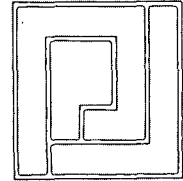


COMMUNITY AND FAMILY FACTORS INFLUENCING FAMILY MIGRATION IN ILOCOS NORTE



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ABSTRACT

Data from a sample survey in Ilocos Norte are used to demonstrate that both family and community structure influence family migration patterns. Family socio-economic status and demographic composition influence family migration, and so do several facets of community structure, including socio-economic development level, commercialization of agriculture, and the community prior migration levels. The process by which context influences migration is an interactive one. Similar families behave differently depending on the nature of the community. The size of the community's prior migrant group is the key community feature altering the response patterns of individuals. The estimated multivariate, multilevel, interactive model yielded results which are almost completely opposite those which would have emerged if the authors had relied on a description of the aggregate differences between high and low migration communities. These results demonstrate the importance of employing fully specified models of migration to evaluate contextual effects. Through use of the interactive model, the authors are able to identify the complete pattern of interactions between family economic status, development level, and community prior migration levels.

INTRODUCTION

Despite the burgeoning of migration studies throughout the world since the 1960s, there remains a gap between the research focus and the desired uses for that research. Several observers of migration research have found that population research generally has continued to ignore the information needs of development policymakers (United Nations, 1981). Research has dealt with the individual determinants of migration, yet programs influencing migration are implemented in specific community or regional settings. To be useful to planners, we must include the setting or community in our research, without ignoring the demonstrably

important individual characteristics. Therefore, a multilevel approach to migration research is called for, one which includes the levels and institutions which are the concern of planners as well as the individual who is the actual migrant.

This paper¹ presents the results of an empirical test of a multilevel model of migration behavior in Ilocos Norte, the Philippines. It distinguishes families with any form of migration from those who have not adopted a form of migration, and shows how migration behavior is jointly determined by both family economic concerns and community social and economic structure. The first part of the paper discusses

contemporary development, urbanization, and migration patterns in Ilocos. The following section outlines distinctions between communities with high and low 1980-82 migration levels. The third section presents the contextual model, including the hypotheses to be tested in this paper. The fourth section discusses the interactive, multilevel model estimated to test these hypotheses. The final section discusses these findings and their implications for anticipating migration responses to the current Philippine development plan.

THE RESEARCH SETTING

Ilocos Norte has long had a history of migration to other parts of the Philippines and to the USA; it also contains a diversity of community settings ranging from hilly or mountainous terrain to flat, irrigated lands. Therefore, Ilocos Norte was selected as the site for a major study of migration decision making, the Philippine Migration Survey. (For details about the study design, see Abad and Cariño, 1981.)

In the random sample used for this research, individual, household, and community information was collected from over 4,000 individual members in 619 households and 25 urban poblaciones² and rural barangays³ of Ilocos Norte in 1980. The sample design permitted calculation of family and community-level variables for each of the 25 communities, the level at which the community effects were expected to operate. Reinterviews of house-

holds and individuals were conducted in 1982. Migrations of any of the members during the 1980-82 period were recorded, and any family members no longer resident in the household or any who had migrated during the interval for at least one month were coded as migrants.

Ilocos Norte is the northernmost province of the Ilocos region, a narrow coastal strip extending north from Pangasinan province 160 miles north to Cape Bojeador. It is bordered on the west by the South China Sea and on the east by the Cordillera Central mountains. The coast is pierced by river ravines at several points. In Ilocos Norte, the principal river that slices its way down from the mountains to the coast is the Laoag, on which the provincial capital Laoag City is located. The floodplains of the Laoag river is intensively farmed, as are the floodplains of the minor rivers elsewhere in the province. Between the river floodplains, the land is hilly, making continuous cultivation impossible, but not sufficiently rough enough to make travel or communications between valleys impossible (Lewis, 1971:15).

Ilocos Norte is one of the less urbanized provinces in the Philippines. In 1970, only 57,933 persons or 16.9 percent lived in urban areas or poblaciones. By 1980 the share of regional population in poblaciones had increased to 23.8 percent (NCSO, 1980). Three-fourths of the population lived in small rural villages or barangays of less than 1,000 or

1,500 persons, many as small as 250-500.

Only the coastal municipalities of Ilocos Norte were included in this study. The eight municipalities included in the random sample were Laoag, Bacarra, Badoc, Batac, Paoay, Pasuquin, Pinili, and San Nicolas. In 1980, the median level of urbanization was 34.2 percent for these municipalities, reflecting slightly higher urbanization level than the rest of the Ilocos region. The most urbanized of the sample municipalities was Laoag.

In keeping with their predominantly rural residence, the majority of Ilocos Norte families are farmers or agricultural workers. In 1980, 65 percent of Ilocos Norte's workers were employed in the agricultural sector. The average farm size in 1980 was .97 hectares, down from 1.36 hectare average of 1971 (INDEPP, 1984:38, 96). In 1980, the median population density for these municipalities was 298 persons per hectare, ranging from 107.4 to 542.9 for Laoag. The ratio of rural population to farmland was much lower. On the average, there were 8.66 persons per hectare of farmland. In 1980, 67.7 percent of the families had at least one member working in the agricultural sector, and in 22 percent of the families, two or more of the workers were employed in agriculture.

Most farmland in Ilocos Norte is devoted to the production of rice, with over two-thirds of the farm area in each municipality planted to rice. But agricultural development in Ilocos is hampered by both

climate and land. Unlike other regions of the Philippines, Ilocos has a distinct dry season, which alternates with a monsoon season (Lewis, 1971: 15). Without irrigation, families are limited to one "long" crop and one "short" crop of rice, rather than three crops permitted by rains or irrigation in other regions. In addition, the monsoon character of the rainy season means that the rains are highly concentrated in the wettest months of late July and August, thereby limiting optimal planting times to a very short-period of time which generates seasonal bottlenecks in demand for hired labor during the peak planting times (Lewis, 1971: 55-65). If most of the farmland were irrigated, the distribution of rains would not hinder rice production. But in Ilocos, most of the land is not irrigated. On the average, only 40.7 percent of the farmland owned by families in this sample was irrigated. There were four communities in Bacarra and Badoc where over 80 percent of the land was irrigated in 1980, but there were many more communities where 10 percent or less of the farmland was irrigated.

The difficulties of rice culture in Ilocos Norte are augmented further by the nature of the terrain. Unlike the flat paddy lands of central and southern Luzon, Ilocos Norte is principally hilly terrain and the farther one moves from the coast, the more hilly the terrain becomes. Close to the coast and in the riverine floodplains, rice is grown in fairly flat, irrigated fields, but rather away from

the coast, rice is grown on the hill-sides using a direct seeding approach. With the direct seeding cultivation and the dependence on rain, yields drop by more than half, from 3600 kg to 1200 kg per hectare. The mountains effectively limit the area of rice culture to the lower valleys and foothills. This limits the arable area, with virtually no possibility of agricultural development by extending the area cultivated or by irrigation of the upland fields.

Without the possibility of expanding the area cultivated, over the last few decades the population dependent on each hectare of land has increased. By 1970, the population to farmland ratio had reached 81 persons per hectare (Abad and Cariño, 1981). Almost half (42.4 percent) of Ilocos region farmers had farms of one hectare or less in 1975, a much higher degree of near landlessness than in the rest of the country, where only 13.6 percent of the farms were one hectare or less (Smith, 1981). The situation had deteriorated considerably by 1980, when 82 percent of the families in this survey owned less than one hectare. In the municipalities surveyed, the ratio of population to farmland ranged from 72 to 246 persons per hectare. The average size of the separate farm parcels was .24 hectare. In some communities, the average parcel was less than 0.1 hectare, while in others it was twice the average of .24 hectare.

In part due to the low level of irrigation, rice yields in Ilocos are fairly low. In 1975, average rice

yields for the Ilocos Norte municipalities included in this survey ranged from a low of .5 to 4.1, with a median of 3.8 tons per hectare. In contrast, average rice yields for rainfed lowland rice in Central Luzon were 3.1 to 6.9 tons per hectare, with a median of 4.6 tons per hectare (Herdt and Wickham, 1978: 8).

Although more than half of the regional income is from the agricultural sector, very little of it is from commercialized agriculture (Abad and Cariño, 1981: 44). In 1980, families in this survey sold crops with an average value of ₱1,190. Half of the families (51.5 percent) had no crop sales at all. The economic development of the province is sharply curtailed by this absence of agricultural sales. In 1980, only 4.3 percent of Ilocos Norte's workers were employed in manufacturing (NCSO, 1980).

Ilocos is one of three regions where growth of employment opportunities has most lagged behind population growth. In other regions, 60 percent or more of the labor force worked at least part of 40 or more weeks per year, and about half of the labor force worked full-time for all 40 weeks. But in Ilocos, only 39 percent of the labor force worked full-time for at least 40 weeks. Not many more (43 percent) worked full-time or part-time during each week of the 40-week period (Gibb, 1974: 230). Unemployment and underemployment are much more serious problems in

Ilocos than in other regions of the Philippines.

Given the poor economic base and low intensity of labor use, family income in Ilocos Norte is lower than the national average. In 1975, the average family income for Ilocano families was P5,525 compared to almost P5,840 nationwide and P10,469 for Metro Manila. With the high inflation of the late seventies, by 1981 the regional family income rose to P11,270, but in Ilocos Norte it rose to only P9,828, which was P5,552 in 1978 pesos. Not only was average family income lower in Ilocos Norte, it failed to keep up with cost of living increases (INDEPP, 1984; NEDA, 1983).

In a comparative analysis of the consequences of economic differentiation, Elliott (1975:313-345) shows that the impoverished in both urban and rural areas of several developing countries usually are equally disadvantaged with regard to education, health or other basic elements of social consumption. Surprisingly, this is not the case in Ilocos Norte. By several measures of human capital development and health, the Ilocanos compare very well with the rest of the national population. Their levels of education and health are at least as high as residents of the rest of the Philippines. In 1979, the infant mortality rate was 49.6 (per thousand) in the Ilocos region, compared to 49.4 for the nation (NCSO 1983: 422). In 1980, 85 percent of the Ilocos population over age 10 was literate, compared to 83 percent of the national population (NCSO, 1983).

In 1980, slightly more Ilocos residents had completed high school (21.9 percent) than the national average, where only 20.4 percent of the population over age seven had completed high school (NCSO, 1980).

The combination of low levels of income, little potential for agricultural development, and relatively high levels of human capital development is prototypical of areas expected to have high rates of outmigration (Connell et al., 1976; Findley, 1977; Lipton, 1982:195-198). The expectation is confirmed: Ilocos Norte has long been an area of outmigration, sending her relatively well-educated people to destinations throughout the Philippines and beyond. Even as early as 1903, Ilocanos dominated the population of certain areas of Cagayan Valley and Central Luzon. Although the pattern of migration has been one of encroachment on nearby, less populated regions, Ilocanos have been involved in large numbers in long distance pioneering migration to Mindanao and to the U.S., primarily Hawaii and California (Smith, 1981: 14). In the 1960-70 period, the Ilocos region had an outmigration rate of 32.6 per thousand, with a rate of 85 for Ilocos Norte, one of the highest rates of outmigration for Philippine provinces. Outmigration rates dropped throughout the 1970s all over the Philippines, but less from Ilocos than other regions. During 1970-75, the Ilocos region had the highest level of outmigration, 16.9 per thousand. In the last half of the decade, outmigration rates changed

little for Ilocos, dropping slightly to 14.6 per thousand (Concepcion, 1985:31; Lee, 1983:45).

The coastal municipalities selected for this study reflect the same levels of outmigration as the rest of Ilocos Norte. For the 1970-75 period, the outmigration rates ranged from 74 to 157 per thousand, with a median of 110. Net migration was negative in all but one of the municipalities, where it was just barely positive at six per thousand. The median for all the sample municipalities was -38.8, with the most net losses being -119 per thousand. Laoag had a net migration rate of -36.0.

Between 1980 and 1982, the outmigration rate (per 1000 family members) was 195. An average of one (1.08) person per family left the communities included in this sample, but there was much variation in the levels of outmigration. In some communities over two persons per family left, while in others the average was less than one out of two families.

If the definition of migration is broadened to include circulation of at least one month's duration, the migration rate rises to 430 per thousand. In fact, staying, not migration, was the rare event in these families, with 70.4 percent of the families adopting some form of short- or long-term migration during the two-year period. In the high migration communities, 80 percent or more of the families had at least one migrant member, while in the low migration communities, 50 percent or less of the families had migrants.

THE HIGH AND LOW MIGRATION COMMUNITIES

A closer look at the communities that had very high and very low levels of migration during 1980-82 would reveal that of the 25 communities included in the survey, the five comprising the upper quintile with the highest family migration rates are a poblacion in Laoag; a poblacion in Bacarra; a barangay in Batac; and two barangays in Pasuquin. The five communities making up the lower quintile include only one poblacion in Paoay. The remaining four are barangays in Bacarra, Paltit, and two from Paoay. Selected characteristics distinguishing the high and low migration communities are given in Table 1.

Among the high migration communities, the mean proportion of family members adopting any form of migration during the 1980-82 period was 0.668 (668 per thousand family members), indicating that two out of three family members had migrated. In contrast, the mean family migration rate was .233 (233 per thousand family members), indicating that only about one out of four family members adopted any form of migration during the same interval among the low migration communities. This difference in proportions is highly significant with a Z value of 8.208, which has a probability lower than .001.

Previous discussions of the relevance of specific community features influencing migration have suggested the following as possible correlates: development levels, infrastructure or facilities, accessibility, information

Table 1. Selected Characteristics of the High and Low Migration Communities in Ilocos Norte, 1980

Variable	Low	High	F	Signif.
Mean migration rate, 1980-82*	233	688	8.2	.001
Percent w/ migration experience	42%	44%	0.8	n.s.
Percentile rank for accessibility	84%	45%	45.2	.001
Percentile rank for municipal facilities	47%	83%	41.0	.001
Municipal urbanization level (1975)	17%	31%	5.9	.05
Proportion wage and salary income (1975)	17%	28%	4.7	.10
Percentile rank for municipal outlook	30%	82%	154.5	.001
Average number consumer durables per family	2.6	4.3	73.9	.001
Proportion w/ insufficient family income	60%	43%	75.4	.001
Farmland owned per family (hectares)	.27	.17	23.1	.001
Parcels owned per family	2.8	1.4	9.0	.010
Proportion farmland irrigated	52%	30%	11.4	.001
Average value of crops sold (pesos)	1179	263	48.8	.001

*Test statistic for mean migration rate is a Z-statistic instead of an F.

about migration from prior migrants, pattern of agricultural development, and economic outlook or potential. (For a discussion of the role of these variables in influencing migration decisions, see Findley, 1982; Gard-

ner, 1981; Goodman, 1981; and Wood, 1981.) Let us now compare the high and low migration communities to see if they differ along any of these dimensions.

Communities with a high proportion of families who have some migration experience are expected to have a higher migration rate, because families in these communities will be more likely to have a direct source of information about migration, either from one of their members or from a neighbor who has migrated. But in these communities, there was no difference between the levels of prior migration. In both high and low migration communities, around 43 percent of the families had prior migration experience.

Migration was expected to come more likely from communities with better access to alternative labor markets, but in this group of communities just the opposite pattern occurred. The high migration communities had inferior transport services and were farther from Laoag than the low migration communities. (See Table 1 for the group means and the F statistics calculated for between group differences.)

Another pattern opposite expectation was the difference in infrastructure or facilities of the municipalities in which the communities were located. The high migration communities were expected to be found in municipalities with a scarcity of facilities, but the high migration communities were located in municipalities which rank at the upper end of the range for public services and facili-

ties. They have more schools, clinics, hospitals, drug stores, grocery stores, and gas stations than the low migration communities, which rank at the bottom end of the municipal facilities scale. A significantly greater number of rural barangays in the high migration communities were electrified between 1975 and 1980. (Test for between-group variation gives $F = 40.2$, significant at the .0000 level.)

Urbanization level could be associated with either more or less migration. If family members find work in nearby cities or poblaciones, then the relation will be negative; but if increased urbanization is not matched by increased labor absorption in the urban areas, more urbanization will be reflected in higher migration, particularly if other facets of urbanization, such as transportation and educational opportunities, increase the chance of migration. Among these communities, the positive relation between municipal urbanization and migration is observed. The high migration communities were located in municipalities with a significantly higher urbanization level, but with a slower pace of recent urbanization. In 1980, the average urbanization level of the municipalities in which high migration communities were located was 30.8 percent, almost double the 16.9 percent obtained in the municipalities of the low migration communities. Between 1970 and 1980, however, the municipalities with low migration communities urbanized at a much quicker pace than the high migration municipalities, where there was virtually no increase in the share of

urban population (Difference in pace of urbanization significant at the .01 level, with $F = 12.1$.)

Although the high and low migration communities are located in municipalities with similar 1975 incomes from agriculture and manufacturing, a larger share of income is composed of wage and salary income in the high migration than in the low migration communities. Since the economic structure of the municipalities does not vary in relative concentration in primary or secondary activities, the higher proportion of wage and salary income may be indicative of two processes.

The higher proportion of wage and salary income may indicate a higher level of proletarianization in the agricultural sector. This interpretation is consistent with other Philippine researches documenting increased proletarianization of the farm sector associated with the changes in production technologies and landownership patterns of the 1970s (Hayami and Kikuchi, 1981; Barker and Cordova, 1978; Aguilar, 1981). With the adoption of the high yielding varieties, especially among the medium and large landowners, there is less use of exchange labor and more substitution of hired manpower for family labor (Kikuchi and Hayami, 1983). By 1975, on farms of 2.5 hectares or more, 84 percent of the labor used was hired. Even small farmers with less than 1.6 hectares hired 59 percent of their labor requirements (Barker and Cordova, 1978).

Alternatively, the higher proportion of wage and salary income may reflect

diversification of farm family income sources, with farm families increasing their reliance on wage sources of income. In 1977, farmers in two Central Luzon barrios obtained only 51 percent and 68 percent of their income from farming; 20 percent and 32 percent was derived from wage earnings (Dozina, 1978: 6). While some of the wage earnings with which farm families supplement their farm income undoubtedly come from work on other farms, as Ledesma (1982) details in his study of several farm families, it is likely that some of the off-farm earnings come from work in the tertiary or service sector where wage and salary income dominates. A survey of employment opportunities showed a 274 percent increase in light transport-related jobs between 1967 and 1971 in the Gapan area of Nueva Ecija (Gibb, 1974). Both proletarianization of the agricultural work force and increased work off-farm in the tertiary sector would increase the proportion of income derived from wage and salary sources. Between 1975 and 1980, the percent of workers in sales, transport, and services in Ilocos Norte grew by 8.7 percent, compared to only 4.6 percent for the agricultural sector (INDEPP, 1984: 38), evidence at least of tertiarization.

With either increased proletarianization or tertiarization of the labor force, spatial migration is likely to rise, as more persons are required to move out of their communities for short or long durations in search of employment, a process well-documented in Latin America (Gudeman, 1978; Deere and DeJanvry,

1979). There is evidence of this type of migration in the Philippines. Both the landless and the small landowners are increasingly migrating regularly or seasonally in pursuit of agricultural or non-agricultural, seasonal or regular earning opportunities (Aguilar, 1981: 58-59; Kikuchi and Hayami, 1983; Ledesma, 1982:27, 104).

Where the economy has been relatively strong and living standards have been improving, we expect families to be less likely to move. Again, the observed pattern contradicts our expectations. The economic outlook was more favorable in the high migration communities, where the mean value of the municipal economic outlook variable was .334, as opposed to $- .472$ for the low migration communities. The economic outlook variable focuses on the level of agricultural output and its spread throughout the municipality. These results show that the more favorable the farm outlook throughout the municipality, the greater the probability that families will adopt some form of migration strategy. One possible interpretation of this pattern is that where yields are high, families are in a better position to hire labor and send sons and daughters to work in the city where there might be a higher return for their labor, as Kikuchi and Hayami (1983) observed for villages in Central Luzon.

Along with their greater municipal urbanization and development levels, the high migration communities have a higher level of economic development than the low migration communities. The high migration com-

munities are at the upper end of the development levels included in this sample, while the low migration communities are at the opposite end. The average family in the high migration communities owns 4.3 consumer durables, in contrast to only 2.5 among the low migration communities. The high migration communities contain a smaller proportion of families who do not have sufficient income to cover their needs, 43 percent compared to 60 percent in the low migration communities. This pattern also contradicts our expectation that development would reduce the probability of migration; we have no ready explanations for this reversal, but suggest that it could reflect the process of replacing family with hired labor, as indicated above, as well as the possibility of spurious correlation with other characteristics associated with socio-economic development.

In contrast to the higher standard of living and achieved economic development, the low migration communities have more agricultural assets than the high migration communities. This matches our expectation that communities with a less productive agriculture will have more outmigration. There is no significant difference in the average number of farmers per family, so the participation in the agricultural sector is equivalent (about 1.5 farmers per family in both groups). But the low migration communities have a more advantaged position. Families in the low migration communities own more land, .27 hectares per family, versus .17 hectares in the high migration communities. Each family

in the low mobility communities owns 2.78 parcels, compared to only 1.41 in the high migration communities. The families in the high migration communities are more likely to rent parcels, but the number of parcels rented (.34 per family) does not offset the differences in land owned. Tenancy is the same (two parcels per family) in both groups of communities. Nor are average parcel sizes different in the two sets of communities. Whether owned or tenanted, families in the low migration communities have more land to work than families in the high migration communities.

The low migration communities have a larger irrigated area and a larger proportion of farm land under irrigation. In the low migration communities, 52 percent of the farm land is irrigated, in contrast to only 30 percent in the high migration communities. Whether due to the larger land area farmed per family, the greater availability of irrigation, or to the different production technologies made possible by these or other factors, the farm families in the low migration communities have a larger volume of crop sales. Their agriculture is definitely more productive than the agriculture of the high migration communities. In these communities, agricultural development appears to have put a damper on migration.

These contrasts illustrate the distinctions between the high and low migration communities. Except in the case of Bacarra, both high and low migration communities are not located in the same municipalities. The

high migration communities are located in municipalities with a higher average level of urbanization, a higher level of commercial and public services or facilities, and a more favorable economic outlook. At the municipal level, it appears that urbanization and infrastructure or physical development are associated with more spatial migration of all forms. This conclusion is reinforced by the distinctions between the communities themselves. The high migration communities also have a higher level of economic development, a smaller proportion of impoverished persons, and a higher standard of living for their residents. Despite the higher level of economic development, the high migration communities do not have a more productive agriculture. In fact, the opposite pattern obtains. The communities' crop sales are lower for the high migration than for the low migration communities, and less farmland, especially irrigated land, is owned by the families of the high migration communities. Although general economic development appears to foster migration, agricultural development hinders it. Finally, and unexpectedly, the high migration communities are less accessible than the low migration communities.

From these comparisons it would be concluded that migration is spurred by the following community features:

1. location in more urbanized municipalities;
2. location in municipalities with more infrastructure or facilities;
3. location in municipalities with a more favorable economic outlook,

especially in the agricultural sector;

4. lower accessibility;
5. higher socio-economic development; and
6. lower levels of agricultural development.

But conclusions cannot be made without simultaneous analysis of the characteristics of the families in each of these communities. The relations between community level of migration and each characteristic could be due to the influence of these structural features of the communities, but it is possible that these observed relations are spurious, and when the full set of possible factors influencing family migration is considered, these relations will disappear. The observed relations between community characteristic and migration rate could reflect differences in the proportions of more migration-prone families in the two groups of communities. To distinguish between these alternative explanations of the relations between community features and migration rates, a multivariate, multilevel analysis must be employed in which migration is considered a function of relevant family and community characteristics.

We turn now to a discussion of this contextual model of migration.

THE CONTEXTUAL MODEL

There are two basic forms of contextual migration models. The intervening model posits an indirect action of the community or context on individual variables, which in turn have a direct influence on migration. Context operates by changing the number of persons most at risk for migration, a

compositional effect. In contrast, the interactive model portrays community factors as having a direct influence on migration, either simply or interactively with individual or family variables. According to the interactive model, the context changes the response pattern of individuals, so that individuals with similar characteristics are more likely to migrate in some contexts than in others.

The interactive model was chosen because families with similar characteristics are not expected to make the same migration decisions across all community contexts. After controlling for relevant family characteristics, migration decisions will be more likely in some community settings than others. Specifically, family migration decisions are expected to vary with respect to the community characteristics discussed earlier. We expect both independent, direct effects of these community characteristics and interactive effects, where the effect of a given family or community characteristic is altered by the presence of other community characteristics.

The decision of interest is whether any member of the family has moved during the period under observation. Any migration for a duration of one month or more is counted. Previous work by Hugo (1980) and Mantra (1981) have shown the importance of considering both short- and long-term migrations, which are motivated by the same kinds of economic forces, but differ due to different family compositions and community structures or locations.

The economic circumstances of the

family and its socio-demographic composition are expected to have the most influence on migration decisions. With the adoption of an interactive contextual model of migration, however, these family influences are expected to vary with community structure. The aspect of community structure expected to have the most interactive influence on changing the influence of family characteristics is community socio-economic development level.

Analysis is focused on five aspects of family structure: its number of adult members (F.GE. 15), its economic risk-taking status (F.CLASS2), the employment and training of its labor force (F.FAMLF), its migration experience (F.ANY80), and its involvement in the agricultural sector (F.FARMR). The definitions and expected direction of effect for these variables are given in Tables 2 and 3. Table 4 gives the means and standard deviations for the variables. All the family-level variables are expected to have a positive effect on migration, except for family farm involvement, which is expected to have a negative effect.

The dimensions of community structure expected to influence family migration were identified in the discussion of the differences between high and low migration communities, but the direction of effect is not expected to be the same as that illustrated by these contrasts. The municipal urbanization level is not included, because it cannot be predicted *a priori* whether urbanization level will have a positive or negative effect

on family migration, in part because urbanization level is spurious, and the underlying variables that urbanization reflects are included in the model. After controlling for family characteristics, all but two of the community characteristics are expected to have a positive effect on the probability

of family migration. The two community features expected to have an inverse effect are community socio-economic development level (C.DEVT) and municipal economic outlook (MU.RISK). The three community features expected to have a positive effect on migration are

Table 2. Definition of Variables

F. ANYMOB:	1 if family has adopted some form of migration during 1980-82; 0, otherwise
F. ANY80:	Number of family members with any migration before 1980
F. CLASS:	Weighted average of index of family possessions and perceived status compared to others in community
F. CLASS2:	Economic risk-taking status of family (F. CLASS squared)
FAMLF:	Weighted average of family mean educational attainment, number full-time equivalent labor force members, ratio of workers to dependents, number unemployed or students, and number of white collar workers.
F. FARMR:	1 if family owns or tenants land and sells produce; 0, otherwise
F.GE.15:	Number of family members age 15 or over
C.DEVT:	Weighted average of average number of consumer durables owned by families in community, mean educational attainment of families in community, and proportion with sufficient income
C.AGRIC:	Weighted average of value of crops sold by families, ratio of labor force to farmland owned, and the occupational dispersion index.
MU. RISK:	Weighted average of municipal rice yields in 1980, 1975-80 change in number of barangays electrified, and decline in the number of farms in the municipality
C.ACCESS:	Transport facilities index divided by distance to Laoag
C.ANY.PC:	Proportion of residents with prior migration experience
MU.FACIL:	Weighted average of number in the municipality in 1975 of each of these: grocery stores, gas stations, hospitals, medical stations, clinics, family planning units, and sari-sari stores.

Note: The variables that are weighted averages were calculated as follows: The individual family or community variables theoretically expected to measure the concept were subjected to consistency analysis. Cronbach's alpha was used to determine whether a variable measured the same dimension as other. When no further variables could be deleted without a drop in the Cronbach's alpha, the variables were standardized and the item-total correlations were used as weights in calculating the composite variables for subsequent analysis.

commercialization of agriculture (C.AGRIC), accessibility (C.ACCESS), and prior community migration levels (C.ANY.PC). Finally, physical dev-

elopment or facilities (MU.FACIL) are not expected to have an effect on family migration probabilities, once the other family and community characteristics are considered.

Table 3: Expected Signs of the Contextual Model of Migration

Variable	Name	Expected Sign
Family migration experience	F.ANY80	+
Family economic risk-taking status	F.CLASS2	+
Family human capital level	FAMLF	+
Number of adults in family	F.GE.15	+
Family farm involvement	F.FARMR	-
Community migration experience	C.ANY.PC	+
Community accessibility	C.ACCESS	+
Commercialization of agriculture	C.AGRIC	+
Municipal economic outlook	MU.RISK	-
Community development level	C.DEVT	-
Municipal facilities level	MU.FACIL	0
Interactions:		
Class-Development	CLAS.DEV	-
Class-Economic Outlook	CLAS.RSK	-
Class-Mig. Reference Group	CLAS.ANY	-
Class-Accessibility	CLAS.ACC	-
Family migration-Development	FANY.DEV	-
Development-Accessibility	DEV.ACC	-
Development-Community Mig. History	DEV.ANY	-
Development-Economic Outlook	DEV.RSK	+
Accessibility-Commun. Mig. History	ACC.ANY	+

Interactive terms are included in the model because the pattern of family and community effects is expected to vary from community to community. Two focus variables are selected for analysis of interactive effects. One is the family's economic status, operationalized here as a curvilinear variable to measure the risk-taking dimension of socio-economic status, which is the class dimension expected to affect migration decisions. The second focus variable is community socio-economic development level, the community characteristic believed to have the most pervasive influence on migration.

Both the poor and the more well-off families are expected to have a higher probability of adopting some form of migration, because both are in a situation in which they have little to lose and potentially much to gain from migration. The poor are expected to be willing to undertake the risks associated with migration because they are already in a loss situation, and therefore do not risk losing an income or security which they do not possess. The more well-off are also expected to be willing to undertake the risks of migration, because their economic and human capital resources would enable them to earn more in a more favorable economic region than Ilocos. Furthermore, these well-off families have more disposable income that can be invested in migration.

Table 4. Summary Statistics for Variables Used in the Model

VARIABLE	MEAN	STD DEV	MINIMUM	MAXIMUM	VALID N
F.ANYMOB	.701	.458	.000	1.000	619
F.ANY80	.942	.919	.000	5.000	619
F.CLASS2	.823	1.127	8.695E-08	6.431	615
F.CLASS	.001	.908	-2.536	1.938	615
FAMLF	.000	.775	-1.371	2.514	619
F.GE.15	3.326	1.504	1.000	9.000	619
F.FARMR	.814	.389	.000	1.000	619
C.ANY.PC	.403	.122	.250	.771	619
C.ACCESS	1.500	1.395	8.000E-03	5.000	619
C.AGRIC	-.001	1.676	-5.620	2.442	619
MU.RISK	-.002	.985	-1.746	1.393	619
C.DEVT	-.002	2.567	-3.526	6.142	619
MU.FACIL	.000	6.628	-4.651	12.966	619
CLAS.DEV	.346	3.875	-17.470	29.638	615
CLAS.RSK	.031	1.353	-7.393	8.959	615
CLAS.ANY	.329	.457	2.936E-08	2.725	615
CLAS.ACC	1.207	2.527	4.347E-09	27.626	615
FANY.DEV	.126	3.651	-17.628	24.567	619
DEV.ACC	-1.561	4.675	-15.809	10.893	619
DEV.ANY	.017	1.154	-2.314	2.705	619
DEV.RSK	.737	2.953	-4.884	8.556	619
ACC.ANY	.586	.562	4.153E-03	2.075	619

This positive association between economic risk-taking status and migration is expected to be changed by the community context. In particular, the greater the development level, the more favorable the economic outlook, the better the accessibility, and the greater the proportion of families with prior migration experience, the

less effect economic risk-taking status is expected to have on migration. In these contexts, smaller class-related differentials in migration can be expected. Thus, the signs for the family-community interaction terms are expected to be negative.

In general, a negative relation between community socio-economic

development level and migration is expected, but a variation in the strength of influence of community development across different contexts may be anticipated. Migration is expected to be more likely in communities that do not provide sufficient jobs or economic opportunities to afford a decent standard of living for their residents. The increases in migration associated with low development levels are expected to be heightened by other community characteristics which themselves make migration more likely. Because development is expected to have an inverse effect on migration, this accentuation of the migration effect of development by other community characteristics leads to a prediction of negative signs for the development-community characteristics interaction terms. It is expected that the migration effect of a low level of development will be made more negative or steeper by favorable access to Laoag and by the presence of a large proportion of families with prior migrations. A favorable economic outlook is expected to reduce migration at low levels of development, so a positive sign is expected for this interaction. Accessibility is expected to increase the migration response for communities with a high degree of prior migration; therefore, a positive sign is expected for the C.ANY.PC and C.ACCESS interaction.

THE MULTILEVEL MODEL

Because the dependent variable (F.ANYMOB) is a dichotomous response any family migration or not, logistic regression is used to estimate

the model parameters. Only the dependent variable takes the form of a logit; the independent variables are left in their original metrics, without conversion to a loglinear form. This means that the coefficients can be interpreted as the effect of a unit change in the independent variable on the log-odds of adopting family migration. The software used for these estimates was SPSS-X's Probit procedure. The coefficients of the estimated logistic regression model are shown in Table 5.

All family-level variables have the expected direction of effect, but the coefficients for the family human capital variables, FAMLF, and family farm involvement, F.FARMR, are not significantly different from zero. Poor or well-off families with prior migration experience and more than two adult members of the household unit are more likely to migrate than families without these characteristics. After controlling for these variables, the human capital level of the families' labor force and its ownership and involvement farming do not independently affect the probability of family migration.

Three of the community-level variables have signs in the expected directions, but only two community variables have coefficients significantly different from zero. These two community-level variables are C.DEVT, community socio-economic development level, and C.AGRIC, degree of commercialization of the agricultural sector. Families that live in communities with a low level of socio-economic development and with

Table 5. Estimated Logistic Regression Coefficients of Family and Community Effects on the Probability of Family Migration Between 1980-82, Ilocos Norte, the Philippines

VARIABLE	COEFF.	STANDARD ERROR	COEFF./S.E.
F.ANY80	.26284	.07622	3.44846
F.CLASS2	.40646	.19342	2.10149
FAMLF	.04541	.10021	.45315
F.GE.15	.39875	.06094	6.54380
F.FARMR	-.09736	.14261	-.68272
C.ANY.PC	.20582	.89094	.23102
C.ACCESS	-.07206	.20874	-.34522
C.AGRIC	-.06063	.03862	-1.56984
MU.RISK	.10084	.08589	1.17412
C.DEVT	-.23586	.14059	-1.67766
MU.FACIL	-.01544	.01283	-1.20302
CLAS.RSK	-.03076	.06209	-.49541
CLAS.ANY	-1.02200	.45090	-2.26660
CLAS.ACC	.03186	0.4387	.72629
CLAS.DEV	.03322	.02644	1.25633
FANY.DEV	-.00747	.02906	-.25716
DEV.ACC	.01212	.01697	.71441
DEV.ANY	.46356	.32307	1.43485
DEV.RSK	.02439	.02260	1.07940
ACC.ANY	-.06370	.55356	-.11508
	INTERCEPT	STANDARD ERROR	INTERCEPT/S.E.
	4.15367	.41331	10.04964

Note: Due to use of individual cases rather than cell distributions, goodness of fit statistics were not calculated for this model. Since signs are predicted, the one-tailed *t*-test is used. Critical *t*-values are 2.33, 1.65 and 1.28 for the .01, .05, and the .10 significance levels, respectively.

a low degree of commercialization in the agricultural sector are more likely to migrate than families that live in communities with high levels of economic and agricultural development.

After controlling for the other community features, physical development or facilities have no additional influence on migration probabilities, as indicated by the insignificant co-

efficient on MU.FACIL. Contrary to our expectations, C.ANY.PC, the proportion of families with migration experience, C.ACCESS, accessibility to Laoag, and MU.RISK, the municipal economic outlook, have no independent effect on the probability of family migration. Of the interactions, only two have coefficients significantly different from zero, CLAS.ANY and DEV.ANY.

Although the community previous migration level does not have an independent effect on migration, it does alter the relation between family class and migration. The coefficient on the CLAS.ANY variable, the interaction between family economic risk-taking and the community prior migration variables, is significantly different from zero. As expected, the greater the proportion of families with migration experience, the lower the effect of family class status on migration. In these communities, the middle class families are more likely to migrate than in communities with a lower level of previous migration.

Furthermore, the community previous migration level also affects the relation between socio-economic development and migration. In general, families in less developed communities are more likely to migrate, but in communities with a large proportion of families with migration experience, there are smaller migration differentials associated with development. This is opposite our expectation. Instead of increases in the response to development, a high degree of migration from the community makes development level less relevant to migra-

tion decisions. It is as if migration has an inertia of its own.

When both interactive and independent effects of community variables are considered, only two of the community features fail to have any influence on migration. Accessibility to Laoag has no influence on migration, perhaps because these communities are all relatively close to Laoag, compared to the hilly and more distant municipalities excluded from the PMS sample. Also, economic outlook has no predictive power. Again, this may be because the differences in economic outlook between these municipalities are minor, compared to interregional or international differences.

Only one of the community-level variables with a coefficient significantly different from zero has a sign opposite our predictions. Instead of having a positive sign, C.AGRIC, commercialization of the community's agricultural sector, has a negative sign. It was expected that commercialization of agriculture, as measured by the average value of crops sold and the ratio of labor force to farmland owned, in the presence of few opportunities for work outside the agricultural sector, would lead to more migration. But the reverse occurs. Families living in communities with a more commercialized agriculture are less likely to migrate.

DISCUSSION AND POLICY IMPLICATIONS

This study focused on the importance of family and community structure for understanding family migration decisions in Ilocos Norte.

Using data from the 1980-82 Philippine Migration Survey, the authors showed that the probability of migration is affected by the family's economic risk-taking status, the number of adult members of the household, and its prior migration experience. After controlling for these family characteristics, two community characteristics were shown to have a direct influence on the probability of migration: one), the community's socio-economic development level; and two), the degree of commercialization of its agriculture. As expected, after controlling for these factors, physical development or facilities had no additional influence on the probability of migration.

If an intervening model had been used, the analysis would have stopped here, the conclusion would be that there is no effect of the other community features expected to influence migration; further, that family migration is affected by both family and community characteristics, but that the effect of certain family characteristics, namely economic risk-taking status, does not vary across contexts.

But the analysis did not stop there. An interactive model was adopted for this analysis. With the inclusion of the interactive terms, it was shown that the importance of family class status varies from context to context. Specifically, in communities with a high proportion of families with migration experience, the class-related migration differentials are narrowed. Furthermore, this same community feature, C.ANY.PC, also affects the nature of the relation between development and

migration. In communities with a greater proportion of families with migration experience, there is a flatter differential in migration associated with the development level.

How do these results compare with the findings that emerged from the comparison of characteristics of the high and low migration communities? Where the bivariate, aggregate comparisons of differences between high and low migration communities showed no differences in the community levels of prior migration, the multivariate, multilevel analysis showed that the community levels of prior migration had a significant interactive effect. The proportion of families with migration experience was shown to be a contextual factor that weakened the class-related migration differentials, with the curvilinear class effect having less influence on migration in communities with a large number of families with migration experience. In addition, the community's prior migration experience also affected the relation between development and migration, with the inverse development effect weaker in communities with a large number of families with migration experience. Both of these patterns of effect would have been missed if reliance was only on the descriptive comparison of the high and low migration communities.

The comparison of the high and low migration community characteristics would also have been misleading as on several other community characteristics. The aggregate comparisons suggested that communities with a higher level of physical development

or facilities, with a more favorable economic outlook, and a lower level of accessibility would have higher family migration rates. When a multivariate, multilevel model was used, none of these was shown to have any direct or interactive effect on family migration. In addition, although the high-low migration community comparisons suggested that community socio-economic development level influenced the aggregate migration rate, the direction of effect in these analyses was opposite the pattern found when multivariate, multilevel models were used. Instead of development increasing family migration, these analyses showed that development reduces the level of family migration. There is agreement between the aggregate, bivariate comparisons and the multivariate, multilevel analyses only on the effects of community agricultural commercialization, where both analyses agree that commercialization reduces the probability of family migration.

These striking differences in the conclusions suggest that the patterns we observed in the comparison of high and low migration communities were artifactual. The apparent relations were in part compositional, since the multilevel model showed that family migration rates vary by type of family, and the high and low migration communities vary in their composition. But the observed relations could also have been spurious. When all relevant community features were included in the analysis, the observed relations were not stable. Some relations disappeared, and others

changed direction. These differences underscore the importance of using multivariate, multilevel models for examining contextual influences on migration.

What are the implications of the findings for future migration trends from Ilocos? Variable by variable, the results will be applied to likely demographic and economic trends in the Ilocos region to assess the likely migration consequences of these trends. Discussion will also be made on specific development programs likely to affect migration, given the results of our analysis.

Family migration experience

Although outmigration rates from the Ilocos region have been declining over the last few years, the outmigration rate from Ilocos remains among the highest in the nation. The past migration rates have already generated a large reservoir of families with migrant members. Even if net outmigration rates suddenly and unexpectedly dropped, the size of this group of families with migration experience would be unchanged. Since migration is more likely for families who already have experienced at least one form of migration, the existence of this large pool of experienced migrant families implies that future Ilocano migration rates can also be expected to rise.

Number of adult members in the family

The results indicate that the greater the number of adults in a family, the greater the likelihood of family migra-

tion. The projected increase in the number of persons over age 15 in the Ilocos region is expected to be one of the highest in the nation. By 2000, the number over age 15 will double, while there will be only a 50 percent increase in the number over age 15 in the nation as a whole. Furthermore, compared with other regions or the nation as a whole, the increase in the number over age 15 will be much more rapid. Nationally, the number over age 15 will increase by 126 percent between 1980 and 1990, but in this same time period, the number over age 15 in Ilocos will increase by 176 percent, a rate of increase only matched in Bicol, Eastern Visayas, and Central Mindanao (Concepcion, 1985: 26). Given the sensitivity of family migration to the number of adult members of the family, these projected increases can only lead to greater adoption of migration by family members.

Family economic risk-taking status

The model shows that the upper and lower classes are more migratory than the middle class. Unfortunately, there are no predictions on the distribution of Ilocano families by socioeconomic status. It is therefore not possible to predict a migration response for a projected change in class distribution. The current development plan, however, is aimed at improving the level of living for low-income groups. If it is successful, there will be an increase in the proportion of middle class families, those with sufficient income to meet their daily needs and have some left-over for school fees or

house improvements. Since the middle class is shown to be risk-averse and less likely to migrate, this potential increase in the middle class should reduce family migration levels. Conversely, any increases in impoverishment and inequality of income distribution will enlarge the population of economic risk-takers and increase the levels of family migration in Ilocos Norte.

Family human capital level

Contrary to expectations, the education, employment or occupations of family members have no influence on the probability of migration. This means that the planned programs for improving the quality and standard of education throughout the region are unlikely in themselves to increase the Ilocano family member migration rates. This is true in so far as the programs increase the educational attainment of youths. The programs addressed specifically at nonformal training of out-of-school youth and the unemployed (NEDA, 1984: 33) may have an effect on the probability of family migration, but since this type of educational program was not modelled in this analysis, no conclusion can be made about the effects of these programs. It can be said, however, that simply increasing the proportion of family members employed, one possible outcome of the nonformal training programs, is not likely to alter family migration rates, since this was one aspect of the human capital variable for which no significant effect was found.

Family farm involvement

Contrary to expectations, there is no statistically significant effect of family farm involvement on the probability of migration. Ownership or tenure rights to land with enough production for crops to be sold does not reduce the probability of migration. Although there are Certificate of Land Transfer recipients in only a few of these communities, it does not appear that accelerated distribution of certificates of land transfer is likely to influence family migration decisions one way or another. But this conclusion is based on the prevailing extremely small amounts of farmland owned or tenanted by farmers in this sample. It is possible that if prevailing farm sizes were quite a bit larger, then different migration effects would be observed. In its present configuration, however, there is little evidence that agrarian reform has a counter-migratory effect. But neither is there evidence that ownership of very small parcels leads to migration associated with semi-proletarianization of the small farmer families. Although this pattern has been found in other parts of the Philippines (Bautista, 1977), follow-up interviews showed that those with insufficient land were semi-proletarianized but engaged in activities primarily inside Ilocos Norte or their own municipalities.

Community agricultural development

Contrary to expectations, commercialization of the community's agricultural sector reduces the probability of family migration. This suggests that these Ilocano barangays are following

the peasant stratification path of agricultural development, not the peasant polarization model upon which our hypothesis was based.

According to Hayami and Kikuchi (1981), implementation of agrarian reform and adoption of modern rice-growing practices has produced major changes in the social and economic institutions of Philippine villages, but the response to changes has not been uniform. In some villages, the introduction of modern varieties has produced polarization of the village into a small class of large landowners and a large class of landless farm workers, much as in the Latin American case. Alternatively, the introduction of the institutional and technological changes in agriculture in recent years has led to peasant stratification in other villages. Instead of the changes producing two highly unequal classes, in these villages the changes have produced subdivision of the peasant classes into subclasses, with many different tenancy agreements and great variation in the amount of land tilled by each peasant subclass (Hayami and Kikuchi, 1981: 79-142).

In the polarization case, we expect migration of the displaced landless, while in the stratification case we expect less migration and more absorption of labor through various tenancy and cultivation agreements. The lower levels of migration from communities with a more commercialized agriculture suggest that these Ilocano communities have followed the peasant stratification route. This would also be consistent with the distribution of landownership, which

shows only 20 percent of the families as landless and a fairly even distribution of families according to land owned. The stratification aspect of the community agricultural pattern is also implicit in the measurement of the pattern of commercialization of agriculture, which includes a measurement of the ratio of labor force to land owned per family. This is currently normally distributed, also indicating no polarization of the landholdings. Finally, follow-up interviews in the sample communities showed that residents owned most of the land in their communities. Both owner-cultivators and tenants cultivate several small parcels, with many families being both owners and tenants. This evidence supports the validity of the stratification pattern for these Ilocos communities.

Our finding of an inverse relation between community agricultural commercialization and migration is specific to the agrarian pattern observed in these communities. In the context of peasant stratification, for which there is evidence in these communities, commercialization of agriculture does reduce family migration.

Assuming that this same pattern of a diversified set of landowners or tenants continues, then current agricultural development programs in Ilocos Norte can be expected to continue to have an inhibitory effect on family migration. The current Philippine Development Plan calls for expanded efforts to commercialize agriculture in the Ilocos region. Efforts are underway to further

develop tobacco, garlic, and oil seed crops. In follow-up interviews with farmers, they repeatedly stressed the need for low interest loans to enable them to buy the fertilizer and gasoline for tube well pumps, both essential to higher productivity and expansion of cash crops. The development of communal irrigation systems using the water made available by the Palsiguan river irrigation project will facilitate commercialization of rice and other crops in some of these communities; elsewhere, increased drilling of deep wells would enable farmers to increase yields and intensity of cropping. Complementary efforts to increase the productivity of rain-fed rice production also would help the many farmers in this sample who have no access to irrigation or deep wells (NEDA, 1984: 32, 63, 144). All these should have the effect of reducing family migration levels in Ilocos.

The balanced agro-industrial strategy adopted by the plan also calls for more stringent collection of debts, amortization payments, and imposition of other fees that will be paid by the farmers using the services (NEDA, 1984: 60-66). Already, these policies are being felt by farmers, with some reporting lower use of loans for fertilizer due to the high interest rates, and low prices for commodities. In a couple of communities, they are using less fertilizer now than in previous years, and more are seeking hired farm work with its low but guaranteed income. Our results regarding the migration effects of commercialization of agriculture

are valid only for a commercialization pattern that includes the same prevailing patterns of rice yields and labor to farmland owned, one of the components of the measure of community agricultural structure. Changes in either would alter this relation, and with this change, the nature of the relation between communication *per se* and migration could change.

Community economic development

As expected, communities with a higher standard of living for a larger proportion of the population have lower probabilities of family migration, after controlling for relevant family characteristics. This is an indication that when there is a sharing of development benefits among community members, they are less likely to migrate. This is a definite confirmation of the often expected but little documented relation between socio-economic development and migration.

The current Philippine Development Plan has the overall objective of improving the incomes and welfare of the poor. Several of the development programs address the components included in our measure of community socio-economic development. Programs to expand and upgrade the educational system could increase the secondary school enrollment rates, one of our measures of development. Programs to increase net farm productivity would increase family income, as would programs designed to generate additional jobs in rural areas; such increases in income would be reflected in higher

living standards. Furthermore, the emphasis on improving the lives of the poor could reduce the proportion with insufficient income in each community. This, too, is another aspect of development measured in this study. If these programs are successful in raising the income and welfare of the rural poor, lower probabilities of family migration can therefore be expected.

Community infrastructure and facilities

As expected, once we control for community socio-economic development and other community features, physical development or facilities have no additional effect on the probability of family migration. What counts is how well people actually live, not how many schools, clinics, or shops from which they can choose. Planned efforts to expand social infrastructure in Ilocos will have an effect on migration not by the addition of the facilities themselves, but only indirectly through the effects of use of those facilities. Even if the Ilocano barangays are dotted with new communal water faucets, rural health stations, and schools, there will be no change to family migration patterns unless real socio-economic development accompanies these new structures.

Interactive effects of prior migration

Although there was no direct independent effect of community prior migration on the probability of family migration, the proportion of families with migration experience

did alter the relations between class and migration and between development and migration. Communities with a large proportion of families with migration experience will have smaller class-related migration differentials, while they will have a larger between-community difference related to development level. This makes it difficult to predict future changes in migration associated with the expected rise in the proportions of families with migration experience. The interactive model estimated here indicates that the effects of economic risk-taking status or development on family migration cannot be fully predicted unless the community context of previous migration levels is taken into consideration.

There are several ways of interpreting this effect, but we prefer to interpret it as a reference group effect. In every community surveyed there was at least one family that previously adopted some form of migration; these families with migration experience can be said to comprise a migrant reference group for families without migration experience. The larger the proportion of families with migration experience, the larger the number of families in the migrant club. If these families share similar characteristics with families who have not yet joined the migrant club, it will be seen as easier to join the club. The larger the club, the stronger the expected reference group effect.

In communities where the migrant reference group is large, we can expect a smaller class-related migration

differential, implying that the middle-class will be more migratory. But all classes are expected to be more sensitive to low levels of development in the presence of a large migrant reference group, which if it is successful serves to underscore the ways that migration can offset the low development level of the community.

What does this imply for the expected response to development programs in this area? The communities with relatively high migration rates will be the ones which will have the largest migrant reference groups. These same communities, therefore, will be the ones in which development efforts generating a larger middle class are likely to have the least effect on reducing the probability of migration. On the other hand, if development is not successful in producing a larger middle class, these high migration communities will be more likely to have heightened migration rates among all classes. Given these alternative responses to development, it seems that development will have little effect on migration in the communities where a large proportion of the families have already adopted migration. Conversely, the greatest sensitivity to development programs will be in the communities which have had relatively low migration rates and have a smaller migrant reference group.

In conclusion, it has been demonstrated that both family and community structures influence family migration patterns. Family socio-econ-

omic status and demographic composition influence family migration, in concert with several facets of community structure, including socio-economic development level, commercialization of agriculture, and the community prior migration levels. The process by which context influences migration is an interactive one. Similar families behave differently depending on the nature of the community. The size of the community's prior migrant group is the key community feature altering the response patterns of individuals.

The estimated multivariate, multi-level, interactive model yielded results which were almost completely opposite those which would have emerged if we had relied on a description of the aggregate differences between high and low migration communities. These results demonstrate the importance of employing fully specified models of migration to evaluate contextual effects. The complex pattern of interactions between family economic status, development level, and community prior migration levels was identified through the use of the interactive model.

NOTES

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²Poblacion is the Pilipino word for town proper.

³Barangay, the smallest political unit in the country, is equivalent to a village.

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