

DEMAND FOR HOME OWNERSHIP IN REGIONS OF THE UNITED STATES

Young Sook Chung, Frances M. Magrabi, and Joseph L. Wysocki

ABSTRACT

The purpose of this research is to test the relationship of demographic variables to housing tenure (i.e., home owner vs. renter) with 1984 Bureau of Labor Statistics data, taking regional differences into account. The results differ significantly from one region to another, indicating that a single, aggregate-demand function for home ownership in the United States as a whole may be misleading if one is concerned with a particular region.

INTRODUCTION

The purpose of this study is to identify regional differences in the determinants of home ownership in the United States, thus extending knowledge of the factors that influence tenure decisions.

In selecting a home, a consumer has a choice between renting and owning a housing unit. The decision to own or rent--the tenure choice--is influenced by the availability of resources. It may also be influenced by demographic and socio-economic factors associated with the tastes and preferences of the household, such as age, income, occupation, employment status, education, family size, and race.

A number of studies have been conducted on the determinants of home ownership with conflicting results, as can be seen in Tables 1a, 1b, and 1c. Possible reasons for these discrepancies may be: 1) differences in the variables and how they were measured, 2) differences in the model and statistical methods for testing hypotheses, 3) differences in the populations sampled, and 4) changes in these populations over time.

The previous studies are grouped in Tables 1a, 1b, and 1c according to whether the sample was drawn from the entire United States population or from a more restricted geographical area. None of the studies include region as a variable. The following variables are consistently found to be related to home ownership age, income, and household size. Inconsistencies are found with respect to marital status, race, sex, occupation, and education.

Young Sook Chung is a doctoral candidate, School of Human Resources and Family Studies, University of Illinois at Urbana-Champaign. Frances M. Magrabi is Professor of Consumption Economics, and Joseph L. Wysocki is Assistant Professor and Housing Specialist, Division of Family and Consumer Economics, School of Human Resources and Family Studies, University of Illinois at Urbana-Champaign.

Housing and Society, Vol. 16, No. 1, 1989

Table 1a. Results of representative previous studies

| RESEARCHERS | Carliner (1974) | Burgess (1982) | Goodman, Kawai (1984) | Eilbott, Binkowski (1985) | Kain, Quigley (1972) |
|---------------------------|--------------------|--------------------------------------|-------------------------------|---------------------------------|-----------------------------|
| Population sampled: | U.S. population | U.S. population female head | U.S. SMSAs male head | U.S. SMSAs | St. Louis |
| Statistical method: | Regression | Probit | Regression | Multiple regression | Regression |
| Dependent variable | Home ownership | Predicted home owner | Housing demand | Home ownership | Probability of ownership |
| Independent variables: | | | | | |
| Income: | + | | | + | + |
| current | | + | + | | |
| permanent | | 0 | + | | |
| House value | | | | + | |
| Age: | + | + | + | + | + |
| up to 65 | | | | | |
| over 65 | | | | | |
| Household size: | + | + | + | + | + |
| up to 5 | | | | | |
| 5 or more | | | | | |
| Education | | 0 | - | | - |
| Sex: | | | | | |
| male | | | + | | + |
| female | | | - | | - |
| Marital status: | | | | | |
| married | + | + | 0 | + | |
| divorced | | - | 0 | | |
| separated | | | | | |
| widowed | | + | 0 | | |
| unmarried | - | - | 0 | | - |
| Race: | | 0 | 0 | | 0 |
| white | + | | + | | |
| black | - | | - | | |
| Occupation: | | | | | |
| white-collar | | | | | |
| blue-collar | | | | | |

NOTE: + means positively correlated with dependent variable
 - means negatively correlated with dependent variable
 0 means not correlated with dependent variable

Table 1b. Results of representative previous studies

| RESEARCHERS | Pol, Rebecca, et. al. (1981) | Hanna, Lindamood (1979) | Hanna, Lindamood (1985) | Li (1977) | Dillman, Tremblay, et.al. (1979) |
|------------------------|------------------------------|-------------------------|-------------------------|-------------------|----------------------------------|
| Population sampled: | Memphis, TN. | Montgomery, AL. | Montgomery, AL. | Boston, Baltimore | washington |
| Statistical method: | Regression | Regression | Logit Regression | Logit | Chi-square analysis |
| Dependent variable: | Home ownership | Housing condition | Home ownership | Home ownership | Housing preference |
| Independent variables: | | | | | |
| Income | + | + | | - | + |
| Age: | + | + | | + | + |
| up to 65 | | | + | | |
| over 65 | | | - | | |
| Household size: | + | | | | + |
| 1 person | | | | + | |
| up to 5 | | | | | |
| 5 or more | | | | - | |
| Education | + | 0 | | | + |
| Sex: | | | | | 0 |
| male | | + | | | |
| female | | - | | | |
| Marital status: | | | | | + |
| married | + | | | | |
| divorced | | | | | |
| separated | | | | | |
| widowed | | | | | |
| unmarried | - | | | | |
| Race: | | | | | |
| white | + | + | | + | |
| black | - | - | | - | |
| Occupation: | | 0 | | | |
| white collar | | | | | + |
| blue collar | | | | | - |

NOTE: + means positively correlated with dependent variable
 - means negatively correlated with dependent variable
 0 means not correlated with dependent variable

Table 1c. Results of representative previous studies

| RESEARCHERS | Linneman (1985) | Morris, Cho (1986) | Hohm (1983) |
|-------------------------|-----------------------------|-----------------------------------|--------------------------|
| Population sampled: | Chicago/ New York | Iowa | San Diego |
| Statistical method: | Logit | Logit | Multi- classification |
| Dependent variables: | Probability of ownership | Predicted tenure preference | Predicted home owner |
| Independent variables: | | | |
| Income | + | + | + |
| Parents' income | | | + |
| Age | + | + | |
| below 34 | | | - |
| 35-64 | | | + |
| over 65 | | | - |
| Household size | + | + | + |
| 1 person | | | - |
| 2 person | | | + |
| 3-4 persons | | | 0 |
| 5 or more | | | + |
| Education | | | |
| Sex: | | 0 | |
| male | + | 0 | - |
| female | - | - | + |
| Marital status | | | 0 |
| married | | + | |
| divorced | | 0 | |
| separated | | 0 | |
| widowed | | 0 | |
| unmarried | | - | |
| Race: | | | 0 |
| white | + | + | |
| black | - | - | |
| Occupation: | | | |
| white collar | | 0 | |
| blue collar | | + | |
| no occupation | | - | |

Note: + = positively correlated with dependent variable
 - = negatively correlated with dependent variable
 0 = not correlated with dependent variable

METHODS

The data used in this study were taken from the 1984 Consumer Expenditure Survey (U.S. Bureau of Labor Statistics, 1987). The analysis was performed on 4,543 households located in 101 urban areas, including 1,014 households located in the Northeast, 1,157 households in the Midwest, 1,254 households in the South, and 1,118 households in the West. Analysis was also performed on data gathered from 4,543 households in the aggregate of the four regions.

Several previous studies had used probit analysis, logit analysis, and ordinary least-square regression analysis (OLS) to test the relationship between demographic factors and home ownership (Burgess, 1982; Carliner, 1974; Goodman and Kawai, 1984; Hanna and Lindamood, 1985; Kain and Quigley, 1972; Li, 1977; Linneman, 1985; Morris and Cho, 1986). The OLS regression method is based on the assumption that the error term is normally distributed with zero mean and a constant variance (Marsden, 1981). However, when the dependent variable is a categorical dummy variable, the normality assumptions are violated. The error terms are inherently heteroskedastic because the dependent variable is either 1 or 0, but the values of the independent variables vary from observation to observation. The error terms are not normally distributed. Because the dependent variable takes either 0 or 1, the error term is bimodal for small samples and approaches the normal distribution only for large samples (Studenmund and Cassidy, 1987, p. 174). Discriminant analysis is one solution to the analysis of data with dichotomous or categorical dependent variables. It was the method chosen for the present study.

Four regional and aggregate demand functions were calculated using the discriminant model to estimate and test the functions. The Rao method, a step-wise mode in which variables are entered in the order of their explanatory power, was used. Under this method, significant variables are selected and included in the model on the basis of their discriminant power. Insignificant variables do not appear in the final model selection (Klecka, 1975).

The unit of analysis was the household. Discriminant equations were calculated for each of the four regions. They had the form:

$$D_i = b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8$$

where D_i represented the discriminant score for owner vs. renter and b_1, \dots, b_8 were the discriminant coefficients. X_1, \dots, X_8 were the standardized values of the discriminating variables: total amount of household income before taxes (X_1), age (X_2), household size (X_3), educational level (X_4), sex (X_5), marital status (X_6), race (X_7), and occupation (X_8). The dependent variable, home ownership, was represented by a dummy variable (owner=1). Race was divided into two groups: white and black (white=1). Occupation of household head was divided into three groups: white-collar workers and blue-collar workers were represented by two dummy variables, and "not working" was the reference group. Marital status of household head was divided into five groups: married, widowed, divorced, separated, and never married. Married was assigned to the reference group.

A discriminant function was also calculated for the aggregate of the four regions. In addition to the above variables, dummy variables were used to represent the Census regions: Midwest, Northeast, and South, with the West as the reference region.

RESULTS AND DISCUSSION

Household Characteristics

Detailed tabulations (see Tables 2-6) show that the rate of home ownership varies among regions. It is the highest in the Midwest (64.8%) and the lowest in the West (51.6%). There is a substantially higher percentage of owners than renters in the Northeast (62.8%), Midwest (64.8%), and the South (58.1%). In the West, only a slightly higher proportion of households are home owners (51.6%) rather than renters (48.4%).

Compared with renters, home owners have a higher mean income, mean household size and mean age. Heads-of-households who are home owners are more likely to be white and male in each of the four regions and the aggregate of the four regions. The mean income of home owners is nearly double that of renters for all regions except for the Northeast. Household size averages about three persons per household for owners compared with an average of about two individuals per household for renters. Mean age of home owners is consistently higher by more than 10 years than the mean age of renters. Marital status, education and occupation of home owners vary by region.

Married household heads have a higher percentage of home ownership than do widowed, divorced, separated, and never married household heads in the Northeast, Midwest, South, and the aggregate of the four regions. In the West, widowed household heads have about the same percentage of home ownership as married household heads (68.3% vs. 67.9%).

In the Northeast, Midwest, and the South, and in the aggregate of the four regions, home ownership is more likely than renting for households in which the household head has completed at least nine years of schooling. In all regions, the rate of home ownership is the highest for households in which the head has attended college. In the Northeast and the Midwest, households with a blue-collar household head have a higher percentage of home ownership (66.1% and 65.8% respectively) than either the white-collar households (61.9% and 63.8%) or households in which the household head is not working (60.7% and 62.5%). The not-working group has a higher percentage of home ownership than either the white-collar households or blue-collar households in the South (62.3%) and the West (58.2%), and in the aggregate of the four regions (63.5%). In all regions except the West, owners outnumber renters in each of the three occupational categories.

Results of the Discriminant Analysis

The discriminant functions for each region and for the aggregate of the four regions (see Table 7) are similar with respect to their rate of success in classifying households (the hit ratio). In each case, approximately three-fourths of the households are correctly classified by the function. Chi-squares for functions as a whole are similar.

In the Northeast, home ownership is influenced by the following (in order of their magnitude of standardized discriminant function coefficient): 1) age of household head, 2) never-married household head, 3) education of household head, 4) household size, 5) household income, 6) divorced and widowed household head, 7) race of household head, and 8) blue-collar household head.

Table 2. Characteristics of Owners and Renters in the Northeast

| VARIABLES | OWNERS | RENTERS | ALL HOUSEHOLDS |
|---|--------|---------|----------------|
| Number of households | 637 | 377 | 1,014 |
| Percent of households | 62.8 | 37.2 | 100.0 |
| Mean income before taxes(\$) | 14,514 | 12,123 | 19,908 |
| Mean household size (number of persons) | 2.9 | 2.1 | 2.6 |
| Mean age of household head (years) | 52.6 | 41.2 | 48.3 |
| Race of household head (percent of households) | | | |
| white | 71.6 | 28.4 | 93.4 |
| black | 28.4 | 71.6 | 6.6 |
| Marital status of household head (percent of households) | | | |
| married | 79.1 | 20.9 | 59.0 |
| widowed | 60.2 | 39.8 | 13.0 |
| divorced | 48.1 | 51.9 | 7.9 |
| separated | 33.3 | 66.7 | 3.2 |
| never married | 18.5 | 81.5 | 16.9 |
| Educational level of household head (percent of households) | | | |
| completed 0-8 years | 41.7 | 58.4 | 11.4 |
| completed 9-12 years | 58.2 | 43.0 | 67.1 |
| completed 13-over | 74.0 | 26.0 | 21.5 |
| Occupation of household head (percent of households) | | | |
| white collar | 61.9 | 38.1 | 44.3 |
| blue collar | 66.1 | 33.1 | 23.1 |
| not working | 60.7 | 39.3 | 32.6 |
| Sex of household head (percent of households) | | | |
| male | 71.4 | 28.6 | 66.5 |
| female | 44.9 | 55.1 | 33.5 |

Housing and Society, Vol. 16, No. 1, 1989

Table 3. Characteristics of owners and renters in the Midwest

| VARIABLES | OWNERS | RENTERS | ALL HOUSEHOLDS |
|--|--------|---------|----------------|
| Number of households | 750 | 407 | 1,157 |
| Percent of households | 64.8 | 35.2 | 100.0 |
| Mean income before taxes (\$) | 22,965 | 12,694 | 19,352 |
| Mean household size (number of persons) | 2.8 | 2.0 | 2.6 |
| Mean age of household head (years) | 50.6 | 33.6 | 46.6 |
| Race of household head (percent of households): | | | |
| white | 67.3 | 32.7 | 90.3 |
| black | 42.0 | 58.0 | 9.7 |
| Marital status of household head (percent of households): | | | |
| married | 81.2 | 18.8 | 55.0 |
| widowed | 66.7 | 33.3 | 12.5 |
| divorced | 47.6 | 52.4 | 12.4 |
| separated | 25.0 | 75.0 | 2.7 |
| never married | 25.6 | 74.4 | 17.4 |
| Educational level of household head (percent of households): | | | |
| completed 0-8 years | 45.9 | 54.2 | 11.4 |
| completed 9-12 years | 60.6 | 39.4 | 68.0 |
| completed 13-over | 70.8 | 29.3 | 20.6 |
| Occupation of household head (percent of households): | | | |
| white collar | 63.8 | 36.2 | 45.3 |
| blue collar | 65.8 | 34.2 | 29.7 |
| not working | 62.5 | 37.5 | 25.0 |
| Sex of household head (percent of households): | | | |
| male | 70.4 | 29.6 | 67.0 |
| female | 51.2 | 48.8 | 33.0 |

Table 4. Characteristics of owners and renters in the South

| VARIABLES | OWNERS | RENTERS | ALL HOUSEHOLDS |
|--|--------|---------|----------------|
| Number of households | 728 | 526 | 1,254 |
| Percent of households | 58.1 | 41.9 | 100.0 |
| Mean income before taxes (\$) | 25,916 | 13,780 | 20,825 |
| Mean household size (number of persons): | 3.0 | 2.2 | 2.7 |
| Mean age of household head (years) | 49.8 | 37.5 | 44.5 |
| Race of household head (percent of households): | | | |
| white | 61.3 | 38.7 | 79.7 |
| black | 45.3 | 54.7 | 20.3 |
| Marital status of household head (percent of households): | | | |
| married | 77.1 | 22.9 | 55.6 |
| widowed | 59.4 | 40.6 | 11.2 |
| divorced | 42.9 | 57.1 | 10.5 |
| separated | 30.6 | 69.4 | 3.9 |
| never married | 13.9 | 86.1 | 18.8 |
| Educational level of household head (percent of households): | | | |
| completed 0-8 years | 60.6 | 40.0 | 13.8 |
| completed 9-12 years | 53.5 | 46.5 | 62.7 |
| completed 13-over | 66.3 | 37.7 | 23.5 |
| Sex of household head (percent of households): | | | |
| male | 66.9 | 33.1 | 64.8 |
| female | 41.2 | 58.8 | 35.2 |

In the Midwest, the order of their magnitude is: 1) age of household head, 2) never-married or divorced household head, 3) household income, 4) household size, 5) occupation of household head, 6) race of household head, and 7) education of household head.

In the South, the order is: 1) age of household head, 2) never-married or separated household head, 3) education of household head, 4) household income, 5) household size, and 6) sex of household head.

In the West, the order is: 1) age of household head, 2) household income, 3) divorced household head, 4) education of household head, 5) household size, 6) never-married household head, and 7) blue-collar household head.

Housing and Society, vol. 16, No. 1, 1989

Table 5. Characteristics of owners and renters in the West

| VARIABLES | OWNERS | RENTERS | ALL HOUSEHOLDS |
|--|--------|---------|----------------|
| Number of households | 520 | 488 | 1,118 |
| Percent of households | 51.6 | 48.4 | 100.0 |
| Mean income before taxes (\$) | 30,505 | 16,029 | 23,497 |
| Mean household size (number of persons): | 2.8 | 2.0 | 2.4 |
| Mean age of household head (years): | 50.1 | 36.0 | 43.3 |
| Race of household head (percent of households): | | | |
| white | 52.5 | 47.5 | 94.4 |
| black | 35.7 | 64.3 | 5.6 |
| Marital status of household head (percent of households): | | | |
| married | 67.9 | 32.1 | 52.7 |
| widowed | 68.3 | 31.7 | 9.0 |
| divorced | 34.6 | 65.4 | 13.7 |
| separated | 34.1 | 65.9 | 3.7 |
| never married | 18.8 | 81.2 | 20.9 |
| Educational level of household head (percent of households): | | | |
| completed 0-8 years | 32.3 | 67.8 | 7.1 |
| completed 9-12 years | 48.4 | 51.6 | 66.5 |
| completed 13-over | 63.8 | 36.2 | 26.4 |
| Occupation of household head (percent of households): | | | |
| white collar | 49.5 | 50.5 | 50.9 |
| blue collar | 51.3 | 48.7 | 26.9 |
| not working | 58.2 | 41.8 | 22.2 |
| Sex of household head (percent of households): | | | |
| male | 55.8 | 44.2 | 67.7 |
| female | 43.8 | 56.2 | 22.3 |

In the aggregate of the four regions, the order of their magnitude is: 1) age of household head, 2) never-married or divorced household head, 3) household income, 4) household size, 5) education of household head, 6) occupation of household head, 7) race of household head, and 8) sex of household head.

Table 6. Characteristics of owners and renters for the aggregate of the four regions

| VARIABLES | OWNERS | RENTERS | ALL HOUSEHOLDS |
|--|--------|---------|----------------|
| Number of households | 3,069 | 1,941 | 5,010 |
| Percent of households | 61.3 | 38.7 | 100.0 |
| Mean income before taxes (\$) | 24,426 | 13,592 | 20,229 |
| Mean household size (number of persons): | 2.9 | 2.1 | 2.6 |
| Mean age of household head (years) | 50.8 | 36.3 | 45.9 |
| Race of household head (percent of households): | | | |
| white | 63.3 | 36.7 | 88.9 |
| black | 44.7 | 55.3 | 11.1 |
| Marital status of household head (percent of households): | | | |
| married | 77.3 | 22.7 | 56.5 |
| widowed | 65.6 | 34.4 | 11.8 |
| divorced | 43.9 | 56.1 | 10.7 |
| separated | 32.6 | 67.4 | 3.3 |
| never married | 20.6 | 79.4 | 17.6 |
| Educational level of household head (percent of households): | | | |
| completed 0-8 years | 54.4 | 45.7 | 12.4 |
| completed 9-12 years | 57.2 | 42.8 | 27.8 |
| completed 13-over | 69.4 | 30.7 | 21.8 |
| Occupation of household head (percent of households): | | | |
| white collar | 58.6 | 41.4 | 45.7 |
| blue collar | 62.2 | 37.8 | 27.8 |
| not working | 63.5 | 36.5 | 26.5 |
| Sex of household head (percent of households): | | | |
| male | 67.8 | 32.2 | 67.1 |
| female | 46.7 | 53.3 | 32.9 |

Region of residence also influences likelihood of home ownership. The Midwest is important in explaining home ownership compared with the reference region.

Comparing the findings of each of the four regions and the aggregate of the four regions, there are some similarities and differences in explaining home

Housing and Society, Vol. 16, No. 1, 1989

Table 7. Summary of standardized discriminant function coefficients by model^a

| | MODEL | | | | |
|---|---------------------|---------------------|---------------------|---------------------|----------------------|
| | Northeast | Midwest | South | West | All Regions |
| Age | 0.7363** (102.5) | 0.7838** (119.1) | 0.6498** (128.0) | 0.8410** (142.0) | 0.7641** (530.0) |
| Income | 0.2355** (14.9) | 0.2745** (23.7) | 0.2417** (21.0) | 0.3800** (40.8) | 0.2634** (89.6) |
| Household size | 0.2837** (18.4) | 0.2644** (15.7) | 0.2031** (13.0) | 0.2811** (18.8) | 0.2339** (59.3) |
| Race | 0.1981** (12.6) | 0.1650** (9.3) | 0.0616 (2.5) | -- | 0.0969** (14.1) |
| Education | 0.2898** (20.6) | 0.1527* (6.3) | 0.2603** (22.1) | 0.2622** (20.3) | 0.2261 (61.2) |
| Sex | -- | -- | 0.1009** (6.9) | -- | 0.0650** (10.2) |
| Occupation: | | | | | |
| White collar | 0.1269 (2.5) | 0.2768** (10.9) | 0.0614 (3.2) | 0.1076 (2.5) | 0.1427** (13.5) |
| Blue collar | 0.1574* (4.7) | 0.2698** (12.1) | -- | 0.2106* (6.4) | 0.1643** (20.2) |
| Marital status: | | | | | |
| widowed | -0.2561** (14.6) | -0.2318** (13.1) | -0.2653** (16.8) | -0.1066 (2.7) | -0.2207** (41.5) |
| divorced | -0.2231** (14.7) | -0.3189** (30.1) | -0.2707** (23.3) | -0.1835** (26.6) | -0.3088** (109.9) |
| separated | -0.1760** (9.4) | -0.2572** (22.5) | -0.2623** (26.6) | -0.0852 (1.6) | -0.2123** (63.6) |
| never married | -0.4639** (46.6) | -0.4407** (42.6) | -0.5685** (94.2) | -0.2849** (17.1) | -0.4830** (234.7) |
| Midwest | | | | | 0.0824** |
| Hit ratio | 77.61% | 77.79% | 76.48% | 76.30% | 75.93% |
| Number of cases for discriminant and Classification function: | 1,014 | 1,157 | 1,254 | 1,118 | 4,543 |
| Chi-square | 412.6** | 448.2** | 551.8** | 437.6** | 1950.1** |
| df | 11 | 11 | 11 | 10 | 13 |

a. Each model was developed from the corresponding subsample. F-values are in parentheses

* Statistically significant at 5% level

** Statistically significant at 1% level

-- Statistically not significant, and not included in the model

ownership. The consistent result in each of the four regions and the aggregate of the four regions is that age and education of household head, income, and household size are consistently significant in differentiating home owners from renters.

The relative significance of sex, race, and occupation of household head varies among regions. Sex is a significant determinant of home ownership in the South, but it is not significant in the Northeast, Midwest, and the West. Race is significant in the Northeast and the Midwest, but it is not significant in the South and the West. Having a white- or blue-collar household head compared with a head who is not employed is significant in the Northeast, Midwest, and the West. In the South, having a white-collar household head is significant while having a blue-collar household head does not influence home ownership.

Discussion

The results of the discriminant analysis with respect to age of household head, income, household size, and the status of being married are generally consistent with results of previous studies (Burgess, 1982; Carliner, 1974; Dillman, Tremblay, and Dillman, 1979; Morris and Cho, 1986).

Age of household head is found to be the most important of the variables influencing home ownership. Age may be associated with length of time in which savings can be accumulated, mobility, and lifestyle preference. There may be a life-cycle effect influencing home ownership: as a household increases in size and job stability, home ownership may become increasingly desirable.

The relationship between home ownership and income is significant and positive in each of the four regions. Previous studies indicate that household income is one of the principal determinants of home ownership (Goodman and Kawai, 1984; Eilbott and Binkowski, 1985; Linneman, 1985). A home is a superior good and the single most expensive durable good in a household budget. A household head without a high income and without a good credit rating may find it difficult to obtain a loan from a lending institution and, hence, would find it difficult to purchase a home.

Household size is found to be one of the factors influencing home ownership in each of the four regions and in the aggregate of the four regions. Larger households almost always include children. A household with children may be more likely to own its home than a household without children because of the greater demand for space and separate rooms for privacy, aspects that are normally associated with owner-occupied units.

Several previous studies find significant differences in home ownership between white and black households (Carliner, 1974; Goodman and Kawai, 1984; Hanna and Lindamood, 1979; Li, 1977; Linneman, 1985; and Pol, Rebecca, Ryker, and Chan, 1981). Hanna and Lindamood (1979) and Pol et al. (1981), using data from the South, find that having a white household head is positively associated and having a black household head is negatively associated with home ownership. Kain and Quigley (1972), using data from the Midwest, and Hohm (1983), using data from the West, observe that race is not significant in explaining home ownership. Some authors explain the differences of home ownership between black and white households in terms of taste and preference differences (Guy and Pol, 1983; Roistacher and Goodman, 1976). Results of the present study suggest that the role of race in home ownership may indeed vary by geographic location. Being a member of the white race, is positively associated with home ownership in the Northeast and the Midwest, but it is not significant in the South and the

West. This difference could be due to a difference in tastes or preferences, or it could represent discrimination against blacks in housing markets. The taste or the lifestyle of families may be one of the reasons for the differences in home ownership between black and white households. However, such taste or preference may be influenced by both cultural and demographic factors that may vary by region. Whatever the reason, taste or discrimination, the influence of race apparently varies from one region to another.

Few studies have examined the effect of education on home ownership. Most of them find that education does not have an important effect on home ownership (Hanna and Lindamood, 1979; Winter and Morris, 1982). In the present study, education is a significant factor and is positively associated with home ownership consistently in each of the four regions and in the aggregate of the four regions.

In Linneman's (1985) study using data from the Midwest and Northeast (i.e., Chicago and New York), having a male household head is positively associated with home ownership in the Midwest. Having a female household head, however, is negatively associated with home ownership in the Midwest. Morris and Cho (1986) obtain similar results for housing preference in the Midwest (i.e., Iowa). Linneman also finds, however, that sex of the household head is *not* significant in the Northeast when predicting home ownership.

According to the findings of the present study, sex is positively associated with home ownership only in the South. Differential rates of home ownership may occur because males may be likely to view home ownership as more important than are females. Females may also face discrimination in housing markets reducing their ability to become home owners. If true, this is evident only in the South.

Occupation of the household head is examined in several previous studies and proves to be one factor having an effect on home ownership (Dillman et al., 1979; Morris and Cho, 1986). Morris and Winter (1976) conclude that differences in the effect of occupation on home ownership are associated with differences in taste. Findings of the present study indicate that impact of occupation on home ownership varies from one region to another. A white-collar or blue-collar household head is important in explaining home ownership in the Northeast, Midwest, and West and in the aggregate of the four regions. In the Midwest, having a white-collar household head is slightly more significant than having a blue-collar head-of-household in explaining home ownership. However, in the Northeast and in the aggregate of the four regions, a household with a blue-collar head is more likely to be own a home than either a household with a white-collar head or a household with a head who is not currently employed. In the South, having a white-collar head-of-household is significant to home ownership, but having a blue-collar household head is not significant.

Marital status is an important factor in home ownership according to several studies (Burgess, 1982; Carliner, 1974; Dillman et al., 1979; Morris and Cho, 1986; Pol et al., 1981). In this study, being married is significant in home ownership compared with being widowed, divorced, separated, or never married. This is true in each of the four regions and in the aggregate of the four regions. The tendency to rent rather than own is especially strong among those who are separated or never married. There are several possible reasons for this tendency: 1) lack of financial resources, 2) less need for space, 3) reluctance to take on responsibility for maintaining a home, or 4) lower preference for home ownership.

CONCLUSIONS AND IMPLICATIONS

Sex of household is not a significant factor in explaining home ownership in the Northeast, Midwest, and the West, although it is a significant factor when data are aggregated for the United States as a whole. Race is another variable that is significant in the aggregate of all regions. However, it is not significant in differentiating home owners from renters in the South and the West. Occupation also appears to have a different relationship with home ownership, depending on the region. These regional differences are not revealed when a single demand function is calculated for the United States as a whole.

Policy makers need knowledge and corresponding empirical data as to how the demand for housing is related to demographic factors in order to establish appropriate housing programs and policies to promote the well-being of the public. If determinants of home ownership differ among regions and perhaps among areas within a region, different housing policies may be needed in each region or area. If that is not possible, for example, in the case of federal regulations, then the existence of regional differences should be taken into account in assessing the effect and cost of proposed regulations. For example, federal regulations might be proposed to ensure that home ownership is equally available regardless of race or sex-- regulations that would impose an extra cost or burden. The findings of this study indicate that such regulations are not needed in some regions. Thus, a uniform requirement would result in some regions bearing the cost of regulation without any expected benefit.

This study provides empirical data showing the relationship between demographic factors and home ownership for each region. It indicates that factors that influence housing demand and, in particular, the choice of home ownership vs. renting, vary by region.

REFERENCES

- Burgess, S. (1982). Determinants of home ownership: A comparison of single female- and single male-headed households. *Housing and Society*, 9 (2), 87-94.
- Carliner, G. (1974). Determinants of home ownership. *Land Economics*, 50 (2), 109-119.
- Dillman, D., Tremblay, K., and Dillman, J. (1979). Influence of housing norms and personal characteristics on stated housing preferences. *Housing and Society*, 6 (1), 2-19.
- Eilbott, P. and Binkowski, E. (1985). The determinants of SMSA home ownership rates. *Journal of Urban Economics*, 17 (3), 293-304.
- Goodman, A. and Kawai, M. (1984). Estimation and policy implications of rental housing demand. *Journal of Urban Economics*, 16 (1), 76-90.
- Guy, R. and Pol, L. (1983). Racial discrimination in home ownership: A re-evaluation of the preference hypothesis. *Housing and Society*, 10 (3), 117-124.
- Hanna, S. and Lindamood, S. (1979). Housing preferences of blacks and whites in Montgomery, Alabama. *Housing and Society*, 6 (1), 39-47.

Housing and Society, Vol. 16, No. 1, 1989

- Hanna, S. and Lindamood, S. (1985). Ownership and ownership preference: A comparison of OLS and Logit regressions. *Housing and Society*, 12 (3), 133-146.
- Hohm, C. (1983). Expectations for future home ownership. *Housing and Society*, 10 (1), 25-35.
- Kain, J. and Quigley, J. (1972). Housing market discrimination, home ownership, and savings behavior. *American Economic Review*, 62 (3), 263-277.
- Klecka, W. (1975). Discriminant analysis. In N. Nie, C. Hull, J. Jenkins, K. Steinbrenner, and D. Bent (Eds.), *Statistical Package for the Social Sciences*. New York: McGraw-Hill, Inc., 434-467.
- Li, M. (1977). A Logit model of home ownership. *Econometrica*, 45 (5), 1081-1097.
- Linneman, P. (1985). An economic analysis of the home ownership decision. *Journal of Urban Economics*, 17 (2), 230-246.
- Marsden, P. (1981). *Linear Models in Social Research*. Beverly Hills, CA: SAGE Publications.
- Morris, E. and Cho, J. (1986). Logit models for housing preference, demographic variables and actual housing conditions. *Housing and Society*, 13 (2), 118-135.
- Morris, E. and Winter, M. (1976). Housing and occupation subcultures. *Housing Educators Journal*, 3 (3), 2-16.
- Pol, L., Rebecca, E., Ryker, R., and Chan, W. (1981). Anticipated discrimination in the home lending market. *Housing and Society*, 8 (3), 3-11.
- Roistacher, E. and Goodman, J. (1976). Race and home ownership: Is discrimination disappearing? *Economic Inquiry*, 14 (2), 289-299.
- Studenmund, A. and Cassidy, H. (1987). *Using Econometrics: A Practical Guide*. Boston, MA: Little, Brown, and Company.
- U.S. Bureau of Labor Statistics (1987). *Interview Survey Public Use Tape Documentation: 1984*. Washington, D.C.: U.S. Government Printing Office.
- Winter, M. and Morris, E. (1982). Housing conditions, satisfaction, and conventionality: An analysis of the housing of female-headed households. *Housing and Society*, 9 (2), 70-86.