Economic and Social Status in Household Decision-making: Evidence Relating to Extended Family Mobility

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Summary. Models of the allocation of household resources use as a decision rule either the maximisation of a household utility function or the solution to a Nash-bargaining game. The literature on residential mobility has exclusively used the former to analyse the household's decision to change location. This is despite the strong empirical evidence that allocations in other areas are more consistent with the bargaining model. In this paper micro-data from Taipei, Taiwan, are used to determine which approach is most appropriate for studying housing mobility decisions. The mobility decisions of nuclear and different types of extended family household are compared to test whether the social and economic roles of different generations affect the household decision process, as is consistent with the bargaining approach. Thus, household mobility is analysed with a richer description of household structure than is found in the current literature, which implicitly treats households as either a nuclear family or some smaller unit. The results support the bargaining model of household decision-making. Conditional probabilities differ between nuclear and extended families, when a member of the eldest generation in an extended household is the household head, and when a member of the eldest generation contributes to household earnings. Of these, it is found that economic status is paramount to social status.

1. Introduction

The decision to move involves changes in commuting times, neighbourhood amenities and social networks. These changes cannot be expected to have equal effects on the utility of each member of a household. For multimember households, a model of mobility must be embedded in a model of household decision-making. Two general alternative frameworks exist for modelling this decision-making process. The common preference (Becker, 1964) and Nash-bargaining (McElroy and Horney, 1981) approaches differ in the role they give to individual household member preferences in intrafamily resource allocation. This difference has important implications for the mobility de-

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cision, primarily in the treatment of the opportunity costs of mobility. This paper examines the relationship between household social and economic structure and mobility decisions to determine which approach is more appropriate for modelling mobility. In doing so, a second contribution is made by extending mobility analysis beyond the characterisation of a nuclear family or smaller unit to include extended families.

Housing demand studies use the household as their basis of analysis. The structure of most research implicitly assumes that households are either a nuclear family or some smaller unit. Differences in household structure result because the household head is female, adults are not married and there are variations in household size and in the number of children. Yet, in many parts of the world, more traditional family structures—where households include more than two generations or two or more related families—are much more common. With rising immigration, this is increasingly important in First World countries as well because immigrants are more likely to live in extended family arrangements. In the US in 1990, households whose head was born outside the US made up 4.2 per cent of all households, but 7.6 per cent of all extended households, a rate of extended family formation that is 81 per cent higher than for the total population.[1] For Canada, the extended family formation rate for immigrants is 169 per cent higher. For some cities, this is particularly relevant; for example, the household head is an immigrant in over 20 per cent of households in Los Angeles and Miami.

A core issue in this study is the effect of non-financial transactions costs on household mobility decisions. When a move occurs, individuals in the family are likely to experience a disruption in their links with their community of origination. This cost and the consistent result that mobility falls with age is used to see how mobility behaviour varies by family type—between nuclear and extended families, and within different types of extended family—differentiating by whether the household head is in the first generation (eldest/grandparent) or second generation (parent), whether a member of the eldest generation earns income and whether or not the head is the primary earner. The prior assumption is that both family type and the choice of head reflect the family's social structure. The number, make-up and importance of income earners reflect its economic structure. If mobility behaviour differs by choice of head, number of generations or identity of income earners, support is found for the bargaining framework of household allocation decisions over common preferences. For the latter course, the focus of interest is on both total income and number of earners, if the identity of the earners matters. Properly specified, the different outcomes will reflect either social or economic factors that strengthen the bargaining position of a given household member relative to others in determining household decisions such as moving.

Important differences in mobility decisions are found depending on a household's social and economic hierarchy. However, economic contribution matters more than social status. Conditional mobility rates are lower for extended families than for nuclear families. Among extended families, conditional mobility rates are lower if the head of household is in the eldest generation. They are also lower if a member of the eldest generation contributes to household earnings. Finally, they are lower still if the elder-generation household head is the primary earner in the household. Of these, the largest effect on the conditional marginal mobility probability is when the eldest-generation household head earns income. This result is inconsistent with Becker's common preferences characterisation of the household resource allocation and decision-making process, but consistent with the bargaining methodology.

The paper is structured as follows. Section 2 presents the theoretical and empirical framework for modelling the mobility decisions of households. The data are presented in section 3. The empirical results are presented in section 4. The paper concludes in

section 5 with a discussion of future research.

2. Theoretical and Empirical Framework

The traditional or neo-classical model of household decision-making stems from Becker's (1964) application of the model of individual consumer demand to families. In this framework, all members of the household exhibit common preferences by jointly maximising a single household welfare function. This yields a model that treats the household as equivalent to a single individual, but where there are pooled resources. Outside the labour–leisure trade-off, which family member provides the resources is immaterial as allocations reflect the marginal rates of substitution between elements of the joint welfare function. If, for all J household members, there is a vector $\mathbf{X}$ of i goods with price vector $\mathbf{P}$ and each member has income y, then the demand function for each good depends on prices and total income

$$\mathbf{X}_i = \sum_j^J \mathbf{X}_{ij} = \mathrm{f}\left(\mathbf{P}, \sum_j^J y_j\right) \qquad (1)$$

Only total household income, the sum of the y_j terms, matters, not its distribution. As a result, one would expect consumption patterns to be invariant to who obtains the income.

This approach has come under attack by researchers such as Manser and Brown (1980) and McElroy and Horney (1981, 1990).[2] They propose an alternative characterisation of the household as allocating resources internally through a bargaining process. Household members have individual utility functions that contain both private and joint consumption goods. Household members have an incentive to allocate resources in the direction of goods that they particularly care about. For instance, McElroy and Horney (1981) use a co-operative Nash-bargaining game among members to allocate resources. The outcome depends on a household member's prospective utility outside the household. Their bargaining position is strengthened by the amount of income or

wealth they can control. As these increase, a member is better able to obtain an allocation that more closely matches their personal preferences because of the stronger and more credible threat to leave the household and achieve a purely private utility outcome. In comparison with equation (1), demand now separately reflects the individual incomes

$$\mathbf{X}_i = \sum_j^J \mathbf{X}_{ij} = \mathrm{f}(\mathbf{P}, y_1,\dots, y_J) \qquad (2)$$

Individual income is no longer substitutable as was the case in equation (1). This is because the distribution of total y among the individual y_j's matters.

There is a body of empirical work supporting the bargaining approach rather than the 'common preference' neo-classical model. Thomas (1990) looks at the effect on family health of unearned income in the hands of mothers and fathers and finds that unearned income in the hands of a mother yields a bigger effect on family health and dramatically higher child-survival probabilities. In a paper of interest to the present topic, Hayashi (1995) looks at the food expenditures of Japanese extended families and finds that, as the income of the senior generation rises, household expenditures on food more closely mirror the population preferences of the elderly. Both of these, and the other papers in this literature such as Cai (1989), Schultz (1990) and Browning et al. (1994), find that allocations are affected by the resources brought to the household by an individual member. This result is inconsistent with common preferences.

In this paper, this analysis is extended to the mobility decisions of households. The central question is whether mobility decisions are affected by social status and contribution to household resources, as predicted by the bargaining model. The hypothesis tested here is that the greater the role of the elderly first generation, the lower the mobility probability. Role is described in terms of social status—whether the household head is in the first generation—and by economic contribution—whether an elderly head contributes income or is the primary economic

resource. Underlying this hypothesis is the strong assumption that older household members are less likely to move. This is consistent with the literature that finds mobility falling as the age of the household head increases.[3]

Over time, individuals living in a place develop a complex network of friends, social organisations and casual economic relationships. If these social connections attenuate with distance, then the increased difficulty of maintaining these relationships is an opportunity cost to mobility, referred to as the social cost of mobility.[4] It is expected that this social cost will increase with age. For example, the dislocation costs to an elder who has lived in an area for many years should be much greater than those for a younger household member.

There is an extensive literature on mobility, but this paper is one of the first to address the issue for extended families. To date, mobility research has examined mobility and a variety of different factors and with more sophisticated joint and simultaneous decision-making processes (see Quigley and Weinberg, 1977 for a review of the early literature). Among a large volume of more recent work are treatments of mobility and income by McLeod and Ellis (1983), the effect of life-cycle events on mobility by Clark and Onaka (1983) and Kiel (1994) on house price movements and mobility. The analysis of mobility as part of a joint, simultaneous decision includes the relationship between tenure and mobility (Boehm, 1981; Ioannides, 1987; Zorn, 1988; Ioannides and Kan, 1996; and Kan, 1999) and between renovation and mobility (Montgomery, 1992). One paper that does look at more complex family structures and housing demand and mobility is that of Chang and Chen (1999). They investigate the role of life-cycle stages on housing demand and mobility using a typology of nine different household types.

In the mobility literature, changes in a household's life-cycle stage or income affect the decision to move. In all cases, the decision is modelled in a common preferences utility framework, comparing household utility at the household's current location relative to that at alternative locations. In the absence of the ability to improve the current location through renovations and additions, and ignoring tenure choice, the mobility decision is a binary-response choice.[5] An *ex post* decision to move or not to move is observed. Under the common preferences model, this would be the case of moving when the household welfare function has utility of moving (U_{i1}) greater than that of not moving (U_{i0}). In this framework, for household i, the expression can be characterised as the function of a set of household and location/structure characteristics X and Z

$$U_{i1} = \alpha_1 + \gamma_1 X_i + \beta Z_1 + \varepsilon_{i1} \qquad (3)$$

$$U_{i0} = \alpha_0 + \gamma_0 X_i + \beta Z_0 + \varepsilon_{i0} \qquad (4)$$

The probability model of choosing moving is

$$\begin{aligned} P(U_{i1} > U_{i0}) = P(\varepsilon_{i1} - \varepsilon_{i0} > \alpha_0 - \alpha_1 \\ + (\gamma_0 - \gamma_1)X_i + \beta(Z_0 - Z_1) \end{aligned} \qquad (5)$$

Between the two locations, the household does not change. If it is assumed that local public goods and amenities are the same at all locations in Taipei City, then the move decision is independent of location characteristics Z_j, depending only on household characteristics X_i.[6] Formally, it will be assumed that any elements of the excluded Z that are not orthogonal to X are captured in *ex post* location fixed effects.

Under the Nash-bargaining approach, the mobility decision cannot be presented as a function of a household utility function. Instead, the decision is a function of the bargaining outcome, which depends on the relative utility functions of individual household members inside and outside the family for their respective incomes and endowments and at different locations. Without estimating these inside and outside the family utility functions, structural estimation of the bargaining model is difficult. Researchers have tended to test this approach by identifying consistent outcomes. For instance, Hayashi (1995) looks at Engel curves and shares

rather than levels of household consumption in various age-correlated categories.

3. Data

The data are taken from the 1990 Census of Population and Housing for Taipei, Taiwan. To avoid tenure choice issues, the sample is limited to local, civilian, owner-occupier households, yielding a population of 240 589 households. Taipei data are used for two reasons. First, as noted above, relative to the US, extended family households are much more likely to be headed by a member of the elder generation and the focus of the paper is on the effects of household structure. Secondly, over 80 per cent of the housing stock in the greater Taipei metropolitan area is multifamily, which allows the exclusion of single family residences.[7] Additions to multifamily dwelling are difficult, costly and typically illegal; hence, to satisfy a demand for increased housing services, households must move. This enables the joint renovation/mobility decision to be ignored (Montgomery, 1992).

The combination between social structure and economic roles generates four types of extended family based on two divisions. The first is between first- and second-generation households, and the second is whether the head is the primary earner. The individual reported as the household head is same person who is registered as such on the legal documents on file with the local government office so that the concept of headship is recognised by the respondents. Table 1 provides the basic counts and frequencies for these categories for Taipei in 1990. Most households are nuclear families.[8] The univariate values for these families are similar to second-generation extended households. Both have an unconditional mobility rate of approximately 31.5 per cent, for moves within the past five years. Surprisingly, the head is more likely to be the main provider in the second-generation extended families than in the nuclear families. Among extended families, the household head was in the first generation in 57 per cent of extended famil-

ies.[9] In contrast, in the US in 1990 only 25 per cent of extended families were headed by someone of the oldest generation, suggesting that more North American extended families occur when an elderly parent moves in with their children rather than existing as a traditional family structure. Independent of family hierarchy, earnings are expected to affect the weights assigned to the preferences of individuals in the household in calculating the aggregate household dislocation costs. To reflect an individual's economic importance to the household, the second division separates households depending on whether or not the head is the primary earner. Among first-generation households, the head is the primary earner in only 26 per cent of cases. For second-generation heads, this rises to 84 per cent; it is 78 per cent for nuclear families.

The univariate statistics on whether a household has moved in the past 5 years clearly show aggregate differences among household types. Nuclear families are more mobile than extended families—31.4 per cent as against 23.8 per cent of these families have moved within the past 5 years. However, when we break down extended families by type, it is quite evident that it is those families where the elders are the household head—the more traditional family structure that we label 'first generation'—that drive the lower mobility rate. Only 18.2 per cent of these first-generation extended families have moved within the past 5 years, compared with a surprising 31.6 per cent of second-generation extended family households; the latter figure is effectively identical to that of nuclear families.

In Table 2, mean variable values are provided for all families and broken down by family type. Tests for difference of means reject equality in nearly all cases, which is not surprising given the sample sizes. However, by casual examination of the values, it is striking how similar second-generation extended and nuclear families are to each other and how different both are from the first-generation extended families. The average difference between the mean values for each of the dummy variables for the two types of

Table 1. Characteristics of family types in Taipei, 1990

	Total sample	Nuclear families	Extended families		
			All	First generation	Second generation
Number of households	175 421	155 757	19 664	11 527	8 137
Percentage of total	100.0	88.8	11.2	6.6	4.6
Percentage moved in past five years	30.6	31.4	23.8	18.2	31.6
Percentage with head as main provider	72.1	74.9	49.4	24.6	84.2

extended family is 0.25, compared with 0.05 if the same comparison is made between mean values for second-generation extended vs nuclear families. For the age of the household head, the differences are 23.1 and 4.4 respectively. Among the key differences are that first-generation-headed households have older heads, with less education, are more likely to have a female head and the head is much less likely to be the primary earner. However, in first-generation extended family households, a member of the elder generation is more likely to work than is the case in a second-generation extended family. This suggests that the latter is much more likely to be a situation where ageing parents move in with their children, rather than the traditional Chinese extended family household.

4. Empirical Results

To differentiate between the common preferences and Nash-bargaining approaches to modelling household decision-making it is determined whether a family member's social or economic status matters for the mobility decision. The mobility decision is a discrete variable indicating whether a household has moved during the past five years. The binomial mobility decision is estimated using a logit specification. The cumulative logistic distribution function has the following form

$$\Lambda(\gamma X) = \frac{e^{\gamma X}}{1 + e^{\gamma x}} \qquad (6)$$

For social status, differentiation is made between nuclear and extended families, and then whether for extended families the household head is in the eldest generation, where designation as head is assumed to indicate a higher social status for the household member so designated. Economic status is measured by whether a member contributes to household earnings.

The explicit tests are as follows. First, if the added social status conferred by designating a member of the eldest generation as household head results in a lower conditional move probability, this is interpreted as evi-

dence in support of the bargaining model, where social status increases an individual's bargaining position. Secondly, if the conditional move probability falls when a member of that generation earns income, this is interpreted as evidence in support of the bargaining model, where social status increases an individual's bargaining position. This effect would be intensified when the eldest-generation household head is the primary earner.

These probabilities are conditional on other variables presented in Table 2 such as household size, number of earners, age and education of head, and presence of school children. The primary weakness in the data is that neither income nor wealth, for individuals or households, is observed. The control variables are intended to be controls of themselves and to proxy for household permanent income. The variables of interest will only suffer bias if there is a component of income and wealth correlated with them and uncorrelated with the included controls. It is believed that this is unlikely.

In Table 3, the basic mobility regression results are presented. Regressions (1)–(3) are for the entire pooled sample, while regressions (4) and (5) are for extended family households only. Coefficient estimates for most of the control variables are quite stable across specifications and samples. Consistent with the literature, mobility declines with age and is lower in the presence of school-age children. It is found that Taiwan-born households are less likely to move, which is likely to reflect a stronger bond with a given neighbourhood, and that mobility rises with education attainment.

Robust results are found for the effects of family structure and social status of an elder generation on mobility. These results consistently reject the common-preferences approach in favour of the Nash-bargaining treatment of decision-making. The negative estimated coefficient on the extended family dummy in regressions (1)–(3) indicates lower mobility for extended families. This results controls for household size, number of earners and the presence of school-age chil-

Table 2. Variable means by household type

Variable	All households	Extended families			Nuclear families
		All	First generation	Second generation	
Characteristics of head—dummy variables					
Female-headed household	0.2814	0.3459	0.4659	0.1761	0.2732
Family is local Taiwanese	0.7576	0.739	0.7337	0.7466	0.7599
Head is over 60 years old	0.1937	0.431	0.7069	0.0403	0.1637
Age of head	47.92	55.98	65.53	42.46	46.9
Head with high school education	0.2366	0.1767	0.1184	0.2592	0.2442
Head with college education	0.3164	0.2394	0.0953	0.4437	0.3261
Household characteristics—dummy variables					
Both spouses work	0.2473	0.1876	0.0999	0.3117	0.2548
Household head is primary earner	0.7208	0.4944	0.2462	0.846	0.7493
Household income from eldest generation in household	0.7489	0.1622	0.2334	0.0612	0.823
Number of earners	1.538	1.666	1.664	1.67	1.522
Household with school age children	0.4901	0.5016	0.5028	0.4999	0.4887
Number of household members	3.885	4.564	4.683	4.395	3.798
Reason for move—dummy variables					
Change in number of household members	0.0671	0.075	0.0678	0.085	0.0661
Convenience for job or school	0.1636	0.1203	0.0954	0.1555	0.1691
Change for better neighborhood amenities	0.0728	0.0635	0.0487	0.0845	0.0739
Number of observations	175 421	19 664	11 527	8 137	155 757

Table 3. Determinants of mobility

	All households			Extended-family households	
	Regression (1)	Regression (2)	Regression (3)	Regression (4)	Regression (5)
Household structure and income variables					
Extended family	−0.1382 (0.026) ***	−0.1277 (0.065) **	−0.1297 (0.026) ***		
First-generation extended family	−1.35 (0.183) ***	−1.132 (0.202) ***	−0.868 (0.198) ***	−0.9486 (0.244) ***	−0.9288 (0.245) ***
Household head is primary earner		−0.1403 (0.017) ***			
Household income from household's eldest generation				−0.1885 (0.102) *	−0.1861 (0.102) *
Interaction—household head is primary earner * first-generation extended family		−0.1852 (0.076) *	−0.1315 (0.076) *		−0.053 (0.077)
Interaction—household head is primary earner * extended family		−0.0105 (0.070)			
Interaction—household income from household's eldest generation * first-generation extended family		−0.1852 (0.091) **	−0.1703 (0.126)	−0.2484 (0.119) **	−0.2154 (0.128) *
Interaction—household income from household's eldest generation * extended family			0.1325 (0.098)		
Control variables					
Femaled-headed household	0.0449 (0.013) ***	−0.0143 (0.015)	0.0387 (0.013) ***	0.1802 (0.041) ***	0.1775 (0.041) ***
Household head was born in Taiwan	−0.1988 (0.013) ***	−0.1934 (0.013) ***	−0.1985 (0.013) ***	−0.1698 (0.040) ***	−0.1695 (0.040) ***
Age of household head	−0.0498 (0.001) ***	−0.0512 (0.001) ***	−0.0499 (0.001) ***	−0.0491 (0.003) ***	−0.0491 (0.003) ***
Interaction—age of household head * first-generation extended family					
Head with high school education	0.1537 (0.015) ***	0.1583 (0.015) ***	0.1555 (0.015) ***	0.1939 (0.051) ***	0.1947 (0.051) ***
Head above college education	0.2808 (0.014) ***	0.2856 (0.014) ***	0.2811 (0.014) ***	0.3874 (0.050) ***	0.3882 (0.050) ***
Number of household members	−0.114 (0.007) ***	−0.118 (0.007) ***	−0.116 (0.007) ***	0.051 (0.029) *	0.0492 (0.029) *

Table 3.—*Continued*

	All households			Extended-family households	
	Regression (1)	Regression (2)	Regression (3)	Regression (4)	Regression (5)
Household with school-age children	−0.1131 (0.012) ***	−0.1073 (0.012) ***	−0.1119 (0.012) ***	−0.1388 (0.036) ***	−0.1388 (0.036) ***
Number of income earners	−0.0051 (0.009)	−0.011 (0.009)	−0.0006 (0.009)	0.0567 (0.025) **	0.0539 (0.026) **
Both spouses earn income	0.0843 (0.016) ***	0.103 (0.016) ***	0.0863 (0.016) ***	0.1195 (0.053) **	0.122 (0.053) **
Intercept	1.959 (0.043) ***	1.961 (0.047) ***	1.962 (0.043) ***	0.8744 (0.186) ***	0.8806 (0.186) ***
Log likelihood	− 100 582	− 100 560	− 100 559	− 10 262	− 10 262
Number of observations	174 258	174 258	174 258	19 663	19 663

Notes: Standard errors are in parenthesis. Parameters used in the regressions are given in the Appendix.
*** indicates significant at the 1 per cent level; ** indicates significant at the 5 per cent level; * indicates significant at the 10 per cent level.

dren; so the implication is clear that, when a household includes an elder third generation, mobility declines for reasons other than household size, the need to optimise across multiple home-to-work trips and components of household income captured by these variables for the various earners. This mean effect is even lower for extended families where the household head is a member of the elder generation. However, the aggregate effect of the household having a first-generation head depends on the age of the head, as the interaction between the first-generation dummy and age reduces the marginal effect of age on mobility.

Having income increases an elderly household member's bargaining power. Regressions (2) and (3) include interaction terms to identify the marginal effect on conditional mobility when the eldest generation in an extended family has income. Not only is mobility explicitly lower when an elder head of household has income, this negative effect is even stronger when the elder is the primary earner. This latter distinction is only expected in the Nash-bargaining framework, as how income is distributed among household members is of no matter in the common preferences model. When the elder generation has income in a second-generation extended family (the interaction between the extended family and elder generation with income dummies in regression (3) combined with explicit interaction terms for first-generation households), the marginal effect on conditional mobility is positive, but not statistically different from zero.

Regressions (4) and (5) sharpen the difference between first- and second-generation extended households. These regressions are run only on the extended households. Mobility is lower for first-generation extended family households, with the proviso that at a certain age the positive effect of the interaction between head age and this type overrides the mean effect. Regardless of type, mobility is lower when the elder generation has income. This effect is strengthened for the first-generation extended household, as the interaction term between this type and in-

come from the eldest generation is also negative. It is the presence of income that matters, rather than being the primary earner, as in regression (5) the estimated coefficient for the interaction between first-generation type and having the head as the primary earner is not statistically different from zero. Thus, it is only when the head is among the elder generation that earning income matters.

Interpreting marginal effects directly from the magnitudes in logit regressions is problematic. The estimated coefficients $\hat{\gamma}$ in equation (6) are not marginal probabilities as they would be in a linear regression. To calculate the same from logit regression coefficient estimates requires the following transformation

$$\frac{\partial \Lambda(\gamma X)}{\partial X} = \Lambda(\gamma X)(1 - \Lambda(\gamma X))\gamma \qquad (7)$$

To make this analysis straightforward, Table 4 presents estimated cumulative probabilities calculated for both the population and extended family means. What stands out quite clearly is that the largest effects on move probability relate to elder generations earning income. Evaluated for the population means using coefficients estimated on the whole sample, coefficients from regression (3), the largest effect on the marginal move probability is when, in a first-generation extended family household, the eldest generation is the primary earner as opposed to just being an earner—a marginal effect of minus 2.65 percentage points. Compare this with the marginal effect of just being in an extended family. For consistency, the first-generation head where the head is in the eldest generation and is the primary earner is compared with the same criteria in a nuclear (two-generation) family. The marginal effect for the extended family is positive, but negligible.

Social status does not seem to matter. The marginal effect of the elderly being the household head is practically zero, using extended family means and the coefficients from regressions (4) and (5). In contrast, for both types of extended family, if the elder generation earns income there is a clear

Table 4. Estimated probabilities

	Eldest generation earns income	Eldest generation is primary earner	Population means Regression (3)	Extended family means Regression (4)	Extended family means Regression (5)
Family type (percentages)					
Nuclear family	Yes	Yes	26.4		
Second-generation extended family	No	No	24.0	17.8	17.7
Second-generation extended family	Yes	No	25.2	15.2	15.1
First-generation extended family	No	No	30.2	17.4	17.6
First-generation extended family	Yes	No	29.4	12.0	12.5
First-generation extended family	Yes	Yes	26.7		11.9
Marginal effects (percentage point change)					
Household head in eldest generation					
Second vs first generation				− 0.43	− 0.09
Nuclear vs first generation			0.31		
Eldest generation earns income					
First generation household			− 0.79	− 5.41	− 5.09
Second generation household			1.21	− 2.59	− 2.55
Eldest as primary earner			− 2.65		− 0.57

Note: for regression parameters, see Appendix.

negative effect on the marginal move probability. Surprisingly, this effect is approximately twice as large for first-generation extended households. Again, it is income rather than the size of the income that matters. Having the head as the primary earner, the effect using coefficients from regression (5), makes only a minor difference to the move probability—about one-ninth the size of the marginal effect from income alone. These estimated probabilities show quite clearly how economic power trumps social status in its conditional effects on family decision-making.

5. Conclusion

This paper has studied the mobility decisions of extended families. The authors' interest in this topic stems from the neglect of an analysis of how the social organisation of households affects housing decisions in the mobility literature. In non-Western and traditional societies, extended families are more common. Higher levels of immigration from Asia and Latin America are increasing the presence of these family structures in North America: immigrants are at least 50 per cent more likely to live in extended family arrangements than are the native-born.

The results of this analysis indicate that mobility decisions vary by household social and economic organisation. This holds both for the aggregate move probabilities and the marginal effects of selected measures of household characteristics. It has been found that, as the social and economic importance of the oldest generation increases, the greater the marginal effects of those variables that measure disruption costs on household mobility. This suggests, as expected, that the interests of a household member play a greater role in the mobility decision as their economic and social status in the household rises.

Notes

1. These values are calculated from the 1990 US Census 1 per cent Public Use Micro Sample (PUMS) and the Statistics Canada 1996 Census Household Micro-Data sample. The variables provided in the Canadian household micro-data sample undercount extended families. To compensate, the raw counts have been adjusted using the ratio (2.39) of the number of extended families in the US using the correct definition to the number obtained using the definition we must use for the Canadian data.

2. Chiappori (1988a, 1988b) argues against the Nash model in favour of a Pareto-optimality approach that imposes fewer restrictions at the cost of less clear empirical implications.

3. There is a copious literature on mobility. In both developed and developing economies, mobility falls with age. Examples include Clark and Onaka (1983), Kan (1999), Chang and Chen (1999) and Huang and Clark (2002).

4. The social transactions or dislocation costs exist because of the transport costs incurred in retaining existing contacts and the loss of utility and time costs as new contacts are formed after having moved. How these change with family size is not clear. Intrafamily relationships can be expected to substitute for some external connections, but more family members will ensure more relationships to place that might be broken with a move.

5. The utility from moving is the maximum utility available to the household at all other locations. Montgomery (1992) incorporates improvements by comparing the maximum utility if the household moves to that if they stay, where staying is the maximum of no improvements versus improvements. As noted later, the housing stock in Taipei consists overwhelmingly of multistoreyed, multifamily structures. This allows us to abstract away from the renovation and improvement decision in a way that is not possible for most owner-occupier households in North America.

6. The job opportunities, quality of public schools, crime rate and air pollution vary little across Taipei City. For instance, students are not required to attend neighbourhood schools. However, there is a boundary between Taipei City and suburban areas because they fall under different government administration districts.

7. Households who occupy units purchased from government housing projects, units that were inherited or rental units are also excluded. There are a total of 541 364 households. Of these, 44 per cent are in the sample.

8. A nuclear family is defined as a household with at most two generations living together, where all members are related by blood or marriage. Of these households, 9.5 per cent have income from both generations.

9. Extended families are defined as those with at least three generations related by blood or marriage.

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