-0.016	-0.126	-0.039	0.812***	2.253
Age	-0.702***	-0.206	-0.049***	-0.203	-0.028	0.973
Activity Limitation	-0.017	-0.002	-0.102***	-0.177	0.067	1.069
Health	-3.174**	-0.07	-0.238**	-0.075	-0.572*	0.565
Personal Income	0.094***	0.181	0.004***	0.115	-0.003	0.997
Education	-0.321	-0.053	0.038**	0.089	0.175***	1.191
Constant	60.142***		6.612***		-2.301	0.100
Model F(df) / chi-square (df)	65.421 (11,1041)		46.565 (11,1041)		156.395 (11)	
P	0.000		0.000		0.000	
Adjusted R^2 / Correct Predictions	0.403		0.323		90.3%	

a: Linear Regression, b: Binary Logistic Regression
*P<0.05, **P<0.01, ***P<0.001

During linear regression on care-giving, eight variables were found to have important predictability: single, $\beta= {}^-0.428$ age, $\beta=0.203$ gender, $\beta=0.183$ activity limitation, $\beta= {}^-0.177$ personal income, $\beta=0.115$ education, $\beta=0.089$ job, $\beta=0.078$ and health, $\beta= {}^-0.075$. The completed model had an adjusted R square of 0.323, F=46.565, and P<0.001. Whereas the single rural elderly had less experience, the female had more experience in care-giving than the otherwise. Aging, personal income, good health, education, and farmer had positive relationships with care-giving activities.

Logistic regression analysis was employed to predict the probability that the elderly would spend their time on volunteer work. A test of the full model versus a model with constant only was statistically significant, $\chi2(11,$ N=1,053)=156.395, p<0.001. The model was able to correctly classify 90.3%. Out of eleven predicting variables, six variables were identified as explainable predictors of volunteer work. Social organization has the odds ratio of 2.512, socioeconomic status of 2.253, religious organization of 1.926, education of 1.191, health of 0.565, and gender of 0.425. The odds radio for social organization indicated that when holding all other variables constant, the rural elders with a membership of a social organization was 2.512 times more likely to do volunteer work than a rural old people without the membership. Inverting the odds ratio for gender revealed that male was 2.136 times more likely to have volunteer work. The higher the socioeconomic status, the more the education and the better the health, and the probability of doing volunteer work rose up.

3. Conclusion & Recommendation

This study was to identify the factors influencing productive activities (paid work, volunteering, and care-giving) of the Korean rural elderly. To predict productive activity, this study employed ten variables available from the 2004 survey titled "Living Profile and Welfare Service Needs of Older Persons in Korea," which was conducted by KIHASA. All of the selected variables (age, gender, education, activity limitation, personal income, health, organization, family status, socio-economic status, and job) had been reported to influence productive activities by previous researches, and this study has found that they had the following significant partial effects on productive activities:

- Gender was a predictor of care-giving and volunteer work. The rural elderly women had more care-giving, whereas men had more volunteer work.
- Religious organization and social organization membership were closely related with volunteer work, but not paid work and care-giving, which meant that their participation in those organizations raised the possibility to do volunteering work.
- Family was negatively related with care-giving, which meant single-family status of the rural elderly was a negative factor of care-giving.
- Job was the best predictor of paid work, even though four other variables were related with it, which meant that the rural elderly farmers had more time in paid work than the other elderly.
- Socioeconomic status was positively related with volunteering, which meant that the rural elderly of a relatively high socioeconomic status had more inclination to participate in volunteer work.
- Age was a negative predictor of paid work and care-giving, which meant that the aging of the rural elderly reduced the possibility to share the experiences of paid work or care-giving.
- Activity limitation had a negative partial effect on care-giving, whereas it was not a significant predictor of paid work or volunteer work.
- Health was the only valuable predictor of all kinds of productive activities. It was assumed that good health could be a prerequisite condition for productive activities.
- Personal income was positively related with paid work and care-giving, but had not significant relationship with volunteer work. Personal income could be not only the outcome of paid work but also the predictor of it, whereas it also could be one of the essential conditions for care-giving.
- Education was the good forecaster of care-giving and volunteer work, which meant that the rural elderly who are highly educated are more likely to do unpaid productive work.

   The rural community of Korea has already entered the super-aged society, which means any rural social policy could not succeed without considering the elderly. There would be more and more social need for the elderly to participate in social, economic, cultural, recreational, and volunteering activities,

which would contribute to the growth and maintenance of personal and social well-being.

Dealt with such productive activities as paid work, care-giving, and volunteering, this study could not include all of the productive activities of the rural elderly for the data limitation. The rural elderly have been doing many other productive activities in their communities, playing such roles as a village guider and a traditional game facilitator for rural tourism.

In addition, the outcomes of productive activities were not investigated in this study. Future study should include more broad and specific rural productive activities and find the relationships these activities have with mental and physical health or well-being, and financial status.

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