

귀농 · 귀촌인의 소득만족도와 자연환경만족도 비교 분석

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Life Satisfaction of Urban-to-Rural Migrants in South Korea - Income vs. Nature -

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ABSTRACT : 농촌인구의 급격한 감소와 고령화 속에서 농촌의 지속가능성을 위한 방안으로 귀농·귀촌의 확대가 부각되고 있다. 본 연구는 귀농·귀촌인의 생활만족도 결정요인을 분석함으로써 도시민의 농촌 이주와 성공적인 정착을 촉진하기 위한 정책적 시사점을 제공하고자 한다. 본 연구는 특히 귀농·귀촌의 주요 동기가 소득이나 농촌의 자연환경이라는 점에서, 생활만족도를 자연환경만족도와 소득만족도로 구분하여 비교 분석하는 데 목적이 있다. 분석에는 순서형 로짓모형과 일반화 로짓모형을 사용하였고, 분석자료는 2016년 「귀농귀촌실태조사」 원자료이다. 분석결과, 귀농·귀촌인의 자연환경만족도는 상당히 높으나 소득만족도는 보통 수준에 미치지 못하였다. 귀농·귀촌의 이유가 자연환경이거나, 귀농·귀촌 시 가족의 지지가 있었거나, 귀농·귀촌 이후 주변 이웃들과 좋은 관계를 유지하거나, 지자체로부터 귀농·귀촌 지원을 받은 경우, 귀농·귀촌인의 소득만족도와 자연환경만족도가 모두 높았다. 이러한 공통적인 요인 이외에 귀농·귀촌인의 소득만족도와 자연환경만족도에 영향을 미치는 요인은 뚜렷한 차이를 보였다. 소득만족도는 현재 가구소득이나 귀농·귀촌 전·후 소득 변화와 같은 경제적 요인에 의해 영향을 받으나, 자연환경만족도는 귀농·귀촌 시 배우자의 동행 여부나 지역사회 참여와 같은 사회적 요인에 의해 주로 영향을 받는 것으로 나타났다.

Key words : Income Satisfaction, Life Satisfaction, Natural Environment, Urban-to-Rural Migrants, South Korea

I. Introduction

According to the United Nations, as of 2018, the global rural population was 3.4 billion, and from 2021, this number is expected to decrease (United Nations 2018). The ratio of the rural population in the world's total population decreased from 70% in 1950 to 45% in 2018 and is expected to further decrease to 32% in 2050 (United

Nations 2018). However, securing the appropriate size of the rural population is essential for the sustainable development of rural areas (Hagihara and Hagihara 1991; Gao et al. 2018).

The decrease in rural population has been particularly noticeable in South Korea (Korea, hereafter) than in other countries. The ratio of the rural population in the total Korean population decreased from approximately 80% in 1950 to 20% in 2000.¹⁾ This sharply contrasts with the distribution of population in the entire world and in more developed regions (e.g., Europe, Northern America, and Japan) where, throughout the same period, the ratio of the

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rural population decreased by 17%p and 20%p, respectively (United Nations 2018). In Korea, the main cause of the decrease in the rural population has been the large-scale migration from rural areas to urban areas that occurred during the country's rapid industrialization process. This rural-to-urban migration of the young generations and the low birth rate, which has been exacerbated in recent years, have accelerated the aging of the rural population in Korea. Currently, the aging rate in the rural areas of Korea is almost double of that in urban areas, which greatly differs from other countries such as the United States and Japan, where the aging rate is not significantly different between rural and urban areas (Jung and Kim 2017).

Thus, due to the severe population aging and the low birth rate, natural population growth can hardly be expected in rural Korea, and a considerable inflow of urban population to rural areas is necessary. Since the late 2000s, in Korea, urban-to-rural migration has largely been driven by an increase in the number of retirees, lack of job opportunities in urban areas because of economic recession, and by a pursuit of the natural environment. As such, urban-to-rural migration in Korea has emerged as a means of relieving the aging problem of the rural population (Roh et al. 2013; Jung et al. 2014) and of maintaining and revitalizing rural areas (Kim 2014; Kim and Kim 2017). Park et al. (2018) demonstrated that the inflow of urban population contributes to the resolution of the over-depopulated rural villages. To secure the rural population, in addition to the continuing influx of new urban-to-rural migrants, their stable settlement in the migrated areas is a critical concern. For the successful settlement of migrants, they must be satisfied with their new rural life; otherwise, they may return to urban areas.

Internal migration, mostly due to employment and living environment, has been a globally observed phenomenon. Accordingly, numerous studies have investigated life satisfaction of internal migrants. However, although many of these studies have focused on individuals who moved from rural areas to urban areas (De Jong et al. 2002; Knight and Gunatilaka 2010; Akay et al. 2014; Mulcahy and Kollamparambil 2016), few studies have investigated life satisfaction of urban-to-rural migrants (Jacob and Brinkerhoff 1997, 1999; Barcus 2004). In Korea, with the growth in the number of urban-to-rural migrants in the late 2000s, several studies have been conducted on their life

satisfaction. These studies have mostly investigated migrants' overall satisfaction with rural life (Park et al. 2006; Hwang et al. 2011; Hong et al., 2013; Kim and Seo 2014; Park 2013) or their satisfaction with their new residential areas and the relationship with local residents (Lee 2008).

The present paper analyzes urban-to-rural migrants' satisfaction with rural life, viewed from the perspective of the sustainability of rural Korea. The main purpose of this study is to compare the levels and the determining factors of income satisfaction and natural environment satisfaction of urban-to-rural migrants in Korea. Considering that income and the natural environment are among the major motivations of urban-to-rural migrants, their satisfaction in these two aspects are crucial to determine migrants' successful settlement in rural areas. Furthermore, in contrast with studies that have relied on small-scale survey data, this study uses the data from the 2016 National Survey of Urban-to-Rural Migration, the first nationwide survey conducted by the Korean Ministry of Agriculture, Food and Rural Affairs. For the analysis of life satisfaction, the ordered logit model and the generalized ordered logit model are employed.

II. Literature Review:

Internal Migration and Life Satisfaction

Migration of individuals is a type of human capital investment and performed by weighting the cost and benefit of the migration (Sjaastad 1962). Internal migration, the migration of individuals from their previous place of residence to another area within a country, changes the geographic environment and sociocultural environment (Hendriks et al. 2016). Accordingly, migration affects individual life satisfaction (Luhmann et al. 2012; Nowok et al. 2013).

Life satisfaction of internal migrants is affected not only by demographic factors and income level but also by migration-related factors, such as the reason for migration and the period after migration. Studies have demonstrated that the overall life satisfaction of internal migrants was lower in women than in men (Akay et al. 2014; Mulcahy and Kollamparambil 2016); however, improvement of life after migration in some specific areas was recognized more

by women than by men (De Jong et al. 2002; Lundholm and Malmberg 2006). Regarding age, in some cases, age correlates with life satisfaction in a U-shaped curve (Melzer 2011; Mulcahy and Kollamparambil 2016), but shows no significant effect on life satisfaction in other cases (Akay et al. 2014). The effect of internal migrants' education on life satisfaction is also uncertain. Although Akay et al. (2014) reported that life satisfaction increased with an increase in education level of internal migrants, Mulcahy and Kollamparambil (2016) did not observe this effect. More specifically, Knight and Gunatilaka (2010) reported that internal migrants' education level has a negative effect on their life satisfaction. According to De Jong et al. (2002) and Lundholm and Malmberg (2006), the effect of education level depends on the type of life satisfaction. In general, income level of internal migrants has a positive correlation with overall life satisfaction (Knight and Gunatilaka 2010; Melzer 2011; Akay et al. 2014; Mulcahy and Kollamparambil 2016). The reason for migration of internal migrations has a strong correlation with the evaluation that the current life is better than the previous life, but whether it is positive or negative also depends on the type of life satisfaction (De Jong et al. 2002; Lundholm and Malmberg 2006).

Overall, relevant studies on life satisfaction of urban-to-rural migrants compared with rural-to-urban migrants, are scarce. One such study was conducted by Jacob and Brinkerhoff (1999), who used the survey data of the "back-to-the-landers" in the United States and found that factors such as "mindfulness" and "time for self" had a significant positive effects on their happiness. In the study by Barcus (2004), approximately half of the urban-to-rural migrants in the United States responded that their residential satisfaction improved after the migration. Gender, marital status, income, and change in household size did not have a positive effect on the change in residential satisfaction.

In Korea, several studies have analyzed small-scale survey data of urban-to-rural migrants or those who migrated to rural areas in specific local areas and have mostly focused on the overall life satisfaction or regional satisfaction. These studies have demonstrated that life satisfaction of urban-to-rural migrants in Korea is significantly affected by factors related to migrants' satisfaction with their income (Hwang et al. 2011; Kim

and Seo 2014), health (Park et al. 2006; Hong et al. 2013; Kim and Seo 2014), and migration preparedness (Hwang et al. 2011; Park 2013). According to Park (2013), preparedness for migration and settlement satisfaction have a greater effect on overall rural life satisfaction than other factors. Kim and Seo (2014) found that life satisfaction was higher in migrants with a higher level of satisfaction with the income earned from economic activities, satisfaction with family relationship, and satisfaction with health. By contrast, Hong et al. (2013) found that city dwellers' and urban-to-rural migrants' self-assessed income, self-perceived health, and internally oriented values had a positive effect on their life satisfaction, but income had no significant effect. Park et al. (2006) showed that life satisfaction of retired urban-to-rural migrants was higher among migrants whose health status was better, who had invested more in migration, and who obtained more substantial benefits from agricultural education received before migration. In addition, Hwang et al. (2011) reported that life satisfaction of urban-to-rural migrants was higher in female migrants, older migrants, migrants who engaged in a longer preparation period for migration, and migrants satisfied with their income and working hours. Finally, Lee (2008) reported that urban-to-rural migrants' satisfaction with the local areas and their relationships with local residents was higher among high school graduates than among college graduates.

III. Methodology

1. Data

The data from the 2016 National Survey of Urban-to-Rural Migration (Ministry of Agriculture, Food and Rural Affairs) were used to analyze life satisfaction of the urban-to-rural migrants. This survey, Korea's first nationwide survey on the urban-to-rural migrants, was conducted for approximately three months, from July to September, 2016, with the households that migrated to rural areas between 2012 and 2015. The survey data provide information about the demographic characteristics of a sample consisting of 2,033 households across Korea; details about the migrants' socio-economic activities, life satisfaction, and regional infrastructure are also available.

Table 1. Definition, measurement and descriptive statistics of variables

Variables	Definition/Measurement	Mean (S.D.)
Dependent variables		
Overall_satis	Overall satisfaction	2.55 (0.61)
HHincome_satis	Household income satisfaction	1.76 (0.73)
Nature_satis	Natural Environment satisfaction (Very) Dissatisfied = 1; Neutral = 2; (Very) Satisfied = 3	2.88 (0.34)
Independent variables		
Gender	Male householder = 1; Female householder = 0	0.90 (0.30)
Age	Dummies for Age of householder	
	Under 50	0.24 (0.43)
	50s	0.38 (0.49)
	60 and over	0.38 (0.49)
Education	Education level of householder: College graduates or above = 1; Otherwise = 0	0.46 (0.50)
Job_experience	Dummies for job experience of householder before migration	
	Professional (professional, managerial, or administrative workers)	0.15 (0.35)
	Non-professional (clerical, sales, service, low-skilled, or production workers)	0.41 (0.49)
	Self-employed	0.29 (0.46)
	Not employed (housewife, students, or unemployed)	0.15 (0.35)
Spouse_present	Householder migrated to rural area with spouse = 1; Otherwise = 0	0.72 (0.45)
Family_support ^a	Family support for migration: (Strongly) Support = 1; Otherwise = 0	0.55 (0.50)
Migration_reason	Dummies for reason for migration	
	Agricultural prospects/Family business	0.16 (0.36)
	Living expenses/Unemployment	0.25 (0.43)
	Natural environment	0.36 (0.48)
	Others (living close to families and relatives, family's health, child education)	0.23 (0.42)
Farmer	Farmer householder = 1; Non-farmer householder = 0	0.49 (0.50)
Neighbor_relation ^a	Relationship with neighbors: (Very) Friendly = 1; Otherwise = 0	0.70 (0.46)
Participation	Participation in community activities (village meetings/events, farmer organization, social organization, and urban-to-rural migrants' community): Participate = 1; Rarely participate = 0	0.82 (0.39)
Lgovern_support ^a	Local government's support for urban-to-rural migrants: (Very) Active = 1; Otherwise = 0	0.12 (0.32)
Change_income	Dummies for change in annual household income after migration	
	same	0.22 (0.41)
	Increased	0.18 (0.39)
	Decreased	0.60 (0.49)
HH_income	Annual household income in ten thousand Korean won	2,935 (3,710)
HH_income(ln)	HH_income in natural log	6.90 (2.52)
House_own	Own house = 1; Otherwise = 0	0.75 (0.43)
Province	Dummies for six provinces	
	Gyeonggi	0.15 (0.36)
	Gangwon	0.11 (0.31)
	Chungcheong	0.23 (0.42)
	Honam	0.25 (0.43)
	Yeongnam	0.23 (0.42)
	Jeju	0.03 (0.18)
N		1,770

Notes: ^aFamily_support, Neighbor_relation, and Lgovern_support were originally measured on a 5-point Likert scale, which was then converted into dummy variables.

2. Empirical Approach

In this study, life satisfaction of urban-to-rural migrants was categorized into overall satisfaction, income satisfaction, and natural environment satisfaction. These individual types of satisfaction were ordinal-type variables measured by a 5-point Likert scale (from “very dissatisfied” to “very satisfied”). Considering the number of responses in each interval of the individual types of satisfaction, satisfaction levels were reconstructed from a 5-point scale to a 3-point scale (1 = dissatisfied, 2 = neutral, 3= satisfied).²⁾

The ordered logit model was employed to analyze the factors determining life satisfaction of urban-to-rural migrants (Eq. 1). The dependent variable y_i , representing the actually observed life satisfaction of an urban-to-rural migrant, and X is an explanatory variable vector affecting life satisfaction of an urban-to-rural migrant. The explanatory variables included the personal characteristics of the household head (gender, age, formal education level, occupation before migration, reason for migration), family characteristics (accompaniment of spouses in migration, family support in the migration process), migration for farming (farmer migrants) versus non-farming purposes, local area-related characteristics (relationship with local residents, participation in community activities, migration support from municipal government, province of residence), and economic characteristics of migrated household (home ownership, change of annual household income after migration, current annual household income). The subscript represents the individual migrants (households), and ϵ is an error term.

$$y_i = X_i\beta + \epsilon_i \quad (1)$$

In the ordered logit model, the odds ratio of all the categories is computed as $\exp(-\beta_k)$. This means that the β determining the cumulative probability of each category is the same, which is referred to as the parallel regression assumption (Long 1997, pp.138-145). Considering the cases where the parallel regression assumption is violated, the generalized ordered logit model (Long and Freese 2006, pp.220-221),³⁾ which estimates the coefficient for each category, are additionally used.

3. Description of Variables

The empirical analysis was conducted by using the responses from the heads of the households or their spouses (N=1,770), excluding incomplete and unreliable responses. Tables 1 present the definitions of the variables used in the empirical analysis and descriptive statistics. The scores for overall satisfaction (2.55) and natural environment satisfaction (2.88) were close to the score for “satisfied” (3 points), and the income satisfaction score (1.76) was lower than the “neutral” score (2 points).

The explanatory variables affecting life satisfaction of urban-to-rural migrants included personal characteristics of the heads of households, family or location-related characteristics, and economic characteristics. Personal characteristics of household heads were as follows: 90% of the household heads were men; 24% were aged younger than 50 years; 46% of the householders had the education level of university graduation or higher. The majority of the householders (41%) were non-professional wage workers before migration, followed by self-employed (29%). The ratios of the migrants whose occupation before migration had been a professional or manager and migrants who had been non-employed were 15% each. The reason for migration was economic for 41% of the migrants, and 36% migrated because of the natural environment. Among the migrants who migrated for an economic reason, those who had migrated due to negative factors (25%), such as unemployment, failure of business, or high living costs in urban areas, outnumbered those who had migrated due to positive factors (16%), such as bright prospects of agriculture and the succession of family business. The remaining 23% of the households migrated for household members' health purposes or for their children's education. Approximately half of the households migrated to engage in agricultural activities.

The family or location-related characteristics of urban-to-rural migration households were as follows: 72% of the migrants were accompanied by their spouses; the ratio of households whose family members had supported urban-to-rural migration was 55%; the ratio of households having a good relationship with local residents was as high as 70%; and the ratio of households participating in community activities including village meetings and events and farmer's organizations was even higher (82%). In

terms of policy support provided by the municipal governments of the local regions, only 12% of the migrants responded that they received such support.

The average annual household income of urban-to-rural migration households (July 2015 to June 2016) was approximately 30 million Korean won. Additionally, 60% of urban-to-rural migration households reported that their annual household income decreased as compared with the year immediately before the migration; 18% reported an increase; and 22% reported no change.⁴⁾

IV. Results

The empirical results regarding the factors that determine life satisfaction of urban-to-rural migrants are reported in Table 2.⁵⁾⁶⁾ First, in terms of personal characteristics of the household heads, their gender did not have a significant effect on life satisfaction. Householders' age had a significant effect on the overall satisfaction and natural environment satisfaction, but not on income satisfaction. The analysis of the overall satisfaction showed that the probability of being satisfied with rural life (compared with the probability of being neutral or dissatisfied) was lower (approximately 80%) in the householders aged in their 50s than in younger householders. This result is consistent with Hwang et al. (2011), who found that the overall life satisfaction was inversely proportional to the age of urban-to-rural migrants. By contrast, the probability of being satisfied with the natural environment (compared with the probability of being neutral or dissatisfied) in householders aged in their 60s or higher was approximately two times as high as that in those younger than 50 years. Regarding the level of formal education, the probability of being satisfied with household income (compared with the probability of being neutral or dissatisfied) in those whose educational level was graduation from a university or higher was 1.3 times as high as that in those whose educational level was graduation from a high school or lower. This finding may be because the average annual household income was far higher in college-graduate householders than those who had not graduated from college. The occupation of householders before migration did not affect their satisfaction with rural life.

Second, regarding family-related characteristics, the

probability of being satisfied with the natural environment (compared with the probability of being neutral or dissatisfied) in the households with accompanying spouses was approximately 1.6 times higher than in those where the spouses did not accompany their husbands (wives). In addition, family support to migrants significantly affected their life satisfaction. In the presence of family support, the probability of the overall satisfaction, income satisfaction, and natural environment satisfaction (compared with the probability of being neutral or dissatisfied) was from 2.2 to 4.4 times higher than in the absence of family support. These findings suggest that accompanying spouses and family support play a critical role in the resolution of difficulties and loneliness experienced in the early stage of migration. The generalized ordered logit analysis showed that in the presence of family support, the probability for the overall satisfaction or income satisfaction to correspond to "neutral" or "satisfied" (compared with the probability of being dissatisfied) was 1.9 to 2.2 times as high, and the probability for the overall satisfaction or income satisfaction to correspond to "satisfied" (compared with the probability of being dissatisfied or neutral) was 3.2 to 4.7 times as high. These results are consistent with the results reported by Kim and Seo (2014), who reported that the relationship with the family has a positive effect on the overall life satisfaction of urban-to-rural migrants.

Third, the reason for migration had a significant effect on migrants' life satisfaction. Compared with those migrants who moved for negative economic factors, such as unemployment or high living costs in urban areas, those who migrated because of the natural environment had a higher probability to be satisfied with overall rural life, household income, and the natural environment. By contrast, those who migrated for positive economic reasons, such as bright prospects of agriculture and the succession of family business, had a lower probability of being satisfied with the household income than those who migrated for negative economic reasons. This finding may be because the expected income from economic activities in rural areas is likely to be higher in the former group than in the latter. The overall satisfaction and income satisfaction were significantly lower in farmer households than in non-farmer households which may be due to the difference in the expectations of rural life between the two groups.⁷⁾ Farmer households had relatively high expectations

Table 2. Determinants of life satisfaction of urban-to-rural migrants: ordered logit model

Variables	Overall			HH_income			Nature		
	Coef.	(S.E.)	Odds ratio	Coef.	(S.E.)	Odds ratio	Coef.	(S.E.)	Odds ratio
Gender	-0.159	(0.196)	0.853	0.205	(0.180)	1.227	-0.319	(0.285)	0.727
Age ^a									
50s	-0.241*	(0.141)	0.785	-0.126	(0.129)	0.881	0.181	(0.202)	1.199
60 and over	0.130	(0.152)	1.139	-0.116	(0.137)	0.890	0.640***	(0.231)	1.897
Education	0.045	(0.116)	1.046	0.270**	(0.106)	1.310	0.225	(0.177)	1.253
Job_experience ^b									
Non-professional	0.054	(0.164)	1.056	0.037	(0.151)	1.037	-0.007	(0.264)	0.993
Self-employed	-0.035	(0.176)	0.966	-0.061	(0.163)	0.941	-0.319	(0.277)	0.727
Not employed	-0.029	(0.211)	0.972	0.018	(0.187)	1.018	-0.338	(0.329)	0.713
Spouse_present	0.118	(0.127)	1.125	0.036	(0.120)	1.037	0.466***	(0.180)	1.594
Family_support	1.483***	(0.113)	4.408	0.804***	(0.103)	2.234	1.113***	(0.181)	3.043
Migration_reason ^c									
Natural environment	0.380***	(0.141)	1.462	0.292**	(0.129)	1.339	0.444***	(0.225)	1.559
Agricultural prospects /Family business	-0.081	(0.172)	0.922	-0.284*	(0.168)	0.753	0.036	(0.248)	1.037
Others	0.210	(0.152)	1.233	0.157	(0.140)	1.170	-0.142	(0.223)	0.868
Farmer	-0.409***	(0.117)	0.664	-0.416***	(0.107)	0.660	-0.279	(0.181)	0.756
Neighbor_relation	0.931***	(0.117)	2.538	0.466***	(0.111)	1.593	0.460***	(0.177)	1.585
Participation	0.353**	(0.145)	1.423	0.051	(0.134)	1.053	0.377*	(0.214)	1.458
Lgovern_support	0.523***	(0.184)	1.688	0.465***	(0.152)	1.592	1.293***	(0.403)	3.642
Change_income ^d									
Increased	-0.118	(0.180)	0.889	-0.155	(0.153)	0.856	-0.305	(0.275)	0.737
Decreased	-0.281*	(0.149)	0.755	-1.205***	(0.128)	0.300	-0.255	(0.237)	0.775
HH_income (ln)	0.069***	(0.021)	1.072	0.230***	(0.025)	1.259	-0.024	(0.035)	0.976
House_own	0.124	(0.125)	1.132	0.118	(0.117)	1.126	-0.251	(0.194)	0.778
Province		Yes			Yes			Yes	
Cut1	-1.487***	(0.358)		0.930***	(0.336)		-4.992***	(0.633)	
Cut2	1.244***	(0.353)		3.377***	(0.345)		-2.168***	(0.579)	
Log_pseudolikelihood	-1259.52			-1549.74			-584.04		
LR_chi ²	436.59***			552.91***			143.15***		
Pseudo R ²	0.15			0.15			0.11		
Observations	1,770			1,770			1,770		

*p < 0.1; **p < 0.05; ***p < 0.1

Notes: ^aUnder 50 was dropped as a reference group. ^bProfessional was dropped as a reference group. ^cLiving expenses/unemployment was dropped as a reference group. ^dSame was dropped as a reference group.

regarding the prospective income obtained from agricultural activities but experienced great difficulties in their agricultural activities due to the lack of farming experience and had a lower household income as compared with other local farmer households.⁸⁾ The difficulties involved in their

farming work and their low household income did not fulfill their expectations about urban-to-rural migration and instead increased their dissatisfaction with household income. By contrast, the overall satisfaction and income satisfaction of non-farmer households were higher than

those of farmer households because migration for non-farmer households was for the natural environment, and they had relatively lower economic expectations about their prospective income after migration.

Fourth, the life satisfaction of urban-to-rural migrants was significantly affected by the relationship between migrants and local residents, participation in community activities, and by the support from municipal governments. The probability for the overall satisfaction, income satisfaction, and natural environment satisfaction to correspond to “satisfied” (compared with the probability of being neutral or dissatisfied) in the migrants who had a good relationship with local residents was 1.6 to 2.5 times as high as that of migrants who did not, and the probability for the overall satisfaction and natural environment satisfaction to correspond with “satisfied” (compared with the probability of being neutral or dissatisfied) was 1.4 to 1.5 times as high in the group of migrants who participated in the community activities, for example, as in the group of migrants who almost did not.⁹⁾ The overall satisfaction, income satisfaction, and natural environment satisfaction were all higher in the cases where municipal governments of the current local regions provided active support to migration households than in the cases where municipal governments did not do so. Many municipal governments in Korea implement various policies to help urban-to-rural migrants successfully settle in rural communities, including financial support, housing support, and support for the good relationship with local residents. Active support from municipal governments appears to have contributed to the stable settlement and improvement of life satisfaction of urban-to-rural migration households having a weak settlement foundation in rural areas in the early stage of their migration. These results are consistent with Park et al.’s (2006) finding, that is, urban-to-rural migrants who make an effort to improve their relationship with local neighbors have a high degree of rural life satisfaction, and with Hwang et al.’s (2011) results, that is, satisfaction with participatory activities in a local community increases life satisfaction of urban-to-rural migrants.

Fifth, the change of the household income before and after migration and the current level of household income had a significant effect on the overall satisfaction and the income satisfaction of the urban-to-rural migrants, but not

on their natural environment satisfaction. Among urban-to-rural migration households, the probability of overall satisfaction and income satisfaction corresponding with “satisfied” (compared with the probability of being neutral or dissatisfied) was 0.3 to 0.8 times lower in the cases when household income had decreased than in the cases when household income remained unchanged. By contrast, life satisfaction was not affected by the change in household income in the cases when income had increased. The current household income of urban-to-rural migration households had a positive effect on overall satisfaction and income satisfaction. According to the results of generalized ordered logit analysis, a one-unit increase in the log household income increased the probability for the income satisfaction to correspond with “neutral” or “satisfied” by 23% as compared with the probability of being dissatisfied and increased the probability for income satisfaction to correspond to “satisfied” by 54% compared with the probability of being dissatisfied or neutral. These results indicate that the current household income is a critical factor for income satisfaction. The results of the generalized ordered logit analysis also showed that owner-occupation of houses of urban-to-rural migrants increased the probability of being satisfied (compared with being dissatisfied or neutral) with household income.

V. Conclusions

In this study, we investigated life satisfaction of urban-to-rural migrants from the perspective of the sustainability of Korean rural areas. In particular, considering that the main reasons for urban-to-rural migration are income and the natural environment, life satisfaction was comparatively analyzed in terms of income satisfaction and natural environment satisfaction. This study contributes to the literature on urban-to-rural migration, which remains scarce compared with the rich literature on rural-to-urban migration worldwide and provides additional information on the different types of life satisfaction of migrants, which are critical to their successful settlement.

The key results are as follows. First, the overall life satisfaction of urban-to-rural migrants ranged between “neutral” and “satisfied,” which is consistent with the results of other studies (Hwang et al. 2011; Kim and Seo

2014; Park et al. 2006). Specifically, although natural environment satisfaction was close to “satisfied,” income satisfaction was below the “neutral” degree, indicating a large gap between these two types of satisfaction. Second, regarding the factors determining life satisfaction, overall satisfaction, income satisfaction, and natural environment satisfaction were all significantly higher when the reason for migration was non-economic, such as the natural environment, than when the reason was economic. Family support, good relationship with local residents, and migration support policies implemented by municipal governments also increased all types of satisfaction among urban-to-rural migrants. These results confirm the previous findings that migrants are more likely to show high satisfaction when they have good relationship with their family (Kim and Seo 2014) and local residents (Park et al. 2006), and actively participate in community activities (Hwang et al. 2011). Third, except for these common factors, the factors determining life satisfaction differed significantly across different types of life satisfaction. Although income satisfaction was mainly affected by economic factors (change of household income before and after migration, current level of household income), natural environment satisfaction was not affected by such factors. Instead, the degree of natural environment satisfaction depended on non-economic factors, such as whether spouses accompanied migrants, or whether migrants participated in local communities. The economic factor that significantly affected the overall satisfaction was the current household income level, and the non-economic factor that significantly affected the overall satisfaction was the participation in local communities.

Based on these results, the following implications can be derived. First, because income satisfaction of urban-to-rural migrants is considerably low, it is critical to support migrants in their attempts to secure a stable income. For example, an occupation linkage program may be implemented to help urban-to-rural migrants to earn income using their initial professional specializations or a supportive policy may be implemented to help farmer migrants resolve the difficulties of farming. Second, considering that life satisfaction of migrants is increased by family support and accompanying spouses, policy measures should promote family support and accompaniment. For example, settlement environment needs to be improved in

rural areas by increasing various amenities including schools and hospitals. Third, as a good relationship with local residents and participation in local communities were found to increase life satisfaction, measures to facilitate such interaction with local residents should be enhanced. The encouragement and subsequent policy support of a mentor program for migrants at the village level could be an example. Fourth, all types of life satisfaction were high when migrants received active support from municipal governments; however, only approximately 10% of migration households were beneficiaries of such support. Therefore, supportive policies implemented by municipal governments must be expanded and the central government may need to provide additional support to municipal governments to actively attract urban-to-rural migrants.

The results of this study highlight the differences between income satisfaction and natural environment satisfaction of urban-to-rural migrants in terms of the level of satisfaction and its determining factors by using the nationwide survey data in Korea. In further research, a notable investigation would be to compare the change in life satisfaction in various facets before and after migration and the underlying factors for such changes.

Notes 1) In Korea, after recording a low point of 18.0% in 2010, the ratio of the rural population started to slowly increase, largely due to the increase in urban-to-rural migrants, which was 18.7% in 2017 (Statistics Korea, Population Census, each year). The ratio of the people who moved from urban areas to rural areas in 2017 was 5.4% of the total rural population in rural areas (Statistics Korea, Statistics of Returned Farmers & Fishermen and Migrants to Rural Regions, 2017; calculation performed by the present authors).

Notes 2) Correlation coefficients between the overall satisfaction, income satisfaction, and natural environment satisfaction ranged from 0.120 to 0.350.

Notes 3) In the generalized ordered logit model, the explanatory variables that satisfy the parallel regression assumption have the same regression coefficients in all categories, but those that do not satisfy the parallel regression assumption have different regression coefficients in each category.

Notes 4) Most of urban-to-rural migration households experienced a decrease in household income for a certain period following their migration to rural areas. In a survey of 1,000 urban-to-rural migrants, Ma et al. (2014, pp.47-48) reported that household income decreased in 65% of migrants compared with the time before migration, and only 14% experienced an increase in income. Likewise, Jung et al.

(2015) showed that urban-to-rural migrants' income in the first year of migration substantially decreased compared with the year immediately before migration, and that income gradually returned to the level prior to migration over time.

Notes 5) The estimation results of the generalized ordered logit model were not significantly different from those obtained using the conventional ordered logit model. Therefore, we report only those results that show a notable difference in the text.

Notes 6) We also measured the overall life satisfaction by averaging the values of six subcategories: income, natural environment, neighborhood, housing environment, health promotion, and local infrastructure, which were included in the 2016 National Survey of Urban-to-Rural Migration (Cronbach's α was 0.70). The estimated results of the determinants of the overall life satisfaction, obtained through this measurement method, did not show a significant difference from those of Table 2.

Notes 7) Approximately one fourth of the farmer migrants had an economic purpose for migration, such as the bright future of agriculture and the succession of family business, and only 6% of the non-farmer migrants had such an economic expectation (Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries & Gallup Korea 2016, p.17).

Notes 8) About 25% of farmer migrants reported farming work as a difficulty involved in rural life, and about 37% of them responded that they needed advice from others regarding farming. The average household income of farming households was about 77% of that of the general farming households and about 59% of that of urban worker households consisting of at least two family members (Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries & Gallup Korea 2016, p.91, p.129, p.279)

Notes 9) Among the community activities, active participation in village meetings/events and social organizations significantly increased migrants' natural environment satisfaction and overall life satisfaction, respectively. On the contrary, participation in farmer organizations or urban-to-rural migrant communities did not show a significant effect on the satisfaction level of the migrants.

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