

fare corporations in northern Kyushu is prominent. Considering the fact that the population of senior citizens in Kashiwa is approximately 60% larger than that of northern Kyushu, and yet the same number of nursing-care services are operated in both urban and rural areas, it is speculated that the number of people who use nursing-care services in each managing agency is larger in Kashiwa than that in northern Kyushu, and the introduction of nursing-care insurance has encouraged new involvement in the nursing-care industry by business corporations in Kashiwa.

Illustrated in Fig.2 is the employment status created by such nursing-care services as above. Although the total number of employees in Kashiwa is greater than that of northern Kyushu, its proportion to the population of senior citizens is unbalanced and nearly half of the employees are part-timers. This implies that business corporations that are newly involved in the nursing-care industry are trying to reduce costs by suppressing the number of full-time employees and recruiting more part-time employees. The survey also focused on current employees' job histories. The findings were used as a barometer to measure the status of job creation in the nursing-care services. In Kashiwa, 25% of the respondents were previously unemployed, and in northern Kyushu, 31% were also previously unemployed. It is roughly translated that since the introduction of the nursing-care insurance, more jobs have been created in the nursing-care industry by approximately 30%. It is noteworthy that female employees occupy 81% of the entire work-

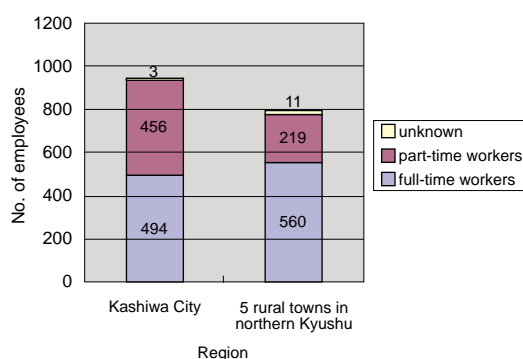


Fig. 2. The Number of Workers by Employment Status in Urban and Rural Area

force and 55% of them are in their 40's and over. This fact casts a shadow over the employment status in the nursing-care industry.

3. Related publications

Aikawa, Y. Kimi H. and Ritsuko Y. "Reactions of Users of the Public Nursing Care Insurance Systems and their Characteristics" *Journal of Agricultural Policy Research* 1.

Aikawa, Y. Motoyuki G. Kimi H. and Ryuzo K. "Situation of Care Service Programs under the Long-term Care Insurance System" *Journal of Agricultural Policy Research* 3.

Research members

Osamu Chiba, Yoshihiko Aikawa, Tomoaki Ono and Motoyuki Goda

Factor Analysis Regarding the Unmarried Status of Rural Young Males and the Trend towards Nuclear Families in semi- Mountainous Areas

Yoshihiko AIKAWA

1. Objective and procedures

The decline in birth rates is a serious problem that continues to grow, and one contributing factor is the increase in unmarried rural young males. The objective of this research is to clarify the current status of the above and its cause. The analysis involves the sorting and compiling of survey data using a statistical method followed by the translation of the statistics into a sociological concept of family.

2. Outline of the results

A survey was carried out in two rural com-

munities of Nagano prefecture. The summary of the survey results has clarified that unmarried males hugely outnumber unmarried females in these communities, and that there is a growing tendency towards married couples living away from their parents. This is supported by the recent census, which points out that the number of the unmarried males is rapidly increasing, and this fact is reflected in the ratio between unmarried females and unmarried males of 1 : 2. Furthermore, the ratio becomes even greater in rural areas as in 1 : 3 and this makes it very difficult for males to find marriage partners in order to succeed their families.

Nevertheless, there is still a strong intention to marry amongst successors of full-time

farm households and they also tend to marry young. Table 1 shows how the backgrounds of farmer successors relate to their marital status, using Analytical Type 2 of Quantification Theory. According to the outcome, those who became involved in the family farming business straight after the completion of education are very likely to be married and this tendency

Table 1. Factor Analysis of Farmer Successors' Backgrounds Related to Marriage Conditions by the Analytical Type 2 of Quantification Theory

	Successor's background	Number (persons)	Share of the married (%)	Range	Category score	Independence test (χ^2 test)
School career	High school	23	91	2.43	0.50	**
	Colleges / technical schools	12	50		-1.50	
	University and above	7	100		0.93	
The first employment	Family farming	32	88	0.91	0.22	
	Employment other than Farming	10	60		-0.69	
Age range	Under 30	20	70	0.41	-0.21	
	Over 30	22	91		0.20	

Probability of correct discrimination ratio 76%

Note: No relationship with significant difference is found amongst three variables by independence test.

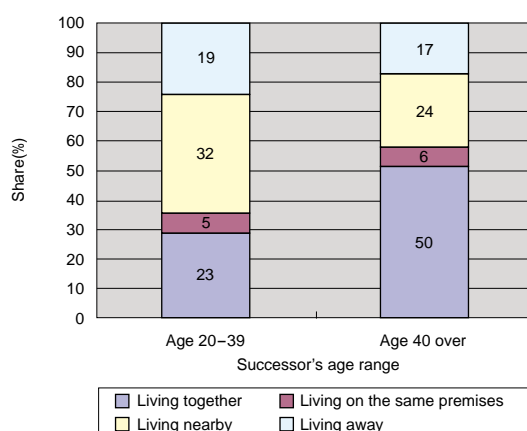


Fig. 1. Distributions of Habitations of Two Married Generations by Successor's Age Range

is influenced by the school career.

The difficulty of getting married for rural males (especially farmer successors) is pressing for the transformation of the lineal family formation, which has a deep and firm root in their tradition. One of the hard rules that keep the tradition going is the cohabitation of two married generations, and this is on the verge of making a complete change. Shown in Fig.1 are distributions of different types of habitations made by two married generations from ten communities in semi-mountainous areas, categorized by the successor's age range. 40% of married successors live apart from parents, and the rate is almost equivalent to that of those who live either with or close to their parents. A rapidly increasing new trend towards living apart from parents over the last ten years is reflected in the large distribution of habitation by those who are under 40.

In conclusion, the difficulty of getting married for the successors of farm households contributes not only to the decline in birth rates in a major way, but also to the transformation of the traditionally maintained lineal family formation.

3. Related publications

Aikawa, Y. (2001.7) Change of Farm Family and the Difficulties of Marriage in the Youth and the Middle-aged, *NORIN KEIZAI*.

Aikawa, Y. (2001.9) Problems of Declining Birth Rate and a Growing Proportion of Elderly People in Rural Communities, *PRIMAFF REVIEW* 1.

Frontier Cost Function Analysis of Japanese Multipurpose Agricultural Cooperatives

Ryuichi FUKUDA

According to the results from the past measures of Cost Function Analysis undertaken by Japanese Multipurpose Agricultural Cooperatives, economy of scale was observed, which indicates the merits of a merger between Agricultural Cooperatives. However, as the accurate evaluation of the benefits of the merger requires a measure of Cost Function in terms of production efficiency, the past research is inconclusive. Hence, the objective of this research is to perform a more accurate economic analysis of a merger by estimating Frontier Cost Function of Japanese Multipurpose Agricultural Cooperatives with regard to production efficiency.

In the result from the estimation and analysis of Frontier Cost Function, economy of scale was observed. Nevertheless, the expansion of the scale of Japanese Multipurpose Agricultural Cooperatives has already reached its optimum level; therefore, the extensive cost reduction effect by further expansion can not be expected. The effects of a merger vary depending on the structure of the cooperatives; the agricultural cooperatives specializing in banking receive a larger benefit from the merger. Depending on circumstances however, it is still possible that the expected merger turns out to be cost-augmentative. It is evident that since further expansion in the scale of