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TENURE-STRUCTURE DEFICIT, HOUSING SATISFACTION AND THE PROPENSITY TO MOVE: A REPLICATION OF THE HOUSING-ADJUSTMENT MODEL

Earl W. Morris and Marianna Jakubczak

ABSTRACT

This paper is an analysis of normative deficits in home ownership and type of structure. Deficits based on family norms and perceived cultural norms are analyzed. The data were collected by researchers at the University of Nebraska and Iowa State University in 1977 as part of the regional research project, NC-128, "The Influence of Area of Residence on the Quality of Life". The sample for this study includes 485 cases. The analyses include correlations and a three-level multiple-regression procedure. The deficits are added to explore their combined effects on housing satisfaction and the propensity to move. The results show that the effects of tenure-structure are indirect through housing satisfaction as well as direct to the propensity to move variable. The results of this study show that the constraint variables (household characteristics) are more than just determinants of tenure-structure deficits. They also constrain other points in the adjustment process.

PURPOSE

The purpose of this paper is to test the housing-adjustment model (Morris and Winter, 1975, 1978, 1985) with respect to tenure and type of structure. It is accomplished by analyzing the effects of housing deficits on housing satisfaction and propensity to move. Several important constraint variables are included as controls. The main hypothesis is that normative housing deficits (with respect to tenure and type of structure) produce dissatisfaction with non-normative tenure and structure type. This, in turn, leads to a propensity to move (Morris and Winter, 1978, 1985; Morris, Crull, and Winter, 1976). This paper includes analyses of a combination of tenure and structure deficits based on family norms and perceived cultural norms.

Earl W. Morris is Professor and Marianna Jakubczak is Research Assistant in the Department of Family Environment, College of Family and Consumer Sciences at Iowa State University, Ames, Iowa. This is Journal Paper No. J-12087 of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. This study is part of Project 2706, a contributing project of the North Central Regional Research Project NC-128, "Quality of Life as Influenced by Area of Residence", sponsored by the experiment stations of Arizona, California, Colorado, Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, Nevada, Ohio, and Texas cooperating with the Cooperative State Research Service of the United States Department of Agriculture. This specific project is a result of close cooperation between Iowa State University and the University of Nebraska. Additional funding for this project was provided by a University Research Grant from the Graduate College, Iowa State University. The assistance of Marilyn Eichner in the development of the literature review is gratefully acknowledged.

THE NORMATIVE HOUSING DEFICIT

The concept of the normative deficit provides a culturally meaningful way to analyze the effects of current housing conditions (Morris et al., 1976). A deficit is defined as "a deviation above or below a limit characteristic of a specific organism or social system in the relevant environment" (Morris and Winter, 1978). Operationally, a deficit is based on a subtraction of a number representing a norm from a number representing the current actual state that the norm is used to evaluate:

DEFICIT = CONDITION - NORM

According to the theory, dissatisfaction occurs because there is a normative housing deficit (see Figure 1). Dissatisfaction may result in a propensity to move (Morris and Winter, 1978). Normative housing deficits play a role as intervening variables between characteristics of the household (representing the constraints) and housing satisfaction. They have a relationship to propensity to move directly through their effect on satisfaction. That some families with deficits do not become dissatisfied and some dissatisfied families do not develop a propensity to move is related to the presence of constraining factors that prevent the development of the otherwise appropriate psychological states.

Tenure deficit is based on whether the family has the housing tenure that it needs, given its norms and its perception of the cultural norms for tenure. Structure deficit is based on a comparison between the needed (according to the family's norms and its perception of the cultural norms for structure type) and the actual structure type. For tenure and structure, there are two norms and, therefore, two deficits. As a result, there are four deficits in all: 1) family tenure deficit, 2) cultural tenure deficit, 3) family structure deficit, and 4) cultural structure deficit.

A basic assumption of this research is that there is a set of cultural norms that prescribes home ownership and single-family structures. However, it is not assumed that households necessarily perceive those norms correctly. Therefore, the cultural deficits are based on the households' reported perception of what the norms are (Morris, Winter, and Sward, 1984). Obviously, the family's norms may or may not coincide with the perceived cultural norms. For family norms, it is assumed that the family knows and is able to report what its norms are.

Interpretations of the concept and the operational definition of the tenure deficit index requires some care. Positive values indicate that the family's housing exceeds its norms (for example, having a single-family dwelling when the norms reported do not favor single-family housing). Negative values indicate that the family's housing does not meet the norms it reports (renting when the reported norms favor ownership). Zero values of the index indicate that the family has housing that meets its norms as reported.

Early analysis of housing satisfaction concentrated on satisfaction as a consequence of the characteristics of the family or the dwelling (Caplow, 1948). Later, however, it was shown that normative housing deficits explain much of the relationship between (1) housing and household characteristics and (2) housing satisfaction (Morris et al., 1976; Crull, 1979). Therefore, a deficit measure used

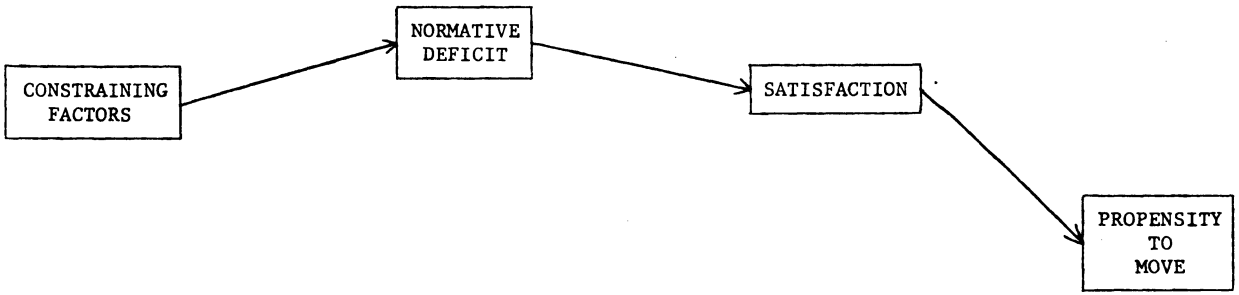

Figure 1. Theoretical model of housing adjustment

as an intervening variable is important in the analysis of satisfaction and propensity to move.

HOUSING SATISFACTION

According to Speare (1974), dissatisfaction results from a change in the needs of the household, a change in the social and physical characteristics of the particular location or a change in the standards used to evaluate those factors. There are three stages in the development of satisfaction. The first stage is a comparison of current housing with norms to discover whether a deficit exists. The second stage is an assessment of constraints. The third stage is development of preferences for possible improvement of housing (Morris and Winter, 1978).

Speare (1974) includes residential satisfaction as an intervening variable in a causal model predicting propensity to move and actual mobility. His study is based on six items of housing and neighborhood satisfaction: size of house, yard, age of house, immediate neighborhood, community, and distance from work, school and shopping.

Except for using crowding and tenure status as exogenous variables, Speare (1974) does not use a measure of housing deficits. Morris et al. (1976) use positive and negative deficits. A positive deficit occurs when one's housing exceeds the norms. A negative deficit occurs when one's housing is inferior to that prescribed by the norms. Although that analysis is a sound one, the present analysis is considerable more parsimonious.

Using data that included a follow-up to obtain information on actual mobility, Crull (1979) tested the housing-adjustment model. She includes four deficit measures in an index: bedrooms, expenditure, tenure, and structure type.

Morris et al. (1976) and Crull (1979) show that the hypothesized direct effects are strong. The direct effects are: 1) from deficits to satisfaction, 2) from satisfaction to propensity to move, and 3) from propensity to move to actual mobility. Although the implied indirect effects are not explicitly tested, inspection of the analyses suggest they may have been rather weak. The indirect effects include: 1) from deficits to propensity to move through satisfaction, 2) from deficits to mobility through satisfaction and propensity, and 3) from satisfaction to mobility through propensity. None of the hypotheses about actual mobility can be tested in this paper.

The use of constraints as a concept in the study of residential mobility had been infrequent until Morris and Winter (1978). Speare, Goldstein, and Frey (1974) refer in their theory to the "expected cost of moving", but do not operationalize it for analysis. The conscious use of the social, economic, and demographic variables as constraining factors began around 1978.

During the last decade, many researchers discussed the concept of constraints in relation to mobility. Landale and Guest (1985) suggest several mobility constraints: lack of resources, commitment to immediate locale, and inertia. Smith and Clark (1980) investigate the role of constraints in the search for new housing. Their hypothesized constraints are lack of resources for obtaining information, individual decision-making ability and information processing, and restrictions on the flow of information to some groups. Other hypothesized constraints to mobility are housing-market institutions (Onaka, 1983), inertia among long-term dwellers (Clark and Onaka, 1985), household economic constraints (Kendig, 1984), dual-career families (Hughes, 1980, and inflation, high interest rates, and built-up

home equity (Hughes, 1980). However, few studies have actually tested the effect of constraints on mobility potential.

PROPENSITY TO MOVE

Propensity to move refers to desires, plans, inclinations or expectations about future mobility. The level of dissatisfaction rises (presumably as a result of changing needs) until it produces a desire to move. Then the desire is modified by perceived constraints and reasonable expectations of mobility are developed (Morris et al., 1976; Rossi, 1955; Van Arsdol, Sabagh, and Butler, 1968). The relationship between propensity to move and actual mobility is quite strong. The literature shows that about one-third of families desiring to move and two-fifths to two-thirds of families planning to move actually do move within a year (Crull, 1979; Duncan and Newman, 1975; Landale and Guest, 1985; Onaka, 1983; Rossi, 1955; Speare, 1974; Van Arsdol et al., 1968).

Studies of the role of housing dissatisfaction as the immediate stress producing a propensity to engage in housing adjustment have produced conflicting results. Butler et al. (1969), Crull (1979), Lam (1985), Landale and Guest (1985), Morris (1977), Morris et al. (1976), Rossi (1955), Speare (1974), and Varady (1980) show that low housing satisfaction is related to the propensity to move. However, Michelson (1980), Newman and Duncan (1979) and Varady (1983) find only weak support for the relationship. Some evidence suggests that families that have many constraints on their housing behavior are less likely to experience dissatisfaction than are families who do not have such constraints (Fairchild and Tucker, 1982; Fried, 1982; Golant, 1982; Yockey, 1976). Thus, the study of the relationships among norms, housing characteristics and satisfaction bears additional examination and replication with additional samples (see Winter and Morris, 1982, for an example of the kind of analysis that is needed).

HYPOTHESES

1. The constraint variables in combination have a significant direct effect on tenure-structure deficits.

2. The tenure-structure deficits have a significant positive direct effect on housing satisfaction.

3. The constraint variables have indirect effects on satisfaction through the deficit variable.

4. The tenure-structure deficits have no significant direct effect on the propensity to move.

5. Housing satisfaction has a significant negative, direct effect on the propensity to move when the constraint variables and tenure-structure deficits are controlled.

6. The deficits have an indirect effect on propensity to move through satisfaction.

The data for this study were collected by researchers at the University of Nebraska and Iowa State University in 1977 as part of the regional research project, NC-128, "The Influence of Area of Residence on Quality of Life". The population consisted of small communities in Iowa and Nebraska and in the Council Bluffs-Omaha SMSA (Standard Metropolitan Statistical Area). The small communities are within the range of influence of the Omaha-Council Bluffs area,

but are more than 50 miles from it and are not under the influence of any other SMSA. The sample included 485 cases.

THE VARIABLES

Five demographic and socio-economic variables were selected as indexes of the constraints. They have been shown to be related to family norms (Morris and Winter, 1976), to satisfaction (Morris, 1977; Morris and Winter, 1978; Speare, 1974) and to the propensity to move (Morris et al., 1976). The five variables are: 1) sex of the household head, 2) education of the household head, 3) age of the household head, 4) household size, and 5) total household income.

Sex of the household head is a dichotomous variable in which male-headed or couple-headed households are coded 1 and female-headed households are coded 0. In this sample, more than three-fourths of the households (76.5 percent) are headed by male or a couple. Almost one-fourth (23.5 percent) of the households in the sample are headed by a female.

Education of the household head is the number of years of formal schooling completed by the male in couple-headed households or by the female in female-headed households. Twenty-seven percent of the sample has less than 12 years of education, 35 percent of the respondents have 12 years of education, and 38 percent of the sample have more than 12 years of education. The mean value of education is 12.34.

Age is the age of the males in the couple-headed households or the age of the head in female-headed households. Twenty-eight percent of the sample is under age 35. Twenty-four percent of the respondents are aged 35-49, 24 percent are in the aged 50-64 category, and another 24 percent are aged 65-and-over. The mean age is 48.7 years.

Household size is the number of household members residing in the dwelling on April 1, 1977. One-and two-person households constitute 50 percent of the sample. Three-person households make up 19 percent of the sample, while four and more-person households comprise 31 percent of the sample. The mean value of household size is 2.9.

Total household income is the dollar amount of income received by all household members during the previous tax year (before taxes) from all sources. Thirty-one percent of the sample have incomes below $9000 and 38 percent have incomes about $17,000. (The data were obtained for 1976, which explains the low figures).

The propensity to move is conceptualized as a series of stages, with households expecting to move being more likely to move than are households just thinking about moving. The scale is constructed from two questions about 1) definite plans to move within the next twelve months and 2) desire to move from the residence during the next twelve months, with dichotomous responses. The response "yes" received "1" and the response "no" received 0. In the scale based on the sum of the two items, 9.3 percent of the sample have a score of 2 and 12.8 percent of the sample have a score of 1. Almost 78 percent of the sample have a score of 0.

Housing satisfaction consists of two satisfaction items: 1) satisfaction with type of structure and 2) satisfaction with tenure. Because the correlation between the two items was high, they were summed to form a single variable. Each item is scaled on a seven-point scale from 1 (extremely dissatisfied) to 7

(extremely satisfied). The mean value of satisfaction is 11.9.

Actual tenure and structure type. Home ownership is coded 1 for owners (73.4 percent) and 0 for renters. Households living in a single-family dwelling are coded 1 (80.8 percent). All other structure types, including mobile homes, are coded 0.

Tenure and structure norms. The home ownership norms are based on two questions asking about the "best ownership or rental arrangement for the average American family" (94.2 percent own), and "best ownership or rental arrangement for you and your family" (81.2 percent own). The responses, "own" is coded 1 and "rent" is coded 0. A similar coding is used for structure type, calculated separately for the "average American family" and "you and your family". Single-family responses are coded 1 with responses for all other types of structure coded 0. Households indicating that a single-family dwelling is the "best housing for the average American family right now" comprise 96.1 percent of the sample. Those indicating single-family dwelling as the "best kind of housing for you and your family right now" make up 84.1 percent of the sample.

Tenure-structure deficits are defined theoretically as a difference between actual conditions and conditions prescribed by reported cultural and family norms. The total deficit is calculated by subtracting the cultural and family norms from the actual conditions and summing the results for the four norms.

$$\text{TOTAL DEFICIT} = \Sigma \text{COND}_j - \text{NORM}_i$$

where ΣCOND_j represents two current housing conditions: 1) tenure (own/rent) and 2) the type of structure (single/non-single) of the current dwelling.

NORM_i represents a set of four norms: 1) the family's tenure norm, 2) the family's perception of the cultural tenure norm, 3) the family's structure norm, and 4) the family's perception of the cultural structure norm.

To construct the index, the family's tenure norm (1) is subtracted from the tenure condition, the reported cultural norm (2) is subtracted from the tenure condition, the family's structure norm is subtracted from the structure condition, and the reported cultural structure norm (4) is subtracted from the structure condition. Because the condition variables appear twice, these are not completely independent factors.

For each of the four deficits there are four possibilities:

COND	NORM	RESULT
0	1	-1
0	0	0
1	1	0
1	0	1

For example, if a household has family norms favoring home ownership and is actually renting, it would have a family tenure deficit of -1. If a household desired to rent, but actually owns their dwelling, it would have a family tenure

deficit of 1. Structure deficits compare norms and actual conditions in terms of single-family dwellings and other structure types. This procedure is repeated for cultural norms. The results are summed to produce an index that could range from −4 to 4. The actual deficit index is distributed: −4 (3.1 percent), −3 (2.3 percent), −2 (14.3 percent), −1 (17.4 percent), 0.00 (65.8 percent), 1 (4.1 percent), and 2 (2.5 percent). A score of −4 means that the household rents a non-single-family dwelling unit, but reports all four norms to favor ownership and single-family dwelling. The mean of the total deficit variable is −0.47.

THE ANALYSIS

Table 1 presents the correlation matrix for all variables in the analysis. All pairs of the constraint variables have significant correlations, but the correlations are not high enough for concern about multicollinearity.

Table 1. Pearson Product Moment Correlation Matrix

	1	2	3	4	5	6	7	8
1	1.00							
2	0.38***	1.00						
3	0.39***	0.27***	1.00					
4	-0.22***	-0.34***	-0.42***	1.00				
5	0.49***	0.12**	0.38**	-0.20***	1.00			
6	0.29***	0.03	0.15***	0.21***	0.18***	1.00		
7	0.22***	-0.04	0.13**	0.19***	0.10*	0.46***	1.00	
8	-0.15**	0.02	0.01	-0.24***	-0.01	-0.35***	-0.38***	1.00

***p < 0.001
**p < 0.01
*p < 0.05
NOTE: 1 = Total household income, 2 = Education of the household head, 3 = Household size, 4 = Age of the household head, 5 = Sex of the household head, 6 = Tenure-structure deficits, 7 = Housing satisfaction, 8 = Propensity to move.

The three endogenous variables have the expected correlations with each other. The correlation of satisfaction with the deficits variable is positive. The correlation of propensity to move with deficits is negative. The correlation of propensity to move with satisfaction is also negative.

All three endogenous variables have the expected correlations with income as they do with age. The only other significant correlations are between deficits and household size (positive) and between satisfaction and household size (also positive). It is noticeable that education has no significant correlation with any

other constraint variable.

The regressions include analyses of three dependent variables. The first has tenure-structure deficits as the dependent variable and includes the five constraint variables: 1) sex of the household head, 2) education of the household head, 3) age of the household head, 4) household size, and 5) household income. The second analysis regresses housing satisfaction on tenure-satisfaction deficits and the constraint variables. The third has the propensity to move as the dependent variable on housing satisfaction, tenure-structure deficits, and the constraint variables.

Deficit regression. The single step in the tenure-structure deficit regression (Table 2) includes the set of constraint variables (sex of the household head, education of the household head, age of the household head, household size, and household income). The overall analysis is significant with an R^2 of 0.19, and adjusted R^2 of 0.18 and an F-ratio of 22.41. Therefore, hypothesis 1 is *not* rejected, indicating that the constraint variables in combination influence tenure-structure deficits. Three of the constraint variables have significant effects at $p < 0.05$ on the occurrence of tenure-structure deficits. Older people, households with higher income, and larger households are more likely to have positive deficits than are the younger, lower income and smaller households.

Table 2. Regression of tenure-structure deficits on constraint variables

	Step 1	
Variable	beta	T-ratio
Sex of the household head	0.046	0.935
Education of the household head	-0.019	-0.401
Age of the household head	0.346	7.362**
Household size	0.171	3.461*
Household income	0.288	5.541**
Constant	-2.882	
R^2	0.190	
Adj. R^2	0.181	
df	5/479	
F-ratio	22.413***	

*p < 0.05
**p < 0.01

Satisfaction regression. In the analysis of housing satisfaction (see Table 3), there are two hierarchical steps. First, the constraint variables are entered and then the tenure-structure deficit variable is entered. In the first step, age of the household head, household income and household size have significant effects on housing satisfaction. The R^2 of 0.14 (adjusted 0.13) is significant with an F-ratio

of 15.23.

Table 3. Hierarchial regression of housing satisfaction on the constraint variables and tenure-structure deficits

	Step 1		Step 2	
Variable	beta	T-ratio	beta	T-ratio
Sex of the household head	-0.03	-0.57	-0.05	-0.97
Education of the household head	-0.09	-1.88	-0.08	-1.86
Age of the household head	0.29	5.95**	0.16	3.33**
Household size	0.18	3.49**	0.11	2.36*
Household income	0.27	4.91**	0.16	3.08*
Tenure-structure deficits			0.38	8.55**
Constant	8.74		10.77	
R^2	0.14		0.25	
Adj R^2	1.13		0.24	
df	5/479		6/478	
F-ratio	15.32**		26.86**	

*p < 0.05
**p < 0.01

With tenure-structure deficits added, the same constraint variables continue to be significant (Step 2, Table 3). The R^2 obtained in the second step of 0.25 and adjusted R^2 of 0.24, with an F-ratio of 26.86, are significant. The deficit variable has a significant beta of 0.38. Therefore, the tenure-structure deficits have a strong, positive, direct effect in the expected direction on housing satisfaction with the constraints controlled, which supports hypothesis 2. Households with positive tenure-structure deficits (owner, single-family deficits) are more likely to be satisfied than are families with negative deficits (renter, multi-family deficits). The extent to which the deficit variable intervenes between the constraint variables and housing satisfaction is shown by the reduction of the betas of the constraint variables (age, 0.29 to 0.16; household size, 0.18 to 0.11; income, 0.27 to 0.16) from Step 1 to Step 2.

The role of the constraint variables in the prediction of satisfaction is not clear. Some previous research has shown that households with many constraints have higher satisfaction than would be expected (Yockey, 1976). However, in this analysis, income has a positive effect on satisfaction. Conversely, low income has a positive correlation with dissatisfaction indicating that the income constraint does not support the results of other studies. Sex of the household head and education can also be thought of as constraints and they have no significant effect on satisfaction when entered with the other constraint variables.

Propensity regression. The propensity to move analysis (see Table 4) has three steps. Step 1 shows that only age of the household head and household income have significant direct effects on the propensity to move. The R^2 of 0.10 and adjusted R^2 of 0.09, with an F-ratio of 10.89, are significant.

Table 4. Hierarchical regression of the propensity to move on the constraint variable, tenure-structure deficits and housing satisfaction

	Step 1		Step 2		Step 3	
Variable	beta	T-ratio	beta	T-ratio	beta	T-ratio
Sex of the household head	0.06	1.20	0.08	1.50	0.06	1.31
Education of the household head	0.02	0.32	0.01	0.22	-0.01	-0.23
Age of the household head	-0.29	-5.95**	-0.20	-3.89**	0.16	-3.15**
Household size	-0.06	-1.11	-0.01	-0.18	-0.02	0.39
Household income	-0.22	-4.12**	-0.14	-2.64	-0.10	-1.94*
Tenure-structure deficits			-0.28	-6.13**	-0.19	-3.91**
Housing satisfaction					-0.25	-5.38**
Constant	1.20		0.75		1.56	
R^2	0.10		0.16		0.22	
Adj R^2	0.09		0.16		0.20	
df	5/479		6/478		7/477	
F-ratio	10.89**		16.02**		18.66**	

*p < 0.05
**p < 0.01

With tenure-structure deficits added in Step 2, the same constraint variables continue to be significant. The R^2 and adjusted R^2 of 0.16, with an F-ratio of 16.02, are higher than in Step 1. Therefore, hypothesis 4 is rejected. Tenure-structure deficits had a significant direct effect on propensity to move (negative).

In Step 3, Table 4, housing satisfaction has a strong direct effect in the expected direction on the propensity to move. The beta is −0.25. Dissatisfied households are more likely to want to move to a different dwelling than are satisfied households. The R^2 of 0.22 and adjusted R^2 of 0.20, with an F-ratio of 18.66, are significant. Therefore, hypothesis 5 is *not* rejected.

The effect of tenure-structure deficits (a direct effect) is reduced when satisfaction is introduced (−0.28 to −0.19) indicating that satisfaction intervenes between deficits and the propensity to move (an indirect effect). Continued rejection for hypothesis 4 is implied because tenure-structure deficits do have a direct effect on the propensity to move. The indirect effect of the deficit variable on propensity is strong and is negative as is the direct effect. Hypothesis 6 is, therefore, *not* rejected.

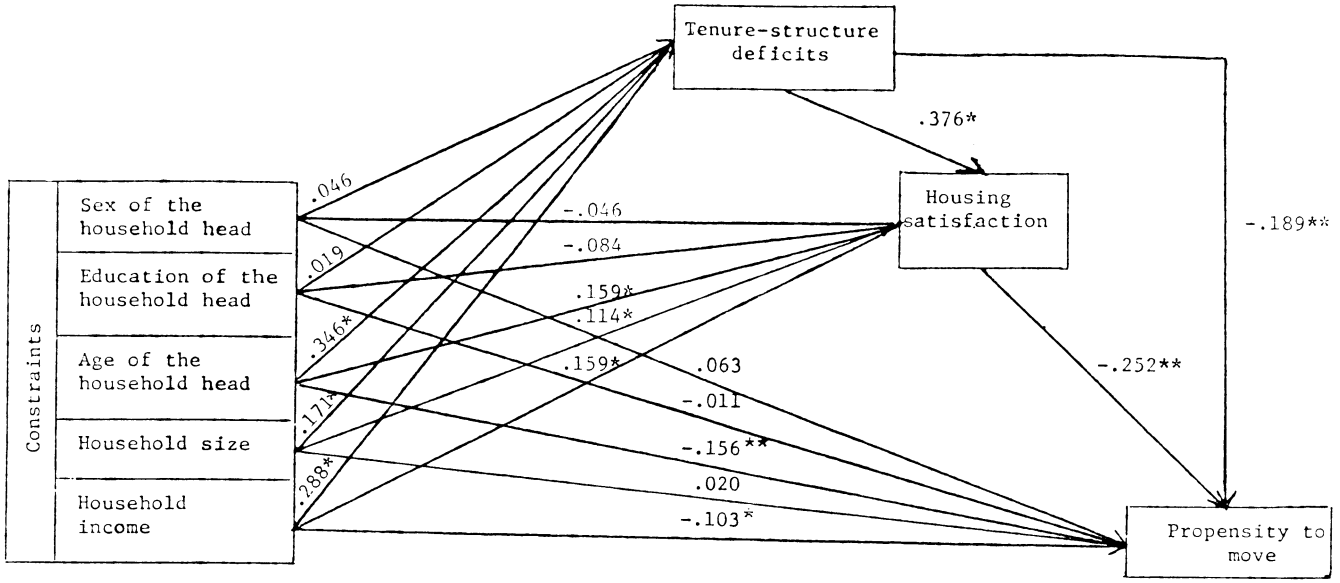

Figure 2. Diagram of tested causal model

*p<0.001

The tenure-structure deficits have a significant relationship with housing satisfaction and the propensity to move. The positive relationship between tenure-structure deficits and housing satisfaction indicates that households having tenure and type of structure that match or exceed their perception of the norms are more satisfied than are other households. The negative relationship between tenure-structure deficits and the propensity to move means that households who have tenure and type of structure that meet or exceed their expectation of the rooms do not want to move. The results of the regression analysis for tenure-structure deficits are shown in Tables 2 through 4 and in Figure 2.

CONCLUSIONS

The analyses provide moderate support for the hypotheses, except for hypothesis 4, because tenure-structure deficits have direct, significant negative effects on propensity to move. There is support for the chain of relationships from tenure-structure deficits to housing satisfaction to the propensity to move. It is of equal importance that the pattern exists when the constraint variables are controlled. Especially important is the presence of an indirect effect or tenure-structure deficits on propensity to move. The effect of tenure-structure deficits on propensity to move occurs, not only through housing satisfaction, but also directly to the propensity to move variable. It is clear from the results of this study that the constraint variables are more than just determinants of tenure-structure deficits. Some of the constraint variables, especially age of the household head, have direct effects on all dependent variables. Therefore, these results are supportive of the idea that constraints may affect the adjustment process engaged in the propensity to move.

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