

Two Tests of the Housing Adjustment Model of Residential Mobility

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Abstract

This paper tests a theoretical microsociological model for the explanation of residential mobility. The theoretical model derives substantial support from two empirical analyses of a causal chain of normative deficits in the residence that affect the level of housing satisfaction, which, in turn, affects the propensity to move. This chain of causation is moderated by the influence of constraining factors that inhibit the perception and salience of deficits, the development of dissatisfaction, the development of a propensity to move and the actual occurrence of residential mobility.

Introduction

The purpose of this paper is to test a model of residential mobility. This paper's microsociological perspective has been used by Morris and Winter (1978) in developing a housing adjustment model, which has been tested in the United States during the past 12 years (Morris, Crull and Winter, 1976; Crull, 1979, 1986; Dillman, Tremblay and Dillman, 1979; Tremblay, 1981; Memken, 1984; Lam, 1985; Coveney and Rudd, 1986; Eichner, 1986; Morris and Jakubczak, 1988). Although Morris and Winter present many alternatives in housing adjustment, this paper focuses on the determinants of residential mobility, the movement of a household from one residence to another within a local area.

Although early studies done by Rossi (1955), Speare (1974), and Pickvance (1974) presented models of residential mobility, Morris and Winter (1975) were the first to use housing norms and normative deficits as key concepts, the framework underlying this paper incorporates the theory that housing deficits (deviations from normatively defined housing conditions) produce housing dissatisfaction, which in turn, produces a propensity to move and subsequent mobility. Journal Paper No. J-13066 of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa; Project No. 2706, a contributing project to the North Central Regional Research Project NC-178.

Theoretical Orientation

The general theoretical orientation for this paper is sociological. The key concept is that there are normatively defined social limits (cultural norms) within which humans operate. When behavior or life conditions deviate from these limits, stress is created, and the means to alleviate the stress are sought. In general terms, the theoretical task is to assess the magnitude of the effect of deviations from housing norms on residential mobility as stress-relieving behavior.

Morris and Winter (1978) view households as evaluating their housing in terms of cultural norms and family/personal norms. Cultural norms are defined as societal standards or rules for behavior or life conditions, and family/personal norms are the household's standards used with respect to itself and its specific situation. Although households are influenced by cultural norms, they may or may not share the norms of

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the culture. In addition to the existence of unique family/personal norms, deviation from cultural norms often is permitted in response to constraining factors in the situation. Consider home ownership as prescribed by a cultural norm. Renters, for example, deviate from the cultural norm of ownership, but they may have family/personal norms that favor rental arrangements or deviate from the cultural norm because they cannot afford to own a home.

According to the housing adjustment theory (Morris and Winter, 1978), when a household's housing does not meet the norms, a normative housing deficit exists, which is defined as a gap between the current housing and the housing prescribed by the norms. If the deficit is perceived by the household and involves a salient housing condition, housing satisfaction is low. When housing satisfaction is low, the household considers some form of housing adjustment behavior. Therefore, housing adjustment behavior will tend to occur whenever a household's housing deviates far enough from the norms to have significantly reduced satisfaction. Housing adjustment behaviors include residential mobility and residential alterations or additions. The household with nonnormative housing considers either moving to another dwelling or changing the present dwelling to meet its needs. This paper, however, will only focus on residential mobility.

Constraints may impinge upon the household's ability to engage in successful adjustment behavior through their effects on the perception of deficits: the determination of salience, the development of dissatisfaction, the development of a propensity to adjust, and the actual occurrence of adjustment behavior. Generally, constraints may be grouped into five categories (Morris and Winter, 1986):

1. predispositions, such as apathy, fatalism or value orientations
2. organizational constraints that deal with the family's ability to solve problems and make decisions
3. resource constraints, such as income, time, skills, and knowledge
4. market conditions (supply and price factors)
5. discrimination based on such factors as sex, race, ethnicity, and age.

Predispositional and organizational constraints tend to operate when the household is involved with identification of deficits, determination of satisfaction, and adjustment through mobility. Resource, market, and discrimination constraints can be strong impediments when the household is considering the feasibility of mobility to reduce dissatisfaction. In this paper, constraints that may impinge upon the household's ability to engage in successful mobility are measured by household characteristics. Household income, for example, represents not only a resource constraint but also the predispositional constraint to the extent that income indexes such variables as apathy and ambition. The specification of the constraints concept is the most incomplete portion of the present tests.

Residential mobility is viewed as norm-guided housing behavior motivated by the desire for acceptance by oneself and others. Household members judge their own housing and the housing of others in terms of norms. Characteristics of a household's dwelling and a neighborhood influence others' responses to the household, and these responses influence the household members' feelings about themselves. Certain assumptions are made in the model (Morris and Winter, 1986) for the present analysis. The first assumption is that the household knows and understands the cultural norms of the society. The second assumption is that the members of the household agree on the norms, and the final assumption is that the variables have reached an equilibrium. This means that recent movers have had time to stabilize their views of their new housing and can realistically assess their motivation for future moves.

The Model

The theoretical model (Figure 1) tested in this paper is a comparative static model,

and the two empirical data sets are cross-sectional. Therefore, the tests are limited to analyzing structural factors involved in the mobility process rather than investigating the dynamics of the process. The model includes five stages of variables: constraints (measured by household characteristics), normative housing deficits, satisfaction with the dwelling, the propensity to move, and residential mobility. Both data sets test propensity to move, but only one data set tests subsequent mobility. The variables, deficits and satisfaction, are intervening variables between characteristics of the household (the exogenous variables) and propensity to move or subsequent residential mobility (the dependent variables). In terms of the theoretical model, it is hypothesized that the dependent variable, residential mobility, is affected by propensity to move, which, in turn, is affected by housing dissatisfaction. Dissatisfaction is hypothesized to be affected by housing deficits. The household characteristics, as constraints, influence the various endogenous variables at each stage in the model. Research by Crull (1986) comparing the housing adjustment model with a typology developed by Sell and DeJong (1983) shows support for the conceptualization of the model.

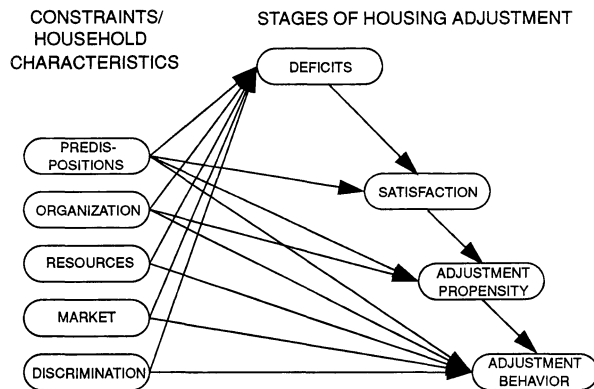


Figure 1. Theoretical model.

The Samples

The objective of this paper is to test the hypothesized relationships in the model with two different samples. The "city data" were collected in 1975 by personal interviews and again in 1978 by mail questionnaires from a stratified random sample of about 6 percent of the households in Fort Dodge, Iowa. Stratification was by enumerating districts in order to guarantee geographic distribution of the sample throughout the city. The completion rate for the 1975 survey was 69.9 percent, yielding a total sample of 455 households. The final data set was reduced to 341 cases in 1978 because of deaths, unverified current residences, migration, and missing financial data (Crull, 1979). The "regional data" were collected by personal interviews in 1985 from a stratified random sample of small towns of less than 20,000 people and rural areas in Illinois, Iowa, Minnesota, Missouri, Nebraska, and Wisconsin. Maps and aerial photographs of randomly selected sections of the six states were used to randomly select houses for the sample. The completion rate for the regional data survey was 85.9 percent, yielding a total sample of 506 households. After adjusting the sample for recent movers and missing data, the regional data set contained 449 households (Eichner, 1986).

The Variables

The two data sets contain similar measures of the variables. The variables are listed in Table 1. Detailed descriptions of the variables can be found in Crull (1979) for the city data and in Eichner (1986) for the regional data. The city data analysis contained five stages of variables with residential mobility as the dependent variable, and the regional data analysis contained four stages of variables with propensity to move as the dependent variable. Ordinary least squares regression was used to test the path models, which are shown in Figure 2.

Table 1. List of variables.

NAME	TYPE OF VARIABLE	DESCRIPTION
Exogenous Variables		
Household Income	continuous	total yearly net income in dollars
Education of Head	continuous	formal education in years completed
Age of Head	continuous	age in years
Age Squared ¹	continuous	(age-mean) ²
Household Size	continuous	total number of household members
Sex of Head	dichotomous	male-headed households coded as 1
Farmers ¹	dichotomous	farmers coded as 1
Endogenous Variables		
Neighborhood Quality ²	continuous	average condition of neighborhood dwellings
Housing Deficits	continuous	total number of deficits
Housing Satisfaction ³	continuous	Likert-type scale indicating satisfaction
Neighborhood Satisfaction ⁴	continuous	Likert-type scale indicating satisfaction
Propensity to Move ⁵	continuous	Guttman scale indicating moving plans
Residential Mobility ²	dichotomous	movers coded as 1

¹Operationalized only in regional data

²Operationalized only in city data

³City data scale (alpha coefficient=.75) included six items: satisfaction with tenure, structure type, number of bedrooms, physical condition of dwelling, style and design of dwelling, and image dwelling gives to others. Regional data scale (alpha coefficient=.82) included six items: number of rooms, number of bedrooms, floor plan, interior condition, interior appearance, and overall housing situation.

⁴City data scale (alpha coefficient=.73) included three items: satisfaction with neighborhood people, neighborhood children and conditions of neighborhood housing. Regional data scale (alpha coefficient=.74) included four items: location of dwelling, neighbors, conditions of nearby housing and overall neighborhood situation.

⁵City data included three items coded (1) thinking about moving, (2) desiring to move, and (3) expecting to move. Regional data included a fourth item (4) definitely planning to move within the next year.

Household characteristics

Five of the household characteristics were measured in the same way for each data set; however, the regional data set contains an additional variable, farm households, be-

cause it is hypothesized that when a farm household's housing is attached to the land that is being farmed, decisions regarding mobility are determined by factors other than housing. Also, age was squared in the regional data to control for the curvilinear effect of age on the endogenous variables (Stimson, Carmines and Zellers, 1981). The household characteristics are given dual roles in this paper: to serve as control variables in the analysis and to serve as measures of constraints on the household that may impinge upon the endogenous variables.

Housing deficits

A normative deficit is defined as a gap between actual conditions and the conditions prescribed by norms. To calculate the value of a deficit, the norm is subtracted from the actual conditions. Positive values indicate a surplus and negative values indicate shortages. Morris and Winter (1978, p.18) describe three types of deficits: Type I, a deviation from the norm in either direction, positive (surplus) or negative (deficit), both of which are undesirable; Type II, a deviation from the norm in which only a surplus is undesirable; and Type III, a deviation from the norm in which only a shortage is undesirable.

Deficits were calculated for four family norms (tenure, structure type, space, and expenditures) in the city data set. Tenure and structure-type are defined as Type I deficits, with deviation from the norms in either direction being undesirable. For example, if households desired to be renters but were actually owners, they had tenure deficits. Space is based on the number of bedrooms and is considered a Type III deficit where only a shortage of bedrooms is undesirable. The expenditure deficit is based on annual expenditures for housing, which include rent or mortgage payments and the cost of utilities, insurance, and taxes. The norm was measured by the percent of income that the household thought it should be spending on housing. Five percent was added to the norm to allow for a small range of permitted deviation. The percentage was then converted to dollars based on the reported income. Households spending more than their desired percentage were said to have expenditure deficits. The expenditure deficit is a Type II deficit in that paying too much for housing is undesirable. The deficits were totalled to yield an index of the total number of deficits for each household. Fifty-five percent of the households had no deficits; 27 percent had one; 10 percent had two; 7 percent had three, and only 1 percent had all four deficits.

Three deficits--ownership, single-family structure and number of bedrooms-- were calculated in the regional data set. Only negative deficits were calculated, so all three deficits were Type III. The deficits were calculated from cultural norms and were totalled to yield an index of the total number of deficits for each household. Sixty-one percent of the households had no deficits; 27 percent had one; 10 percent had two, and only 2 percent had all three deficits.

Neighborhood quality

One additional endogenous variable on neighborhood quality was included with the housing deficits in the city data set. Fifteen neighborhoods had been delineated, and the condition of every dwelling in the area was assessed by field surveys (Harland Bartholomew and Associates, 1970). A neighborhood quality index was computed for each neighborhood based on the averages of assigned quality points. Each household was assigned the index average for the neighborhood within which its dwelling was located in 1975.

Satisfaction

The next stage of the model contains the satisfaction variables. To clarify the influence of residential satisfaction on mobility, the concept has been divided into housing satisfaction and neighborhood satisfaction. Although previous research (Morris et al., 1976) has shown neighborhood satisfaction to be positively related to housing satisfaction, each variable also had independent effects on the propensity to move. It is conceivable that one can be satisfied with the dwelling but not with the neighborhood and vice versa. Housing satisfaction and neighborhood satisfaction are operationalized to in-

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clude satisfaction with several characteristics of the dwelling or surroundings. Each data set has different items in the scales (see Table 1).

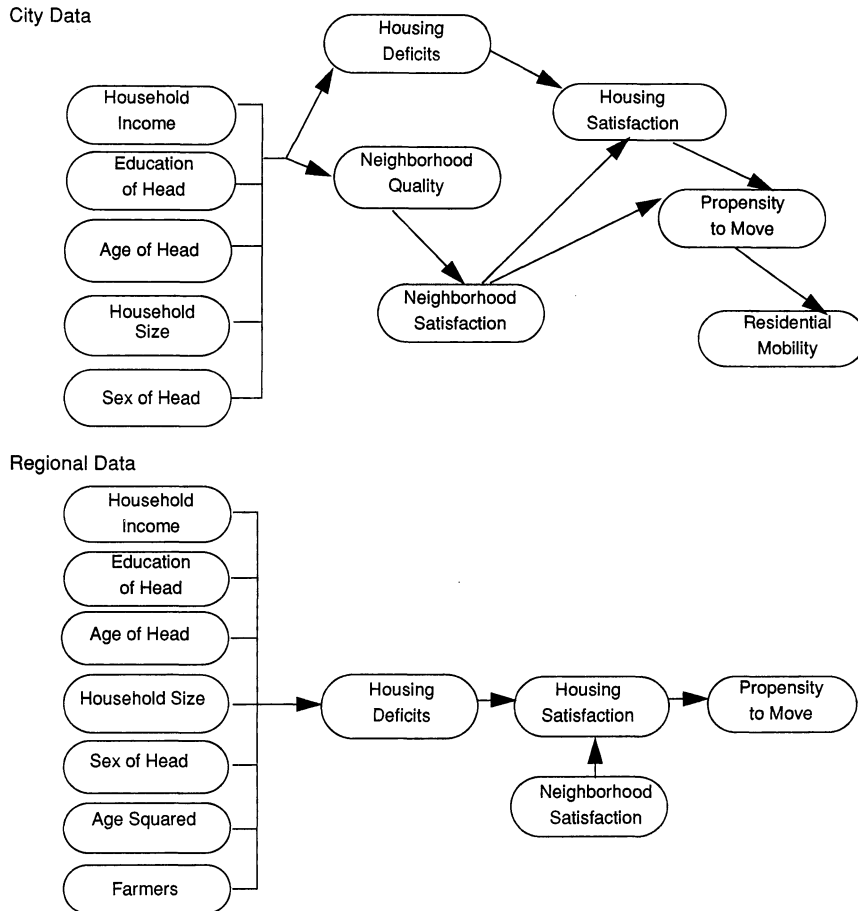


Figure 2. Empirical models.

Propensity to move

Generally, studies of residential mobility have analyzed either propensity to move or actual mobility. Propensity to move is a cumulative concept, an index of motivation defined as desires, expectations, or plans to move to another dwelling. The city and regional data sets include the propensity to move, which is considered a prerequisite for voluntary mobility. Both data sets operationalized the propensity concept with three questions:

1. Have you thought about moving?
2. Do you desire to move in the next year?
3. Do you expect to move in the next year?

The regional data included the responses to an additional question:

4. Do you have definite plans to move within the next year?

The propensity to move index was constructed from the questions, each with dichotomous responses, which were totalled to form a Guttman scale.

Residential mobility

Residential mobility is conceptualized as actual mobility within a local area. Residential mobility was included in only the city data and was operationalized by verification of the 1978 residence of the household and comparing that location with the household's 1975 location. Households living in the same dwelling were classified as nonmovers, while households in different dwellings within the local area were classified as movers. Households that had moved outside of the local area (migration) were dropped from the study. Residential mobility is a dichotomous variable in which movers are coded 1, and nonmovers are coded 0. Thirty-one percent of the households had moved during the three-year period. The use of a dichotomous dependent variable in regression analysis is viewed sometimes as not an entirely satisfactory procedure because ordinary least squares estimators can no longer be considered unbiased. However, Speare (1971) and Morris (1977) found the procedure satisfactory. Hanna and Lindamood (1985) found that ordinary least-squares regression gives satisfactory results for exploratory hypothesis testing with dichotomous dependent variables.

Discussion

The findings from the ordinary least squares regression are generally supportive of the theoretical model in Figure 1. Results of the first regressions are shown in Table 2.

Deficits

The regression of the housing deficits scale on the household characteristics yielded a percentage of explained variance of 9 percent for the city data. The regional data, which additionally contained the exogenous variables age-squared and farm households, yielded an explained variance of 12 percent. The significant coefficients common to both samples were age and sex of the head of the household. In the regional data set, both age and age-squared had significant coefficients which indicates that the number of housing deficits is curvilinear with age. The curve indicates that household heads 67 years old have fewer deficits than either younger or older household heads. Single female-headed households have more deficits than households headed by couples or single males. Income is a significant determinant of the number of deficits in the city data, and education is a significant determinant in the regional data. Households with high income and high levels of education have a low number of housing deficits. These two variables may be measuring the same concept, i.e., the household's ability to attain normative housing.

Satisfaction

The results of the regression of housing satisfaction shown in Table 3 indicate that the housing deficit scale in each data set is one of the major determinants of housing satisfaction. Households with more deficits are less satisfied than households with fewer deficits. Additional analyses presented in Eichner (1986) and Crull (1979) indicate that the deficits scale intervenes between the household characteristics and satisfaction. Neighborhood satisfaction and household size are also significant determinants of satisfaction in each data set. Large households have lower satisfaction than do smaller households which may be the result of a market constraint, the limited supply of dwellings suitable for large families. Education, age of the head, and neighborhood quality are also significant in the city data. In the regional data, farm households are found to have lower housing satisfaction than nonfarm households, and income has a positive effect on satisfaction. Thirty-five percent of the variance in housing satisfaction is explained by the model in the city data, and 25 percent is explained in the regional data.

Table 2. Regression analysis of housing deficits scale.

Independent Variables	City Data			Regional Data		
	b	Beta	t	b	Beta	t
Age of Head	-.0124	-.238	4.04*	-.0111	-.31	-5.46*
Age Squared				.0004	.21	4.44*
Education of Head	-.0222	-.068	1.20	-.0263	-.12	-2.33*
Sex of Head	-.3664	-.171	3.02*	-.2266	-.13	-2.56*
Household Size	-.0056	-.012	.17	-.0208	-.05	-0.82
Household Income	-.0000	-.127	2.28*	.0000	.00	0.09
Farmers				-.0359	-.02	-0.44
Constant	1.9936			.7525		
R ²		.09			.12	
Adj. R ²		.07			.11	
F		6.410			8.95	
d.f.		5/335			7/441	

* Significant at .05 level.

Propensity to move

The regression of propensity to move on satisfaction, deficits, and the exogenous variables is shown in Table 4. In each data set, housing satisfaction is the strongest determinant of propensity to move. Propensity is negatively related to satisfaction, meaning that dissatisfied households have a higher propensity to move than satisfied households.

The change in R-square in hierarchical regressions (Crull, 1979; Eichner, 1986) indicates that housing satisfaction plays an intervening role between propensity to move and most of the other variables. Age of the household head has a direct negative effect on propensity to move in each data set. In the regional data, the positive relationship between age squared and propensity to move is interpreted as a curvilinear relationship between age and propensity. Household heads age 62 have a slightly lower propensity to move than younger and older household heads. This may be the result of the household's planning to move at retirement to smaller or less expensive housing. Also in the regional data, the farm household variable has a significant negative effect on the propensity to move. A test of the interaction of farm households with satisfaction indicates that farm households' propensity to move neither increases nor decreases with satisfaction and that their propensity to move is likely to be based on other factors such as the economics of farming or location of the land (Eichner, 1986, p. 50).

Household income, household size, and neighborhood satisfaction have direct effects on the propensity to move in the city data set. Low income seems to be a resource constraint in the propensity process, and large families may be experiencing a market constraint. Although neighborhood satisfaction is significant in Table 4, an errors-in-variables solution to an abbreviated model analyzed by Crull (1979, p. 59) indicates that the effect of neighborhood satisfaction drops out as a significant variable when corrected for measurement error. It seems that neighborhood satisfaction does not directly affect propensity to move, but it affects propensity indirectly through housing satisfaction. In the

city data, 27 percent of the variance in propensity to move is explained by the variables in the model, and 17 percent is explained in the regional data.

Table 3. Regression analysis of housing satisfaction.

Independent Variables	City Data			Regional Data		
	b	Beta	t	b	Beta	t
Age of Head	.1905	.263	5.09*	.0239	.074	1.36
Age Squared				.0009	.046	1.03
Education of Head	.7977	.177	3.43*	-.1105	-.057	-1.18
Sex of Head	1.7760	.060	1.20	-.7066	-.046	-.96
Household Size	-.9463	-.131	-2.64*	-.9513	-.235	-4.51*
Household Income	-.0001	.088	1.84	.0001	.221	4.52*
Farmers				-2.2106	-.137	-3.25*
Deficit Scale	-3.9738	-.286	-6.09*	-1.6965	-.191	-4.30*
Neighborhood Quality	.0971	.127	2.50*			
Neighborhood Satisfaction	1.3187	.194	4.17*	.5399	.272	6.45*
Constant	-17.9024			20.8375		
R ²		.35			.25	
Adj. R ²		.33			.23	
F		22.270			15.91	
d.f.		8/332			9/439	

* Significant at .05 level.

Residential mobility

Crull (1979, pp. 49-56) also analyzed actual residential mobility as a dependent variable. The hypothesized intervening role of propensity to move is strongly supported in the ordinary least squares regression shown in Table 5. In the fully recursive analysis of residential mobility, 32 percent of the variance in residential mobility is explained by significant paths from propensity to move, housing deficits, age of household head, and household size. The latter two variables again seem to play a significant role as constraints in the residential mobility process. Crull analyzed the model with hierarchical regression and concluded that propensity to move only partially intervenes between housing deficits and residential mobility, which is probably due to measurement error in the propensity variable and incomplete specification of the deficit scale.

Conclusions

The findings of this paper support a model that incorporates housing satisfaction and housing factors as well as household characteristics as determinants of residential mobility. The findings offer considerable support for the use of a normative approach in the study of residential mobility. Although the magnitude of the effects of some variables

on other variables are different in the two data sets, the concepts and hypothesized relationships specified by the housing adjustment framework are supported by both analyses. Given that the two sets of data were collected nearly 10 years apart and that one population is rural and the other urban, it can be concluded that, given the similarity in the results, the model is well supported.

Housing satisfaction is an important intervening variable between housing deficits (gaps between actual conditions and the conditions prescribed by norms) and propensity to move. The findings show little support for neighborhood satisfaction as a direct determinant of propensity to move. Neighborhood and housing satisfaction are indicated as two distinct concepts given that their effects differ. Housing deficits are strong determinants of housing satisfaction. Households with more normative deficits have lower levels of satisfaction than households with housing that meets their norms.

Table 4. Regression analysis of propensity to move.

Independent Variables	City Data			Regional Data		
	b	Beta	t	b	Beta	t
Age of Head	-.0125	.222	-3.92*	-.0080	-.177	-3.10*
Age Squared				.0004	.164	3.55*
Education of Head	.0191	.054	.98	-.0082	-.030	.59
Sex of Head	.0930	.040	.76	.0746	.034	.68
Household Size	-.0780	-.139	-2.62*	.0385	.066	1.18
Household Income	.0000	.147	2.90*	.0000	.016	.31
Farmers				-.2888	-.127	-2.84*
Deficit Scale	.0996	.092	1.76	.0926	.074	1.56
Neighborhood Quality	.0050	.083	1.54			
Neighborhood Satisfaction	-.0570	-.108	-2.14*	-.0096	-.034	-.743*
Housing Satisfaction	-.0271	-.350	6.03*	-.0287	-.204	-4.07*
Constant	1.9406			1.4657		
R ²		.27			.17	
Adj. R ²		.25			.15	
F		13.91			8.96	
d.f.		9/331			10/438	

* Significant at .05 level.

Table 5. Regression analysis of residential mobility.

City Data			
Independent Variables	b	Beta	t
Age of Head	-.7415	-.291	-5.18*
Education of Head	.2049	.013	0.24
Sex of Head	.8187	.078	1.53
Household Size	-.7047	-.277	-5.34*
Household Income	-.5578	-.015	-0.30
Deficit Scale	.9512	.195	3.82*
Neighborhood Quality	.3774	.014	0.26
Neighborhood Satisfaction	-.9622	-.040	-0.82
Housing Satisfaction	-.1684	-.048	-0.81
Propensity to Move	.1131	.250	4.69*
Constant	.7760		
R ²		.32	
Adj. R ²		.30	
F		15.620	
d.f.		10/330	

* Significant at .05 level.

The small percentage of explained variance in housing deficits indicates that important variables have been omitted from the model and that the deficit measures need to be improved. In both data sets, relatively few households have housing deficits, as measured by the deficit variables that were scaled in these analyses. As researchers identify more housing norms, the role of housing deficits in the model may be better understood. It is also clear from the findings that the household characteristics are more than determinants of the deficits. Some of the characteristics, especially the age of the household head, have direct effects on almost all of the endogenous variables. Therefore, these findings are supportive of the idea that constraints may affect the adjustment process at various points and may ultimately impinge upon the household's ability to engage in residential mobility. More theoretical development and empirical testing is needed to adequately conceptualize and operationalize the constraints and to clarify the relationships of the constraints as factors in the housing adjustment process.

Overall, the findings generated from the empirical analyses of the two data sets indicate that both household characteristics and housing factors are essential for predicting and explaining residential mobility. These findings should provide the impetus for future theoretical and empirical research on residential mobility as a microsociological housing adjustment process.

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