RURAL LABOR MOBILITY IN TAIWAN

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I. Introduction:

A first rural labor mobility study made by the Rural Economics Division was in 1963.** Since then five years have passed with a rapid change in labor structure both in agriculture and non-agriculture. The rapid urbanization and industrialization in recent period were its major causes.

The economy of Taiwan has continuously grown at a high rate. For the period 1965—1968, under the fourth four-year economic development plan, the economic growth rate as a whole was 10.5 percent per annum, well over the planned growth rate of 7 percent per year. In some detail, the annual growth rate of agricultural production was 6.5 percent and industrial growth rate 16.6 percent per annum during the period, while the planned growth rate of agriculture was only 4.1 percent and that of industry 11.0 percent.

The industrialization and urbanization of Taiwan have been very swift recently. According to the third industrial and commercial census of Taiwan, the total number of industrial and commercial enterprises was 217,651 units at the end of 1966. It shows an increase of 21.1 percent during the five years as compared with the second similar census in 1961 (179,680 units). On the other hand, the total employees in the whole industrial and commercial businesses were 1,095,882 persons in 1961 and increased to 1,531,067 in 1966. In other words, employment was increased by 435,185 persons or 39.7 percent between the second and third industrial and commercial censuses. The workable population aged over 15 years of Taiwan was 6,037,462 in 1961 and increased to 7,331,687 persons in

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1966, or 21.4 percent increase. Consequently, the increase in industial and commercial employment really showed a remarkable stride as compared with that of workable population for this period.

Owing to the rapid outflow of agricultural labor to industry and commerce, the traditional phenomenon of oversupply of rural labor does no longer exist. Nobody is interested in discussing the so-called disguised unemployment of agriculture. On the contrary, the shortage of agricultural labor has annoyed farm operators in most areas, especially during the planting and harvesting seasons. The daily wages of farm laborers have risen to a rather high extent. In addition, transportation fees to get workers to engage in farm work are given to attract them to come. Various factories have experienced factory workers' recruitment scramble in the rural areas. In urban regions, many housewives complained the difficulty in hiring maid-servants. As a result, washing machines have been sold well. At any rate, the shortage of laborer is becoming severe day by day.

In order to understand the recent labor outflow from rural regions, Ruraal Economics Division has made another study of similar nature since September 1968. A total of 1800 farm households were interviewed in the same 30 townships as in the former study, in the north, central and south parts of Taiwan. After scrutinizing the interviewed 1800 questionnaires, 1601 farm households were chosen for processing and analysis.

To what extent industrialization and urbanization have helped in creating job opportunities for the rural people, what are the prospects of industrialization and urbanization in absorbing the rural people in future, and what are the conditions required for the rural people to fit in non-farm jobs, are some of the vital problems which economic planners and policy makers should take into account, if an aggregate economic development is to be maintained steadily.

The selected Taipei, Taichung and Kaohsiung metropolitan areas covered in this study are still the most urbanized and industrialized centers in Taiwan.

II. Method of Study:

To facilitate a comparison of the 1968 study with the 1963's, the same thirty townships were determined to be studied. In the northern district, the same ten townships surrounding Taipei city were surveyed, although two of these townships (Nankang Chen and Mushaw Hsiang) have become part of Taipei city since it was changed to a special city in 1967 and enlarged its boundary. In case of the central and southern districts, also the same townships were taken for study. The central district covered Taichung and Changhwa prefectures near Taichung city, while the southern district covered Kaohsiung prefecture which surrounds Kaohsiung city.

Six villages were selected at random from every township and ten farm households in each village were investigated. Therefore, 60 farm households were drawn from each township and 1800 farm households from the total 30 townships were surveyed. Eliminating some poor questionnaires, we chose 1601 farm households for processing and analysis.

Talbe 1 shows numbers and name of townships and sample size of investigation in three districts.

The interviews were conducted by the personnel of agricultural extension section of the corresponding township farmers' association. The survey period ranged from September to December 1968, The sample farm households were interviewed on prepard questionnaires containing the following items: labor structure of the farm household; position and education of the moved-out members; distance, time, and motive of movement; effects of labor movement on farm income; effects on farm operation; nature of movement; causes of changes of movement; and attitudes of family towards movements.

The moved-out members consist of three categories, namely commuters, seasonal workers, and long-term employees. A commuter travels regularly back and forth from his farm home to his work and receives monthly salaries. A seasonal worker works temporarily for others during his leisure time and gets wages per working day. A long-term employee leaves his farm home and works rather permanently in the cities or some

Table 1. Districts, Number of Farm Households, and Number and Name of Townships

District	Households surveyed	Household chosen	Number of townships	Name of townships
North (Taipei)	600	551	10	Ban-chao Chen, San-hsia Chen, Lin-kow Hsiang, Nan-kang Chen (now district), Mushaw Hsiang (now district), Shuang-chih Hsiang, Tan-shui Chen, Chin-shan Hsiang, Lu-chow Hsiang, and Shih-ding Hsiang.
Central (Taichung)	600	548	10	Shen-kang Hsiang, Shih-kang Hsiang, Da-chia Chen, Taiping Hsiang, Lung-ching Hsiang, Yuanlin Chen, Erh-shui Hsiang, Yung-ching Hsiang, and Da-cheng Hsiang.
South (Kaohsiung)	600	502	10	Fong-shan Chen. Hsiao-kang Hsiang, Yentsao Hsiang, Lu-chu Hsiang, Chia-ding Hsiang, Chiao-tou Hsiang, Chih-shan Chen. Da-shu Hsiang, and Yung-an Hsiang.
Total	1,800	1,601	30	

other places. However, he still keeps close connections with his farm home, such as through remittance of his earnings. The commuters and seasonal workers are staying in the farm homes, while the long-term employees have left their farm houses and live mostly in the urban areas.

Students lived outside, military servicemen and dependents of longterm employees are not included in the long-term employee category. Besides the above categories, some farmers sold their farms and left rural areas for some other jobs. We could not and would not investigate the whole family moved-out in this small scale sample survey.

III. Findings:

1. Nature and character of labor movemont

As described in the above, the moved-out members of farm families were divided into three categories; commuters, seasonal workers and long-term employees, The most conspicuous change between present survey and the former 1963 one is the relative weight of these three kinds of workers. Both male and female commuters were increased most rapidly. The male commuters doubled from 23.5 percent to 45.7 percent, while the female commuters increased by about 55 percent, from 35.0 percent to 54.3 percent. On the contrary, the male seasonal workers decreased from 41.1 percent to 21.8 percent as shown in Table 2. This radical change of employment structure in farm family members is obviously due to rapid industrialization in recent years and the rapid increase in creating permanent job opportunities to replace unstable seasonal farm work.

Table 2. Distribution of Various Moved-out People by Sex

	Commuters		Seasonal workers		Long-term employees		Total	
	1963	1968	1963	1968	1963	1968	1963	1968
				Persons				
Male	367	860	954	520	242	502	1563	1882
Female	149	363	175	146	102	160	426	669
Total	516	1223	1129	666	344	662	1989	2551
				Percentage				
Male	23.5	45.7	61.0	27.6	15.5	26.7	100.0	100.0
Female	35.0	54.3	41.1	21.8	23.9	23.9	100.0	100.0
Total	25.9	47.9	56.8	26.1	17.3	26.0	100.0	100.0

The increase of commuters in the farm families indicates the stable job opportunities for rural people. It also means that new factories are established in the nearby distance of surveyed townships, so the rural people are able to commute from their farm homes. On the contrary, the swift decrease of seasonal workers reflected the shortage of farm laborers, especially during the harvest and transplanting seasons. Also while the former survey showed that 80 percent of the seasonal

workers were engaged in farming, the present survey shows that only 55 percent were engaged in farming. The further analysis on seasonal workers will be done later. The relative weight of male long-term employees was increased by 72 percent, from 15.5 percent to 26.7 percent, while that of female workers remained unchanged 23.9 percent. However, both male and female long-term workers were increased in absolute number to some extent during the five year period.

For easier comparison of labor movements among districts, the number of the moved-out has been adjusted on the basis of 100 farm households, shown in Table 3.

A tremendous change was witnessed in the moving ratio by districts. The central district, which had the lowest ratio in the former survey, now becomes to have the highest rate of movement as a whole. In the case of male commuters, three districts did not show much difference. However, there were more female commuters in the central and north districts and less in the south.

It is a well-known fact that industry and commerce are more developed in Taipei and kaohsiung districts than in the central Taichung district. Therefore, it is natural for rural people in the central district to move into either north or south. The number of people who moved out from the central area for long-term employments was the largest according to the present study. And the farther the distance from metropolitan areas, the larger the number of people who move out for long-term employment.

The northern farm households are comparatively near Taipei city and surrounding industrial districts, such as Sanchoung city in Taipei prefecture. Many of these households send their members out to work in factories as commuters.

2. Relationships between moving-rate and farm size

The more cultivated land a farmer has, the less the moving rate. That is to say there is a distinct inverse relationship between moving rate and farm size. The moving rate is 24.5 percent in the less than 0.5 hectare group. (See Table 4.) It reduces gradually to 19.9 percent in 0.5–1.0 hectare group, 17.2 percent in 1.0–1.5 hectare group, 13.6 percent in 1.5–2.0

Table 3. Number of Moved-out per 100 Farm Households Classified by Nature of Movement and by Districts

Unit: Person

District	Commuters			Seasonal workers			Long-term employee			Grand Total		
	Male	F.	Sub-total	Male	F.	Sub-total	Male	F.	Sub-total	Male	F.	Total
North	52	24	76	33	3	36	20	8	28	105	35	140
Central	54	29	83	46	17	63	47	14	61	147	60	207
South	56	14	70	17	8	25	27	8	35	99	30	129
Total	54	23	77	33	9	42	31	10	41	118	42	160

Table 4. Relationship between Moving-rate and Farm Size by District

Farm Size (Ha.)	North			Central			South			Total		
	A	B	B/A%	A	B	B/A%	A	B	B/A%	A	B	B/A%
Less than 0.5	786	158	20.1	1,399	390	27.9	901	203	22.5	3,086	751	24.3
0.5—1.0	1,402	242	17.3	1,478	392	26.5	1,274	194	15.2	4,154	828	19.9
1.0—1.5	1,043	159	15.2	805	188	23.4	669	85	12.7	2,517	432	17.2
1.5—2.0	630	69	11.0	373	73	19.6	433	53	12.2	1,436	195	13.6
More than 2.0	1,276	143	11.2	459	89	19.4	898	115	12.8	2,633	347	13.2
Total	5,137	771	15.0	4,514	1,132	25.1	4,175	650	15.6	13,826	2,553	18.5

A: Total farm population

B: Moved-out member

B/A: Moving rate.

hectares group and only 13.2 percent in more than 2.0 hectares group.

Because farmers with small farm land are unable to earn sufficient income from farming to support their living, they have to find some other work and consequently become part-time farmers.

Another way for the farmer with small land to get more farm income is to adopt labor-intensive horticultural cultivation. For example, Yung-ching Hsiang (township) in the central district has only 0.38 hectare of average cultivated land per farm household. Some farmers raise several kinds of vegetable in addition to one intercropping rice.

A typical cropping system of intensive cultivation in Yung-ching Hsiang comprises leek, Chinese cabbage, tomato, cucumber, snap bean, and rice. However, this labor-intensive operation cannot be applied in a large scale, usually limited to only 0.1 hectare or so. It is said that farm work is usually done by those who are more than 35 years of age. The younger people especially with high school or higher education prefer non-farm work to painstaking farm work, so they leave farm to join in industry or commerce. Many farm girls would like to participate in indoor factory work even with lower pay in order not to get tan under the strong sunshine.

3. Age compostion of moved-out workers

Age composition of moved-out workers varied substantially according to the kinds of employment and sex of workers. Generally speking, age structures of moved-out workers between present and former studies were very similar as a whole, though the kinds of employment were altered largely. The commuters of both male and female became the largest magnitude, while in the former survey, the seasonal workers ranked at the top. The recent economic development in Taiwan has absorbed rural people on stable and permanent bases as commuters instead of unstable seasonal workers on daily uncerain condition.

The male moved-out workers mainly consisted of those under the age of 39. In other words, about eighty percent of the total male workers were under 39 years of age as shown in

Table 5. one characteristic is that the males nowadays begin to work at younger age The present study shows that the male workers under the age of 19 were increased to 17.1 percent. However, they occupied only 9.2 percent in the former study. This change may reflect more job opportunities and labor requirements in the secondary and tertiary industries for young male.

The female workers also started to engage in the outside work at much younger ages than the male. The present data disclosed that nearly 80 percent of female workers were under 24 years of age. This fact perfectly coincided with the former study. The gentle sex of rural people work for others at the age of about 15 and quit working after marriage.

For the seasonal work, age composition is extended to considerably elder ages both male and female, Since seasonal work comprises mostly farm operation during the harvest and transplanting seasons, younger people are reluctant to do such back-breaking farm work and prefer other temporary work. This is why farm labor shortage has often perplexed farm operators during the busy season.

In general, the long-term jobs and commuting opportunities tend to be occupied by younger educated people and not by elder poorly educated ones.

4. Types of jobs engaged by the moved-out labor

A. Commuters

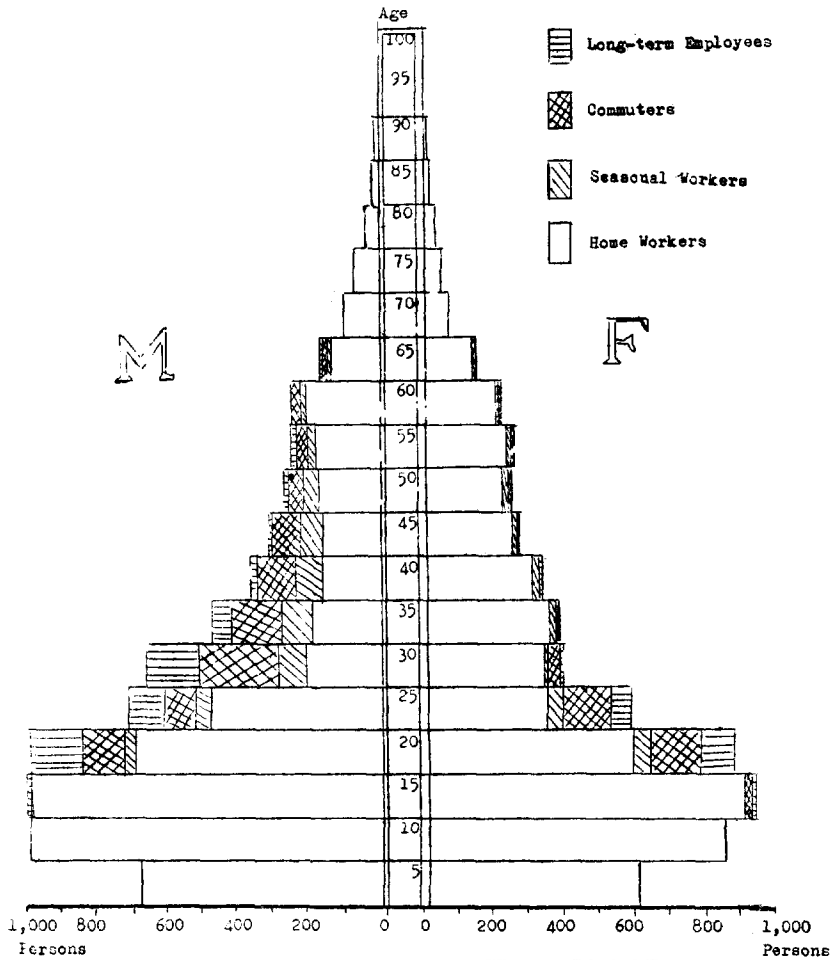
Among the three categories of moved-out labor, the increase in commuters was most remarkable. In the present survey, commuters occupied 48 percent of the total moved-out, while seasonal workers and long-term employees were 26 percent each. The 1963 study disclosed that commuters were 26 percent of the total moved-out, seasonal workers 57 percent and long-term employees 17 percent.

The rapid increase in commuters is obviously due to the establishment of industrial zones near Taipei, Tax-free Processing Zone in Kaohsiung, and various factories within or near these three large cities; Taipei, Kaohsiung and Taichung. The commuting time is mostly within one hour, therefore, it is convenient for those nearby farm household members to work

Table 5. Age Composition of Moved-out Workers

Age distribution	Total	Under 14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60 and over
Male												
Commuter	860	9	126	92	224	135	97	75	44	28	21	9
Seasonal worker	520	—	31	42	88	96	84	69	48	34	20	8
Long-term employee	502	11	144	100	146	57	22	11	7	3	—	1
Total	1,882	20	301	234	458	288	203	155	99	65	41	18
%	100.0	1.1	16.0	12.4	24.2	15.3	10.8	8.2	5.3	3.5	2.2	1.0
Female												
Commuter	363	25	150	136	28	10	4	1	3	2	2	2
Seasonal worker	146	1	45	31	7	6	17	14	14	7	3	1
Long-term employee	160	11	86	49	11	3	1	2	—	—	—	—
Total	669	37	281	216	46	19	22	17	17	9	5	3
%	100.0	5.5	41.9	32.2	6.9	2.8	3.3	2.5	2.5	1.3	0.7	0.4

Age Distribution of Moved-out Workers



as commuters at these industrial and commercial enterprises.

The types of jobs engaged by male and female commuters are different. In the case of male commuters, 25.3 percent worked as factory employees, 21.4 percent as public officials and teachers, 16.2 percent as clerks and office workers, 8.7 percent as servants, 8.0 percent in small enterprises as shown in Table 6. The percentage order of male commuters in the former study was public officials and teachers 27.5 percent, factory workers 27.1 percent, miners 14.4 percent, small enterprises 9.0 percent, communication and transportation 7.6 percent. The noticeable change between the two studies lies in the increase in cleks and office workers, and servants. In other words, the prosperity of commercial sectors has absorbed considerable amount of farm labor. The sudden decrease is realized in miners from 14.4 percent to only 3.7 percent. This is probably because cf dullness of coal mine industry and more job opportunities are available for less dangerous occupation.

The 44.3 percent female commuters worked as factory girls. It is almost the same as revealed in the former study, i.e., 44.2 percent. Next in order, clerks and office girls were 16.5 percent, handicraft 11.9 percent, public officers and teachers 11.3 percent, maids and servants 7.4 percent. The conspicuous increase was recorded in clerks and office girls. It may be also attributable to the development of industry and commerce recently. On the contrary, handicraft workers reduced from former 20.1 percent to 11.9 percent. Another change was that some maids and servants were working as commuters but they were almost stayed at employers home formerly.

B. Seasonal workers

As mentioned above, seasonal workers both male and female reduced substantially either in absolute or in relative sense. Of the seasonal workers, farming still ranks at the top. However, the former study showed about 80 percent of male and 83 percent of female seasonal workers engaged in farming. Now the percentages were decreased to approximately 51 percent for male and 60 percent for female in this study (see Table 7).

This serious shortage of farming seasonal workers has

Table 6. Types of Job of Commuters Classified by District and Sex

	Total	Farming and fishery	Mining	Factory worker	Small enterprise	Clerk, office worker	Public officials & teachers	Communi-cation & transpor-tation	Carpenter and plasterer	Maid & servant	Handi-craft	Others
Male												
North	285	6	32	79	33	32	16	12	31	33	3	8
Central	293	5	—	79	16	64	61	19	21	23	1	4
South	282	5	—	60	20	43	107	10	2	19	1	15
Sub-total	860	16	32	218	69	139	184	41	54	75	5	27
%	100.00	1.9	3.7	25.3	8.0	16.2	21.4	4.8	6.3	8.7	0.6	3.1
Female												
North	133	1	—	72	5	22	11	—	1	10	10	1
Central	161	1	—	70	2	31	10	3	—	12	29	3
South	69	—	—	19	7	7	20	—	—	5	4	7
Sub-total	363	2	—	161	14	60	41	3	1	27	43	11
%	100.00	0.6	—	44.3	3.9	16.5	11.3	0.8	0.3	7.4	11.9	3.0
Total	1,223	18	32	379	83	119	225	44	55	102	48	38
%	100.00	1.5	2.6	31.0	6.8	16.3	18.4	3.6	4.5	8.3	3.9	3.1

been prevailing since 1967. The outcome of labor shortage during busy farming season was reflected in sharp rise of daily wages. Monetary expenses ranged from NT$80－100 (or US$2.00—2.25) per day for male and NT$40—60 (or US$1.00—1.50) for female. In addition, the employer had to bear round trip transportation fees from employees' residence to the employer's farms. This kind of transportation fare had never been paid by employers before. Also reported is that upon completion of harvest or transplanting of rice, the employer used to entertain his employees with beer instead of cheaper rice wine.

Because of difficulty in hiring seasonal workers during busy farming season even with higher pay, many maids and servants are called back by their fathers from outside jobs to help harvest or transplanting of rice. It is reported that rice transplanting machines are gradually being adopted by farmers in the central part of Taiwan in order to overcome labor shortage.

Of the male seasonal workers, carpenters and plasterers increased from 3.4 percent to 10.0 percent. They are not necessarily skilled carpenters and plasterers, but undertake painstaking delivery work with more physical strength as apprentices. Miners and servats were also increased from less than 4 percent to more than 9 percent.

In the case of female seasonal workers, the largest group was the farming workers that occupied 59.6 percent, and the other group were, in order, factory girls 13.7 percent, handicraft 9.6 percent, maids 7.5 percent, etc. These show considerable increase as compared with the former study; factory girl 9.7 percent, handicraft 3.4 percent, and maids nil.

C. Long-term employees

Of the total moved-out labor, the long-term employees increased from 17 percent in 1963 to 26 percant in 1968. This group of moved-out members is literally long-term or will become permanent immigrants from rural to urban areas.

The largest share of the male long-term employees engaged in factory work was 33.8 percent, the former study revealed 30.5 percent, while the factory girls also stood at the top of female long-term employees, i.e., 28.1 percent or increased by

Table 7. Types of Job of Seasonal Workers Classified by District and Sex

District	Total	Farming	Mining	Factory worker	Coolie	Carpenter & Plasterer	Maid & Servants	Peddler	Handi-craft	Others
Male										
North	182	39	48	6	6	17	30	16	1	19
Central	254	200	1	6	4	20	7	3	—	13
South	84	27	—	6	7	15	11	9	—	9
Sub-total	520	266	49	18	17	52	48	28	1	41
%	100.0	51.4	9.1	3.5	3.3	10.0	9.2	5.4	0.2	7.9
Female										
North	17	7	1	—	—	—	5	1	1	2
Central	91	65	—	17	—	—	—	2	5	2
South	38	15	—	3	—	2	6	4	8	—
Sub-total	146	87	1	20	—	2	11	7	14	4
%	100.0	59.6	0.7	13.7	—	1.4	7.5	4.8	9.6	2.7
Total	666	353	50	38	17	54	59	35	15	45
%	100.0	52.8	7.05	5.7	2.6	8.1	8.9	5.3	2.3	6.8

2.6 percent in five-year period. The second largest item was the category of clerks and office workers both male and female; the former 25.0 percent, the latter 19.4 percent. This category almost doubled in number between the two studies, or more precisely, male increased by 95 percent, while female by 98 percent.

Following factory workers 33.8 percent, clerks and office workers 25.0 percent, the male long-term employees served as public officers and teachers 9.6 percent, communication and transportation 6.0 percent, small enterprises 5.4 percent, carpenters and plasterers 4.8 percent, servants 4.8 percent, etc. (see Table 8). On the other hand, as to female long-term workers after factory girls 28.1 percent, clerks and office workers 19.4 percent, the other occupations were maids and servants 15.0 percent, handicraft 11.9 percent, public officials and teachers 6.3 percent, as shown in Table 8. The largest weight in the former female long-term job was maid-servants, 32.3 percent. It reduced more than half, namely only 15.0 percent. This fact will easily explain the difficulty of hiring maids in urban areas. As a matter of fact, factory girls work shorter than maids with better reputation. Therefore, it is understandable that lots of maids have shifted to factories.

Even so the shortage of factory workers especially girls was also reported. Some managers of factories have entrusted the recruitment of new workers to prominent figures in rural community. The commission for introducing one worker was said to be about NT$100. A few factory managers occasionally drove cars to townships and made a recruitment speech at roadside with a loud-speaker. Their content includes the nature of work, monthly pay, further more periodical vacations with pay and home leave by free transportation.

5. Educational levels of moved-out workers

The educational level in Taiwan is one of the highest in the Far East. Generally speaking, the diffusion of education is not so extended in the rural areas as in the urban areas. Taiwan is no exception.

There are 7,642 working age persons after processing of 1601 farm households. The working age people are those who

Table 8. Types of Job of Long-term Employees Classified by District and Sex

	Total	Farming and Fishery	Mining	Factory worker	Small enterprise	Clerk & office worker	Public official and teacher	Communi-cation and transport.	Carpenter and plasterer	Maid & servant	Handi-craft	Others
Male												
North	110	4	6	28	10	24	7	7	7	8	4	5
Central	259	5	1	90	10	82	14	18	12	13	8	6
South	133	2	1	52	7	20	27	5	5	3	1	10
Sub-total	502	11	8	170	27	126	48	30	24	24	13	21
%	100.00	2.2	1.6	33.8	5.4	25.0	9.6	6.0	4.8	4.8	2.6	4.2
Female												
North	44	—	—	14	1	6	1	1	1	6	8	6
Central	74	—	—	25	1	20	3	—	—	12	6	7
South	42	—	—	6	1	5	6	—	—	6	5	13
Sub-total	160	—	—	45	3	31	10	1	1	24	19	26
%	100.00	—	—	28.1	1.9	19.4	6.3	0.6	0.6	15.00	11.9	16.2
Total	662	11	8	215	30	157	58	31	25	48	32	47
%	100.00	1.7	1.2	32.4	4.5	23.7	8.8	4.7	3.8	7.3	4.8	7.1

are more than 15 years old. The educational levels of these 7,642 persons are classified into five categories: no education, primary school, junior high school, senior high school, and college. Uneducated people occupied less than one-fourth. As shown in Table 9, the educational levels have raised substantially in comparison with the former 1963 survey. The primary school graduates increased from 52.4 percent to 61.5 percent, junior high school graduates from 5.3 percent to 7.7 percent, senior high school graduates from 2.5 percent to 6.3 percent and college graduates from 0.2 percent to 0.6 percent.

Table 9. Comparison of Rural Educational Level between 1963 and 1968

	1963		1968	
	Persons	%	Persons	%
No education	2,577	39.6	1,825	23.9
Primary school	3,410	52.4	4,701	61.5
Junior high school	345	5.3	591	7.7
Senior high school	164	2.5	480	6.3
College	14	0.2	45	0.6
Total	6,510	100.0	7,642	100.0

The 89 percent of uneducated rural people stayed at home and about the rest of them worked as commuters 3 percent, seasonal workers 7 percent, and less than one percent as long-term employees. (see Table 10). Two-thirds of primary school graduates remained at home, and 14.8 percent worked as commuters, 10.7 percent seasonal workers,and 8.7 percent long-term employees. One the contrary, about 60 percent of junior school graduates and three-fourths of senior high school graduates were served mostly as commuters and long-term employees and very few as seasonal workers. In the case of college graduates, approximately 47 percent worked as commuters, 44 percent as long-term employees, only 9 percent stayed at home mostly female, and nobody worked for seasonal jobs. As a rule, the higher education people received, the more opportunities for them to get outside jobs. This fact apparently reflects that education is the most important factor enabling labor mobility from rural areas.

The importance of higher education is now widely recognized in countryside. Many junior high schools, various vocational schools are newly built in township level. Almost every township has a junior high school at present. The government enacted a regulation to extend compulsory education up to junior high school in 1968 and implemented the nine-year education all over the country already. Therefore, the educational level will be further promoted in the future. Accordingly, the labor mobility to industry and commerce will be accelerated.

6. Cash farm income and number of moved-out members

Cash farm income has greatly increased in recent years owing to an increase of production in horticultural crops, especially bananas, pineapples, citrus fruits, mushroom, asparagus, etc. The intensive cultivation of cash crops has also contributed to high cash farm income.

The processed data shaw the negative correlation between cash farm income and moved-out members. In order to facilitate comparison among different cash income groups, the family members are converted to 8.62 persons which were average family number of surveyed farm households. It is natural that the more cash farm income farmers received, the less members were moved out, and vice versa. However, this relationship was very accurate until NT$70,000 cash farm income per family, after that the number of moved-out members were fluctuated irregularly. But 94 percent of farm households earned less than NT$70,000 of cash farm income a year. The relationship between cash income and moved-out persons is shown below.

Table 11. Relationship between Cash Farm Income and Number of Moved-out Persons per Farm

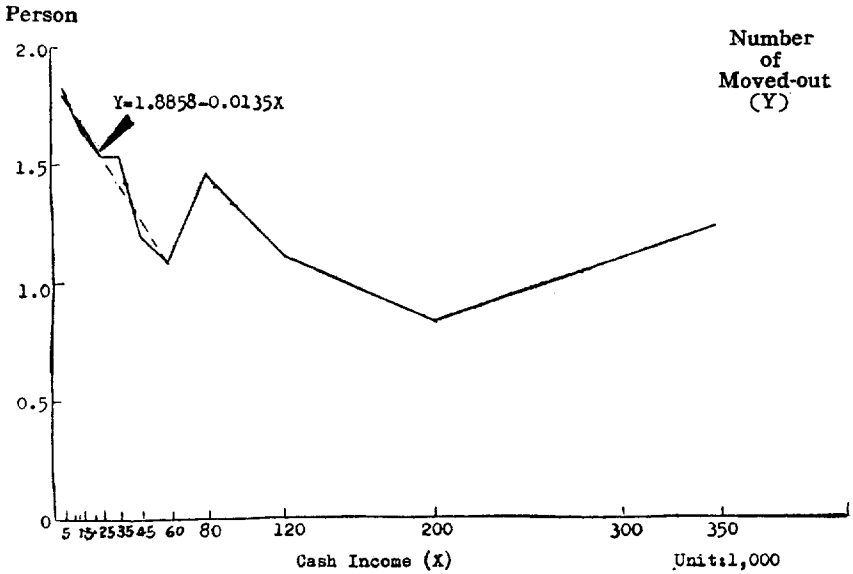
Unit: 1,000 N.T.

Cash farm income	less than 10	10–20	20–30	30–40	40–50	50–70	70–90	90–150	150–250	250 and over
No. of moved-out persons	1.83	1.64	1.53	1.54	1.20	1.08	1.46	1.11	0.83	1.25

Table 10. Educational Levels of the Moved-out Workers

Educational level	Grand Total			Commuters			Seasonal workers			Long-term employees			Dependents		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
No education	1,825	489	1,336	56	38	18	128	79	49	10	7	3	1,631	365	1,266
Percentage	100.00	100.00	100.00	3.07	7.77	1.35	7.01	16.16	3.67	0.55	1.43	0.22	89.37	74.64	94.76
Primary school	4,701	2,537	2,164	695	452	243	501	411	90	408	291	117	3,097	1,383	1,714
Percentage	100.00	100.00	100.00	14.78	17.82	11.23	10.66	16.20	4.16	8.68	11.47	5.41	65.88	54.51	79.20
Jr. high school	591	409	182	211	157	54	27	21	6	111	83	28	242	148	94
Percentage	100.00	100.00	100.00	35.70	38.39	29.67	4.57	5.13	3.30	18.78	20.29	15.38	40.95	36.19	51.65
Sr. high school	480	382	98	240	195	45	10	9	1	113	101	12	117	77	40
Percentage	100.00	100.00	100.00	50.00	51.05	45.92	2.08	2.35	1.02	23.54	26.44	12.24	24.38	20.16	40.82
College	45	39	6	21	18	3	—	—	—	20	20	—	4	1	3
Percentage	100.00	100.00	100.00	46.67	46.15	50.00	—	—	—	44.44	51.28	—	8.89	2.57	50.00
Total	7,642	3,856	3,786	1,223	860	363	666	520	146	662	502	160	5,091	1,974	3,117
Percentage	100.00	100.00	100.00	16.00	22.30	9.59	8.72	13.49	3.86	8.66	13.02	4.22	6,662	51.19	82.33

Relatoinships Between Moved-Out Numbers and Cash Income



A regression line was calculated for cash farm income under NT$70,000 and number of moved-out persons: Y=1.8858−0.0135 X(where Y=number of moved-out persons, X=cash farm income). If a farm family's cash income reaches NT$140,000 a year, no family members need to engage in off-farm jobs for livelihood according to the equation. In case of exodus from large cash income family, it is not chiefly from the standpoint of a living earning. The offspring of large farm income family are apt to receive higher education and easier to get non-farm jobs. The second or third sons of a farmer would leave farm work to their brother and engage in non-farm jobs in urban areas provided their farm size is too small for efficient operation. In such occasion, they live an independent life neither remitting money to nor receiving subsidy from farm home.

7. Land ownership and labor movement

The relationship between land ownership and farm labor moving rate in the present survey is perfectly coincident with that of the former study, namely, on the average tenants have the highest moving rate, owner-cultivators come next, and part-owner-cultivators rank last. However, the present moving rate

as a whole is a little lower, and the composition of moved-out persons has changed. That is to say, the large increase in commuters and rapid decrease in seasonal workers. In other words, jobs of rural people are changed from seasonal, unstable work to permanent, stable one. Again this is attributable to industrialization and urbanization. The following table shows the relationship between land ownership and moving rate according to operational farm size.

Table 12. Distribution and Moving Rates of Farm Labor by Land Ownership

Farm size (Ha.)	Total			Owner-cultivator			Part-owner-cultivators			Tenants		
	A	B	B/A %	A	B	B/A %	A	B	B/A %	A	B	B/A %
Under 0.5	3,086	751	24.3	2,579	650	25.2	239	43	18.0	268	58	21.6
0.5—1.0	4,154	828	19.9	3,319	660	19.9	548	105	19.2	287	63	22.0
1.0—1.5	2,517	432	17.1	1,887	326	17,3	537	89	16·6	93	17	18.3
1.5—2.0	1,436	195	13.6	1,045	152	14.6	334	33	9.9	57	10	17.5
Over 2.0	2,633	347	13.2	2,027	256	12.6	589	87	14.8	17	4	23.5
Total	13,826	2,553	18.5	10,857	2,044	18.8	2,247	357	15.9	722	152	21.1

A: Total farm population
B: Number of moved-out persons
B/A: Moving rate.

There exists a clear inverse relationship between farm size and moving rate. An average farm size of tenants was only 0.66 hectare with 7.84 persons per family. They have to depend largely on off-farm earnings. So they have the highest moving rate, 21.1 percent. On the contrary, a part-owner-cultivator has 1.32 hectare of cultivated land with 9.40 persons (see Table 13). Therefore, the moving rate of part-owner-cultivators is only 15.9 percent.

Table 13. Cultivated Land and Family Size by Ownership

	Total	Owner-cultivators	Part-owner-cultivators	Tenants
No. of farm households	1,601	1,270	239	92
Cultivated land (ha.)	1,780	1,403	316	61
Average cultivated land (ha.)	1.11	1.10	1.32	0.66
Average family size (persons)	8.64	8.55	9.40	7.84

IV. Conclusion:

The economy of Taiwan has been continuously growing recently. The subsequent urbanization and industrialization have greatly contributed to absorption of labor, especially rural manpower. According to this study on rural labor mobility, it is clear that the most important factors enhancing labor exodus from rural areas are education, youth, and low farm income. That is to say the higher education farm families receive, the more opportunity for them to engage in other occupation. A great majority of moved-out members are young people both male and female, and from low farm income families. But educated people from the wealthy families do move to the city because they are attracted by urban life and better working condition.

Generally speaking, the offspring of low farm income families are not likely to have received higher education. This is really a contradition in a way that most of the members of the families that need to send them out for jobs are not qualified to engage in better paid occupations because of low education. Along with the development of industry the manpower demand will hereafter require more skilled labor instead of rather unskilled one. At present, emphasis should be given to train those who had no chance to receive formal education and fit them to non-agricultural occupation. Therefore, it seems imperative to provide some kinds of training for uneducated farm youth. It is recommendable to furnish a short period of vocational training to them. Fortunately the government has extended compulsory education up to junior high school since 1968. This nine-year education will of course equip youth with more ability for future work.

A problem of farm labor shortage has occurred and will become more serious in future provided that the outflow of young labor continues. It will obviously exert unfavorable influence on agriculture in next generation. It was revealed that many male agricultural workers are older than 35 years of age. So many farm wives have to join in the field work. For the time being, labor-saving devices, such as power tillers are

being widely adopted and rice transplanting machines are also being used in some places. A power tiller is substantially expensive and not many farmers can afford to buy one by themselves. The land tilling for preparation of rice planting is popularly entrusted to a contractor for piece work. The power tiller owner charged NT$1,000 per hectare formerly, but reduced to NT$700 recently. As far as harvesting is concerned, the farmers almost rely on man labor which becomes scarce and expensive. The application of harvesting machines is probably not ideal.

The youth labor requirements by factories near Taipei and Kaohsiung metropolitan areas exceed labor supply. Factories in or near Taipei have to hire laborers from the central and southern parts of Taiwan, whereas Kaohsiung factories recruit workers from nearby Tainan and Pingtung prefectures. It is reported that Kaohsiung tax free processing zone is employing approximately 20,000 persons now. New factory workers are not available within the commuting limit. Therefore, it has become necessary to construct domitories for workers from remote places.

On the contrary, farming has gradually become unattractive and less remunerative because of high labor cost, expensive farm requisites and comparatively low price of farm products. The rice price, for instance, has fallen down due to over storage in warehouses and no export outlet. Rice production in Taiwan usually occupies 35 percent of the total agricultural production. As a result, the low profit of farming will discourage farmers to apply intensive cultivation and enhance labor outflow. Accordingly some measures and adjustments must be taken to give more incentives and interests for those who remain in the country. Agriculture might not grow steadily unless positive improvements are rendered to change unfavorable conditions existing in the present farming. On the cost side, the price of fertilizer should be lowered in order to reduce farmers' burden, since the price of fertilizer is comparatively high in Taiwan. Farm machinery is also very important in replacing animal and man labor. Power tillers are still at a high price and the interest charge is also high if farmers buy

one by installment and borrow funds from financial institutions. If these two items were corrected, farmers could reduce agricultural production costs. Then they will be able to use more fertilizer and adopt agricultural machinery to cover labor shortage and increase agricultural production.