

Table 3

Factors Affecting Single Individual's Choice to Migrate:
Philippines, 1965-1973

Variable	Males	1 Females	2 Females
AGE	0.000 (0.003)	-0.008 (1.299)	-0.008 (1.343)
EDUC	0.031 (3.943)**	0.037 (4.624)**	0.037 (4.626)**
OCC65	0.017 (1.975)*	-0.000 (0.007)	
HHSIZE	-0.033 (3.032)**	-0.025 (2.490)**	-0.025 (2.490)**
EXINC	0.074 (2.684)**	0.012 (0.296)	0.012 (0.304)
KINS	0.796 (8.814)**	1.186 (18.954)**	1.186 (18.954)**
RES65	0.067 (0.975)	-0.020 (0.315)	-0.020 (0.316)
MUNI73	0.011 (0.521)	0.073 (3.418)**	0.073 (3.420)**
Constant	-1.066 (5.531)	-1.254 (6.556)	-1.254 (6.664)
-2 log λ	162.644 [#]	482.324 [#]	482.324 [#]
Observations	1739	1902	1902

Note: Figures in parentheses are asymptotic t-ratios.

** Significant at 1 percent level.

* Significant at 5 percent level.

Significant at 0.1 percent or better (8 and 7) degrees of freedom for regressions 1 and 2, respectively).

slight tendency out of agriculture, and those who choose to leave are clearly drawn to the cities. Finally, discarding OCC65 which is completely insignificant for females has no practical consequence on the stability of the other variables (regression 2 in Table 3).

B. Some Effects of Migration

(This section attempts to assess the joint (or sequential) effects of migration with (or on) income and occupation (employment) at destination. Although income and occupation are correlated, both are included in the analysis on the hypothesis that the reciprocal effect of each with migration as well as the effects of the exogenous variables on each may be different. It may be argued, for example, that potential migrants are likely to be more sensitive to upward occupational mobility than to income mobility.) Furthermore, the "job vacancies thesis" contends that a high income is meaningless to a worker if there is no suitable job opening (Parnes, 1954).¹²

¹² A practical reason may be added in that the 1973 NDS income information is felt to be not very good, although the way it is broadly coded as a dichotomous variable for our purpose should minimize its deficiencies.

The analysis is based on a joint probability model as specified by simultaneous equations (2) and (3) above, which assumes the following: (a) all interaction effects of order higher than two vanish; (b) the second-order interaction effects are constant, independent of the values of any of the exogenous variables; and (c) the main effects are linear functions of the exogenous explanatory variables used in the preceding section (see Nerlove and Press, 1973: 71-81). The results are displayed as bivariate interaction in addition to exogenous effects, in Tables 4 to 6.

Table 4 presents the parameter estimates for all persons, separately for males and females. The bivariate interactions of migration (MIG) with income (INC72) and occupation (OCC73) at destination for both males and females appear negligible. The coefficients for the males imply that migration has at best a slight positive effect on income and occupation and, at the same time, is mildly influenced by the prospect of high income and occupation; for the females the interactions are likewise low but in the opposite direction. A comparison of the effects of the exogenous variables in Table 4 with those in Table 1 reveals that they are hardly altered after said endogenous interactions are isolated, except that for female OCC65

which becomes significant. It seems that the drawing

powers of INC72 and OCC73 on MIG of both males and females
are picked up by MUNI73 which is generally supposed to be

a proxy for size of the labor market reflecting better
occupations and incomes.

Expectedly, the bivariate interaction of income
and occupation is appreciable for both male and female

regressions. Table 4 further demonstrates the impacts of
exogenous variables on income and occupation. The impacts
of AGE, EDUC, and OCC65 are positively significant for
male and female INC72 and OCC73. RES65 has an important

positive influence only on male INC72 and OCC73. MAR65
exerts a negative effect on OCC73, especially for female
migrants.

A noteworthy finding is that kinship hardly
affects the migrant's income and occupation at destination,
although it seems extremely influential in the prior deci-
sion to come. It seems logical that, ordinarily, kins do

not have influence in the sphere of job placement. Further,

the low positive coefficient of KINS on INC72 and low nega-
tive on OCC73 may mean that financial assistance from rela-
tives depresses to some extent the incentive to look for a

suitable job and income.

Table 4
Relationships between Migration, Income, Occupation as
Endogenous Variables, and the Exogenous Variables:
All Persons--Philippines, 1965-1973

Bivariate Interactions	MALES			FEMALES		
	MIG	INC72	OCC73	MIG	INC72	OCC73
MIG		0.016 (0.321)	0.009 (0.178)	-0.075 (0.952)	-0.075 (0.952)	-0.075 (0.952)
INC72	0.016 (0.321)		0.280 (5.781)**	-0.075 (0.952)		0.707 (9.927)**
OCC73	0.009 (0.178)	0.280 (5.781)**		-0.053 (0.864)	0.707 (9.927)**	
<u>Exogenous</u>						
AGE	-0.006 (0.823)	0.038 (6.085)**	0.014 (2.030)*	-0.010 (2.105)*	0.043 (4.653)**	0.021 (3.261)**
EDUC	0.042 (3.899)**	0.071 (6.669)**	0.133 (11.104)**	0.022 (2.742)**	0.141 (8.007)**	0.106 (8.812)**
OCC65	0.056 (4.156)**	0.073 (5.593)**	0.092 (6.290)**	0.022 (1.790)*	0.040 (2.415)**	0.137 (8.768)**
MAR65	-0.030 (0.521)	-0.004 (0.070)	-0.098 (1.706)*	-0.054 (1.545)	-0.056 (0.822)	-0.246 (4.385)**
HHSIZE	-0.048 (3.474)**	0.012 (0.941)	-0.012 (0.904)	-0.029 (2.832)**	0.001 (0.073)	0.002 (0.106)
KINS	0.839 (9.614)**	0.078 (0.571)	-0.053 (0.383)	1.052 (16.455)	0.116 (0.755)	-0.058 (0.469)
RES65	-0.218 (2.612)**	0.228 (2.666)**	0.217 (2.443)**	-0.184 (2.787)**	0.077 (0.586)	0.080 (0.818)
MUNI73	0.077 (2.274)**	0.004 (0.134)	0.008 (0.252)	0.086 (3.835)**	-0.017 (0.348)	0.029 (0.812)
Constant	-1.306 (4.502)	0.038 (6.085)	0.133 (11.104)	-1.254 (5.847)	0.043 (4.653)	0.106 (8.812)
-2 log λ	514.677 [#]			540.773 [#]		
Observations	2085			2291		

Note: Figures in parentheses are asymptotic t-ratios

** Significant at 1 percent level.

* Significant at 5 percent level.

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Like F-test for OLS, -2 log likelihood ratio tests the null hypothesis that all multiplicative exogenous coefficients vanish simultaneously; the value is asymptotically distributed as χ^2 with 27 degrees of freedom and is significant at 0.1 percent or better.

Again, the likelihood ratio test shows that the combination of explanatory variables is significant at the 0.1 percent level or better for all regressions.

Table 5 shows that for male breadwinners (household heads) alone the mutual effect of migration and occupation is appreciable; for their female counterparts, it is insignificant and negative. The exogenous coefficients are only slightly reduced from their levels in Table 2. It appears that while for male heads a specific occupation at destination is more important than the size of the destination (MUNI73) itself, for the women the reverse is true; that is, landing a suitable occupation is relatively difficult for women, and this is why they are attracted to large cities with a variety of possible occupations, probably in the service sector.

As in Table 4, the bivariate interaction between OCC73 and INC72 is significant, and INC72 is positively affected by AGE, EDUC, and OCC65 for both male and female heads. Unlike in Table 4, OCC73 of males and females is not a function of AGE but mainly a function of EDUC and OCC65. Again, the KINS factor barely affects the INC72

and OCC73 of the men and the OCC73 of the women. Female

Table 5
Relationships between Migration, Income, Occupation as
Endogenous Variables, and the Exogenous Variables:
Household Heads--Philippines, 1965-1973

Bivariate Interactions	M A L E S			F E M A L E S		
	MIG	INC72	OCC73	MIG	INC72	OCC73
MIG		0.053 (0.617)	0.137 (1.556)*		0.083 (0.878)	-0.017 (0.420)
INC72	0.053 (0.617)		0.167 (2.138)*	0.083 (0.878)		0.017 (0.420)
OCC73	0.137 (1.556)*	0.167 (2.138)*		-0.035 (0.420)	0.470 (5.684)**	
Exogenous						
AGE	-0.031 (2.731)**	0.017 (1.940)*	-0.000 (0.042)	-0.018 (2.415)**	0.023 (2.131)*	-0.000 (0.000)
EDUC	0.048 (2.292)**	0.094 (5.509)**	0.162 (7.479)**	0.039 (2.477)**	0.132 (6.593)**	0.000 (5.684)**
OCC65	0.022 (0.905)	0.053 (2.692)**	0.065 (3.084)**	-0.025 (1.281)	0.006 (0.280)	0.000 (4.211)**
HHSIZE	-0.037 (1.155)	0.012 (0.572)	0.042 (1.518)	-0.021 (1.091)	-0.034 (1.325)	-0.000 (1.000)
KINS	0.797 (3.931)**	0.123 (0.470)	0.001 (0.004)	0.905 (6.923)**	-0.464 (1.856)*	-0.000 (0.351)
RES65	-0.141 (0.615)	0.230 (1.419)	0.374 (1.763)*	-0.175 (1.416)	0.242 (1.403)	-0.040 (0.311)
MUNI73	-0.001 (0.030)	0.010 (0.239)	-0.095 (1.748)	0.131 (2.484)**	-0.067 (1.048)	0.060 (1.071)
Constant	-0.014 (0.027)	0.017 (1.940)	0.162 (7.479)	-1.156 (2.572)	0.023 (2.131)	0.090 (5.611)
-2 log χ^2	355.354#			322.102#		
Observations	583			560		

Note: See note to Table 4. Degrees of freedom for both male and female regressions are 24.

INC72 is apparently depressed by KINS, maybe because kinship aid is somehow a substitute for the female heads' own income.

Finally, Table 6 demonstrates that for single persons MIG and OCC73 are more clearly mutually dependent, although the dependence is negative for females. The coefficients of MUNI73 illustrate again how the size of destination is critical to female migrants but not to the males who are more concerned with specific employment (OCC73).

Table 6 again illustrates the lack of interdependence between migration and income, lending support to the "job vacancies thesis" cited above, and suggesting that potential migrants tend to be more responsive to occupational than to income mobility.

The same exogenous variables are significant for single migrants as in Table 3. And, as in Tables 4 and 5, AGE, EDUC, and OCC65 are important determinants of INC72. OCC73 is positively determined by AGE for single women but only mildly for men. EDUC is extremely important for the OCC73 of both, as expected. Finally, kinship has at most a moderate negative effect on the single person's income and occupation, implying some substitution effect.

Table 6
Relationships between Migration, Income, Occupation as
Endogenous Variables, and the Exogenous Variables:
Single Persons--Philippines, 1965-1973

Bivariate Interactions	M A L E S			F E M A L E S		
	MIG	INC72	OCC73	MIG	INC72	OCC73
MIG		0.029 (0.707)	0.118 (2.667)**	-0.033 (0.544)	-0.033 (0.544)	-0.033 (0.544)
INC72	0.029 (0.707)		0.289 (6.643)**	-	-	-
OCC73	0.118 (2.667)**	0.289 (6.643)**		-0.084 (1.603)*	-	-
<u>Exogenous</u>						
AGE	0.001 (0.079)	0.036 (5.142)**	0.005 (0.631)	-0.006 (1.064)	0.068 (6.115)**	0.001 (0.079)
EDUC	0.024 (2.355)**	0.083 (7.997)**	0.174 (14.132)**	0.043 (5.384)**	0.269 (12.205)**	0.174 (15.132)**
OCC65	0.016 (1.590)*	0.041 (4.327)**	0.048 (4.472)**	-	-	-
HHSIZE	-0.034 (2.279)**	-0.005 (0.384)	0.017 (1.278)	-0.025 (2.766)**	-0.004 (0.241)	0.001 (0.079)
KINS	0.808 (8.803)**	-0.007 (0.055)	-0.199 (1.356)	1.182 (19.386)**	-0.133 (1.028)	-0.133 (1.028)
RES65	0.068 (0.830)	0.094 (1.191)	0.234 (2.673)**	-0.021 (0.348)	0.019 (0.187)	-0.021 (0.348)
MUNI73	0.015 (0.515)	0.044 (1.614)*	0.034 (1.135)	-0.073 (3.422)	-0.026 (0.791)	0.001 (0.079)
Constant	-0.806 (2.878)	0.036 (5.142)	0.174 (14.132)	-1.402 (7.004)	0.068 (6.115)	0.001 (0.079)
-2 log λ	954.590 [#]	-	-	934.598 [#]	928.184 [#]	934.598 [#]
Observations	1739	-	-	1902	-	-

Note: Dash (-) for female bivariate interactions indicates nonconvergence. S also note to Table 4. Degrees of freedom for male regressions are 24; for females d.f. are 14 for MIG and OCC73 regressions, and also 14 for INC72 regression (with the other MIG regression not shown).

V. CONCLUSIONS AND IMPLICATIONS

(This paper has attempted to learn about migration behavior by applying the logit model to individual and household data from the Philippine National Demographic Survey of 1973. The approach is deemed appropriate for the type of question investigated which considers migration decision as a qualitative choice.) The present analysis may, therefore, be regarded as an improvement over the usual approach that uses aggregate population and areal data to deal with a behavioral aspect of the individual and household. We have examined migration choice at three levels, viz. the individual, the household head, and the single individual, separately for males and females. We argue that the findings of the study provide a more direct and firmer quantitative basis for some conclusions about migration behavior that have been appreciated from a theoretical standpoint and from previous empirical investigations, as well as for others that have been less obvious. Having in mind the limitations of the data, the major findings may be recapitulated as follows:

1. Age has a retardative effect on moving, more on the female individual than the male, and on both male and female household heads, but virtually no effect on single persons.

2. Level of education has a strong influence

on migration decision regardless of whether or not one is a household head, but slightly more for males; to the extent that the education effect includes an information effect, it mitigates the distance effect.

3. Previous occupation appears to be significant

only for males in general and for single males; along with education it may be seen as a key preparation for the competitive male labor market.

4. On the whole, expected income does not seem

to be an important consideration for the choice to migrate; for male migration, prospective employment or occupational mobility at destination appears to be the more serious consideration--lending some support to the "job vacancies thesis."

5. Kinship ties at destination seem to be the

decisive factor in the choice to migrate (especially for women), implying that kins furnish potential migrants with needed

information and travel assistance, and are sources of psychic benefits and financial help for the migrants at destination.

6. Household size appears to exert a restrictive effect on household migration; individual migrants seem to be averse to dwelling in

large households with non-immediate relatives although they may rely on these relatives for outside help.

7. Individuals exhibit a clear propensity of moving out of agricultural surroundings, less so for household heads particularly male heads; the destinations are likely to be large urban centers, especially for female migrants who are not so much concerned with a specific income or occupation as with the variety of occupations (probably service sector) that are available in cities.

8. The male migrant appears to fare well in terms of occupational status at destination but not the female migrant.

9. Finally, income after migration is a positive function of age, education, and prior occupation for both men and women; occupational

mobility also depends on education and previous occupation, but age may be a disadvantage for household heads.

In general, personal attributes are more significant in the decision to migrate than external factors which have been stressed by previous studies. What are the implications for policy? First, migration policy should take into account not only sex, age, and marital status but also whether people move as single individuals or as households. Second, to the extent that education (at least up to the secondary level) is a government-sponsored commodity it can be made a key policy instrument. Without reducing its quantity, the type of education can be modified in a similar way that it is being revised to stem the international skill exodus; for example, the dominant "urban bias" in education content may be reduced. Third, it is apparent that potential migrants are more likely to heed information from kins than government propaganda; in this sense, government resettlement programs in past, for instance, have failed (Simkins and Wernstedt,

1971)). This suggests that government information on re-settlement schemes may better be coursed through kins than communicated directly to potential migrants. Fourth, since males are not necessarily prone to move out of agricultural areas into large urban centers, they may be drawn to alternative destinations provided that suitable employments (not necessarily incomes) are available. Fifth, urban renewal programs (e.g., squatter relocations) have largely failed because they have disrupted the vital kinship matrix. Lastly, the occupational bias against female migrants in cities deserves critical review.

The above implications are broad and probably tentative. They may be considered as hypotheses that deserve more in-depth investigation. The kinship role, for example, should be further analyzed. How specifically does it effect subsequent migration? What is timing of such chain migration? How can kinship ties be made a vehicle for public policy? The education effect is another worthy subject. What is the extent of the migration bias or urban bias in educational content? On the issue of female occupational bias, one may ask: why are female migrants less fortunate than their male counterparts despite the similarity in educational level; to

what extent is the bias due to the migrant status vis-à-vis sex?

Apart from these specific questions, the approach in this study may be used to examine particular streams, e.g., rural-to-rural, rural-to-urban, rural-to-metro, urban-to-rural, etc. It may also be worthwhile to try it on the question: what are the determinants of the probability that a migrant will remain at destination (stable migrant), move somewhere else (chronic migrant), or return to place of origin (return migrant)? Additionally, marriage, fertility, and education at destination may be included as endogenous variables. Finally, more may be learned about migration behavior if the approach is applied to similar survey data from other countries, e.g. Southeast Asian countries, to study comparative individual and household migration.

APPENDIX

OCCUPATIONAL CATEGORIES AND CODES

<u>Code Used</u>	<u>Description</u>
0	Not applicable (includes unemployed)
1	Farm laborers, miners, quarrymen
2	Farm owners, managers, mines foreman
3	Fishermen, loggers
4	Unskilled (non-farm): packers, laborer NEC's (not elsewhere classified)
5	Service: janitors, barbers, housekeepers, launderers, market vendors, service station attendants, waiters, service NEC's
6	Skilled (lower): furnacemen, carpenters, millers, bakers, craftsman, spinners, foot- wear makers, potters, chemical workers, tobacco preparers, lifting equipment operators, firemen, ship crews
7	Transportation and communications: drivers, conductors
8	Skilled (upper): tailors, precision instru- ment operators, machinists, electricians, compositors, painters, bricklayers
9	Sales workers: proprietors, commercial travelers, salesmen
10	Clerical and related: bookkeepers, steno- office machine and telecom operators, clerical NEC's, mail carriers, policemen, inspectors
11	Administrative: government officials, directors, armed forces

Code Used

Description

12 Lower professional: teachers, nurses, technicians, artists

13 Upper professional: chemists, professors, physicians, lawyers, clergymen, social scientists, engineers, pilots

Dichotomous

0 Blue-collar: codes 0,1,2,...,8

1 White-collar: codes 9,10,...,13

Note: See Bacol (1971:194-196) for a discussion of this occupational classification scheme.

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