Residential satisfaction, propensity to move, and residential mobility: a causal model

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RESIDENTIAL SATISFACTION, PROPENSITY TO MOVE, AND RESIDENTIAL MOBILITY: A CAUSAL MODEL.

IOWA STATE UNIVERSITY, PH.D., 1979
Residential satisfaction, propensity to move, and residential mobility: a causal model

by

SueAnn Ramsay Crull

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of The Requirements for the Degree of DOCTOR OF PHILOSOPHY

Departments: Family Environment Sociology and Anthropology
Joint-majors: Family Environment Sociology

Approved:

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Iowa State University
Ames, Iowa
1979
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CHAPTER I  INTRODUCTION

Research Problem

The purpose of this dissertation is to evaluate the causal influences of housing deficits, residential satisfaction, and propensity to move on residential mobility. Until recently, the study of the determinants of residential mobility has been centered on the demographic and soci-economic characteristics of the household. In the 1970's, the effects of intervening housing variables have begun to be incorporated into the analysis of residential mobility.

The critical issue in this dissertation is the interpretation of residential mobility as a housing adjustment process in which households adjust their housing to meet changing needs. Rossi (1955:9) wrote that residential mobility is:

the process by which families adjust their housing to the housing needs that are generated by shifts in family composition that accompany life cycle changes.

Although there is a general consensus that changing housing needs often result in residential mobility, analysis of factors involved in the adjustment process is needed. Therefore, the primary objective of this dissertation is to analyze the housing phenomena that are involved in the process that produces residential mobility.

It is important in the applied sense to understand how housing factors relate to residential mobility because of the social, psychological, and economic impacts housing has on the individual, household, community, and society. This understanding is also important because of its potential applicability to the suppliers and consumers of housing.
Understanding how housing factors relate to residential mobility is also important in the theoretical sense. In this dissertation, the housing adjustment process is conceptualized in terms of sociological theory. Application of theory to a practical experience such as residential mobility can compel the social scientist to expand and modify the more general sociological theory. General theory guides the researcher in meaningful pragmatic research but the research in turn is essential to arrive at scientifically valid theories. Therefore, the study of the housing adjustment process which leads to residential mobility has potential for both applied and theoretical contributions.

However, acquiring an understanding of the process that produces residential mobility depends upon the capacity of theory and research to specify the pertinent factors and determine their relationships to residential mobility and with one another. To a great extent, theory and research on housing have just begun to clearly specify these factors. Thus, one of the most immediate and significant contributions that theoretical and empirical research can make toward increasing our understanding of residential mobility is to clarify the conceptual and empirical involvement of housing factors.
Research Objectives

The general objective of this study is to develop a better understanding of the conceptual and empirical nature of housing factors involved in the process that leads to residential mobility. The specific objectives of this study are:

1) To identify and explicate sociological constructs and concepts applicable to residential mobility.

2) To develop measures of the housing factors involved in the process that produces residential mobility.

3) To theoretically develop and empirically examine a causal model that focuses on housing deficits, neighborhood quality, housing and neighborhood satisfaction, and the propensity to move as intervening variables between characteristics of the household and subsequent residential mobility.

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1This research was approved by the University Human Subjects Review Committee, Iowa State University.
CHAPTER II THEORY

The objective of this chapter is to specify the theory which underlies this study of residential mobility. First, a general theoretical orientation is presented which provides a rationale for the use of functional analysis in the study of residential mobility. This is followed by the examination of housing adjustment theory as the specific theoretical framework which provides rationale and justification for the construction of a conceptual model of residential mobility with housing adjustment factors as determinants. The assumptions underlying the explication of functionalism to housing adjustment are presented. In addition, the theoretical concepts are defined and relevant research is reviewed. The chapter concludes with the presentation of a causal model and sixteen hypotheses for empirical testing.

General Theoretical Orientation

Although the specific purpose of this study is to add to the understanding of the causes of residential mobility, a goal of this study can also be generalized as a desire to better understand the relationship between society and the individual. Early in the development of the field of sociology, society was viewed as an organic, collective whole which operated primarily through the influence of the normative structure (Durkheim, 1961). Durkheim saw society alone as the authority for setting an individual's limits. Limits were perceived to be set by a force exterior to the individual, a form of moral force. Therefore,
Durkheim viewed society as the only moral power superior to the individual and the only authority he would accept.

More recent sociologists, such as Merton (1938) and Parsons (1949) also assume the individual acts within social limits. Merton, expressing the structuralist's point of view, posits that human actions are largely the result of social pressure. Merton believes that people construct a self-image by comparing themselves to others. According to Merton, conforming and nonconforming behavior alike are the result of social pressure. When individuals compare themselves to others, they assimilate norms and values that direct their behavior.

Parsons developed a theory of society based on his view of the human being as a decision-making actor influenced by normative and situational factors. Parsons assumes that society is a social system of interaction that possesses an independent reality beyond the existence of the individual. The social system consists of subsystems that represent a number of underlying primary functions. Parsons posits society's central focus as the tendency toward equilibrium and equilibrium is approached through self-regulating mechanisms (Parsons, 1951).

Parsons (1949) presented a voluntaristic theory of action which was the beginning of his functional theory of social organization. He conceptualized voluntarism as the subjective decision-making processes of the actor and he considered decisions as the partial outcome of certain kinds of influences, both normative and situational. Parsons' voluntaristic action (the unit act) is divided into the following elements:
(1) an actor, who, at this point in Parsons' thinking, is an individual person; (2) the actor is viewed as goal seeking; (3) the actor is also in possession of alternative means to achieve the goals; (4) the actor is confronted with a variety of situational conditions, such as his own biological makeup and heredity as well as various external ecological constraints, which influence the selection of goals and means; (5) the actor is seen to be governed by values, norms, and other ideas in that these ideas influence what is considered a goal and what means are selected to achieve it; thus, (6) action involves the actor's making subjective decisions about the means to achieve goals, all of which are constrained by ideas and situational conditions (Turner, 1974:31).

In his later works, Parsons went beyond the actor-situational frame of reference to use functional analysis to explain the complications introduced by the interaction of a plurality of actors.

The basic idea of functional analysis applicable to this dissertation is that there are social limits within which humans operate. These limits define the range of appropriate conditions (cultural norms) within which humans live. When behavior or life conditions exceed the limits, there is a disequilibrium and stress and the means to regain equilibrium or reach a new equilibrium are sought. Steps within the equilibrium model are identified as 1) knowledge of the normatively defined limits, 2) recognition of deviations outside the limits, 3) stress as the result of the deviations, 4) conative assessment, and 5) engagement in meliorative behavior.

Fishbein (1966) is supportive of the equilibrium model in that he believes that cognitive, affective, and conative aspects producing behavior should be defined and measured independently. Fishbein (1966, 1967, 1976) is also supportive of a normative approach to understanding behavior. The Fishbein model incorporates attitudinal and social
influences in attempting to explain the formation of behavioral intention, which is seen as the immediate predecessor of overt behavior. Theoretically, behavior is a function of intention which is determined by attitudes and subjective norms.

According to Fishbein, the attitude component is based upon the belief that performing the behavior leads to some consequence and upon the evaluation of the desirability of the consequence. The subjective norm component is based upon the conception that a referent would want the individual to perform the behavior and upon the motivation the individual has to comply with the referent. Both the attitudinal and normative components are summary measures of potential sources of influence on the formation of behavioral intentions. In terms of the equilibrium model, Fishbein's attitudinal component can be viewed as a personal factor involving stress and his normative component can be viewed as a social factor involving normatively defined limits. His behavioral intention component can be viewed as conative assessment and his behavior component as meliorative behavior in the equilibrium model.

In this study, the equilibrium model is applied to residential mobility. In general terms, the theoretical issue is to assess the effect of housing factors on residential mobility. Residential mobility is viewed as a housing behavior motivated by the household's desire for acceptance from itself and from others. The household is viewed as judging its own housing and the housing of others in terms of cultural norms. Substantiated in housing research (Rossi, 1955), housing needs are viewed as related to household composition which changes as the family
goes through the life cycle. Also, indicated in family theory (Rodgers, 1962) is the idea that as the composition and size of the family change over time, the norms that apply to it vary with each life cycle stage. Therefore, it can be assumed that changing housing needs can be normatively defined as the family goes through the life cycle. Motivation for conducting this dissertation has evolved from a general desire to better understand the relationship between society and the individual and from a specific desire to assess the magnitude of the effect of housing norms on housing behavior.

Specific Theoretical Framework

An equilibrium model of residential mobility is supported in housing theory and research (Brown and Moore, 1970; Michelson, 1977; Morris and Winter, 1975, 1978; Morris, Crull, and Winter, 1976). In this dissertation, the specific theoretical framework developed by Morris and Winter (1978) is utilized to study residential mobility as an equilibrium model. Morris and Winter present a systemic functional analysis which serves as the basis for a comparative static model identifying the structural factors involved in the housing adjustment process.

Morris and Winter view families as evaluating their housing in terms of cultural norms and family norms. Cultural norms are defined as societal standards or rules for behavior of life conditions. Family norms are the family's standards used with respect to itself and its specific situation. Although families are influenced by cultural norms,
a family may or may not share the norms of the culture. In addition to the existence of unique family norms, deviation from norms is often permitted in response to extenuating circumstances. For example, consider home ownership as the prescribed cultural norm. Renters who deviate from this norm may have family norms for rental arrangements or may be deviating from the cultural norm because they can not afford to own a home right now.

Families evaluate their housing periodically and use norms as criteria. When a family's housing does not meet the norms, Morris and Winter (1978) say that a normative housing deficit exists which is defined as a gap between current housing and housing prescribed by the norms. If the deficit is perceived by the family and involves a salient housing condition, housing satisfaction is low. When satisfaction is low, the family considers some form of housing adjustment behavior. Therefore, housing adjustment behavior will tend to occur whenever a family's housing deviates far enough from the norms to have significantly reduced satisfaction. Housing adjustment behavior involves either residential mobility or residential alterations and additions. Either the family moves to another dwelling or changes the present dwelling to meet its needs.

According to Morris and Winter, constraints may impinge upon the family's ability to engage in successful adjustment behavior. Generally, constraints are grouped within one of three categories: 1) intrafamilial constraints which deal with the family's ability to solve problems and
make decisions, 2) extrafamilial constraints which involve economic, social or political factors such as discrimination or supply and price factors in the housing market and are usually out of the direct control of the family, and 3) attractive features of the current dwelling which may act to cancel out unsatisfactory features. Intrafamilial constraints tend to be more prevalent when the family is involved with identification of deficits and determination of satisfaction. Extrafamilial constraints are more frequent when the family is considering alternative actions to reduce dissatisfaction. If a family is unable to overcome constraints that block adjustment responses, it may select adaptive responses to handle the housing dissatisfaction. Adaptative responses involve changing family norms rather than housing.

The explication of functionalism (equilibrium mode) as housing adjustment (residential mobility) is as follows:

1) Housing norms are identified as the relevant social limits within which the household operates.

2) Deviations outside of the limits (housing norms) are conceptualized as housing deficits.

3) Stress as the result of the deviations is identified as housing dissatisfaction.

4) Dissatisfaction produces propensity to change (to consider doing something about the housing situation) which is conative assessment.

5) Engagement in meliorative behavior is housing adjustment (changing the housing conditions).

In this dissertation the only meliorative behavior considered is residential mobility. Constraints which may impinge upon the household's
ability to engage in successful adjustment behavior are identified in terms of household characteristics.

Therefore, residential mobility is viewed as housing behavior motivated by the desire for acceptance from oneself and others (Morris and Winter, 1978). Housing provides shelter and protection, but also symbolizes the status of the family. A family judges its own housing and housing of others in terms of norms. Characteristics of a family's dwelling and neighborhood influence the response of others to the family. The response of others also influences the family's feelings about itself. Stated by Morris and Winter (1978:6) "The motivation that prompts housing behavior is not simply the desire for shelter, but the desire for the right kind of shelter."

Conceptual Definitions

**Potential and actual residential mobility**

Generally, studies of residential mobility have analyzed either the propensity to move or actual mobility. The propensity to move is motivation defined as desires, expectations, or plans to move to another dwelling. Residential mobility is conceptualized as actual moves within a local area. Mobility based on moves to other areas is referred to as migration and is not studied in this dissertation.

Residential mobility can be voluntary or involuntary. A voluntary move is initiated by the resident and an involuntary move is initiated by someone other than the resident. Eviction by a landlord or clearance of an area for urban renewal are examples of involuntary
mobility. This analysis is based on the assumption that residential mobility is voluntary. Involuntary mobility is not measured.

The propensity to move is an important intervening variable in the study of residential mobility because the propensity to move appears to be a prerequisite for voluntary mobility. Propensity to move has been found to be highly associated with residential mobility (Duncan and Newman, 1975; Roistacher, 1974; Roistacher, 1975; and Michelson, 1977).

Definitions of propensity to move have varied from study to study. The lack of uniformity in definitions hinders conceptual comparisons. Definitions of propensity to move have varied from study to study. The lack of uniformity in definitions hinders conceptual comparisons. For example, the desire to move and plans to move show different levels of motivation or commitment. Propensity to move has been conceptualized as a series of stages (Duncan and Newman, 1975; Morris et al., 1976; and Morris, 1976). The stages range from thinking about moving, desiring to move, expecting to move to planning to move. According to Morris and Winter (1978), constraints enter at each stage and reduce the percentage of the people who go on to the next stage. Therefore, the family with a propensity to do so may not be able to move (Varady, 1974; Duncan and Newman, 1975; Roistacher, 1975; and Droettboom et al., 1971).

In this dissertation, the dependent variable, residential mobility, is conceptualized as a change in residence within the local area. Propensity to move is conceptualized as a cumulative concept with those expecting to move to be more likely to move than those desiring to move or just thinking about moving. A strong positive relationship is expected between propensity to move and actual mobility (Speare, 1974; Duncan and Newman, 1975; Roistacher, 1975; and Michelson, 1977).
Residential satisfaction

Although Rossi (1955) used complaints as a form of residential satisfaction, the concept has had little development until recently (Harris, 1976). Residential satisfaction is defined here as reported satisfaction with the dwelling and its location or surroundings. Butler et al. (1969) found that residents who were dissatisfied with their housing, neighborhood, and specific features of their dwelling were more likely to plan to move than families who were satisfied. Others (Nathanson, 1974; Droettboom et al., 1971; and Kasl and Harberg, 1972) also found neighborhood dissatisfaction influential on mobility propensity. Speare (1974) found residential satisfaction and Morris et al. (1976) found housing and neighborhood satisfaction as the strongest predictors of potential mobility. Speare (1974) also found that satisfaction was more influential on propensity to move than on subsequent mobility. Speare's findings indicate that satisfaction is a motivating factor but that propensity to move is an important intervening variable between satisfaction and subsequent mobility.

Speare's operationalization of residential satisfaction contained items on the house, the neighborhood, and the distance from work. The items were selected because they had strong correlations with the dependent variable. Although this procedure for constructing an index is questionable, an examination of the multiple regression analyses used to select the index items showed the housing related items explained variance in both potential and subsequent mobility and the neighborhood items explained variance only in potential mobility.
To clarify the influence of residential satisfaction on mobility, the concept must be 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 has independent effects on the propensity to move. It is conceivable that one could be satisfied with the dwelling but not the neighborhood and vice versa. In this dissertation the influences of housing and neighborhood satisfaction as individual variables are assessed on the propensity to move and subsequent residential mobility.

**Housing deficits**

The concept of a housing deficit is used to indicate a deviation from a preferred state. A normative deficit indicates a deviation from a norm. Morris and Winter (1978) define a normative deficit 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 surplus and negative values indicate shortages. Morris and Winter (1978:17) describe three types of deficits: Type I, a deviation from the norms 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.
As evident from the above definitions, a normative deficit is an evaluative concept. The norm is the rule for behavior and the deviation or deficit value indicates how well the actual conditions meet the prescribed conditions. The family evaluates "the way things are" in terms of "the way things ought to be." The impact of normative deficits on subsequent behavior is influenced by the range of permissible deviation from the norms and also by the sanctions administered to deviating cases.

In reviewing empirical evidence to support the concept of housing deficits, Morris and Winter (1978) found that families who engage in residential mobility are generally those who have a shortage of space, are renters, live in multi-family dwellings, have poor quality housing relative to their ability to pay for housing, or spend an unusually high or low proportion of their income for housing.

Morris (1976) tested the influence of space, tenure, and structure-type deficits on housing satisfaction and propensity to move. In this study, he considered three models; the first model used deficits based on cultural norms, the second used deficits based on family norms and the third used deficits based on a combination of cultural and family norms. The addition of the deficits to household characteristics added significantly to the prediction of housing satisfaction and the propensity to move in all three models. Although the combination deficits were the strongest deficits, there appeared to be little difference between the three models. In this dissertation, it is assumed that the household considers cultural norms when formulating family norms, and therefore,
cultural norms directly influence family norms. Because deficits based on family norms allow for the existence of unique preferences and extenuating circumstances, they may be more closely related to current satisfaction than are cultural norms. A housing deficit in this dissertation is defined as a gap between actual conditions and the conditions prescribed by family norms.

Investigated in this dissertation are tenure, structure-type, space and expenditure deficits. Tenure and structure-type are defined as Type I deficits with deviation from the norms in either direction as undesirable. 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 expenditure deficit is a Type II deficit in that paying too much for housing is undesirable. A strong negative relationship is expected between the deficits and housing satisfaction.

**Neighborhood factors**

Neighborhood is conceptualized and delimited differently by sociologists depending upon their area of interest. Some define neighborhood in terms of interaction patterns or "neighboring" and others define neighborhood in terms of characteristics of the inhabitants. According to Thomlinson (1969), three components dominate the definitions of neighborhood. The first component denotes an aggregate of people having enough in common to be called a group although size and cohesiveness
vary. The second component denotes a small area as a necessity because without a territory there would be no neighborhood. And thirdly, the social relations are generally personal rather than impersonal, friendly rather than distant. Because of the three components, neighborhoods are viewed as persistent forces affecting the behavior of residents. A neighborhood can play an important part in socializing its members in accordance with the prevalent norms (Thomlinson, 1969).

According to Butler (1976), it is accepted knowledge that not all areas within a community form neighborhoods. However, Ross (1962) found areas within Boston and Chicago that were viewed as neighborhoods by their residents usually had commonly accepted names that were recognized by residents and non residents.

Neighborhoods may be clearly demarcated spatial units with definite boundaries and long-established traditions or fluid, vaguely defined subparts of a city whose boundaries are only vaguely apparent and differently perceived by the inhabitants (Keller, 1968). A good neighbor is not necessarily a friendly or nice person but one who conforms to the standards of the neighborhood. According to Keller, neighborhood distinctions can be geographical boundaries, ethnic or cultural characteristics, psychological unit, or concentrated use of facilities. Keller cites literature that is supportive of status aspirations, family size, age, and other personal characteristics as important correlates of neighborhood satisfaction. The reputation of an area is often determined by its social rather than its physical climate (Keller, 1968).
Useem, Useem, and Gibson (1960) in a study of upwardly mobile men, found that the men's descriptions of their neighborhoods referred to the name, social class, price range of homes, age of the neighborhood, or occupations of the residents. None of the men described his neighborhood in terms of interpersonal interaction. Useem et al. see residential mobility as a resource for occupationally upwardly mobile men because moving enables them to activate the supporting neighborhood functions appropriate for their changing occupational role.

Relating neighborhood factors to residential mobility, Morris and Winter (1978) found that density, heterogeneity, quality, problems such as crime and poor quality schools, and location within the city had been empirically linked to mobility. Because this dissertation is focused specifically on housing, the only neighborhood factor investigated is quality of housing characteristic of a neighborhood. Butler et al. (1969) found that families living in poor quality neighborhoods were more likely to be planning to move than families in other neighborhoods. The quality of housing characteristic of a neighborhood is expected to be positively related to neighborhood satisfaction.

**Household characteristics**

Demographic and socioeconomic characteristics of the household have been extensively studied in relation to residential mobility. The association of family life cycle with residential mobility has been shown many times. Reviewing the studies of the effects of household characteristics on mobility, Morris and Winter (1978:170) conclude
that younger households, small and large households, and families in the expanding stages of the life cycle are usually the most likely to move. However, Morris and Winter suggest that the coincidence of family life cycle stages and residential mobility occurs because families in some stages are more likely to have housing deficits. Morris and Winter (1978:171) state:

Stage of the family life cycle is a good predictor of residential mobility. It plays a role in the explanation of residential mobility only when other factors such as the balance between family composition and the family's housing are considered.

In this dissertation the family life cycle is based on household size and age of the household head.

Sex of the household head is included in this dissertation to study whether male headed households have different mobility patterns than do female headed households. Little residential mobility research has been done investigating families other than intact families composed of husband, wife, and children. Long (1972) and Goodman (1974) found female-headed households had higher mobility rates than intact families of similar composition.

Education of the head and household income are also included in this dissertation as general indicators of a household's socio-economic status. Generally, education has been found to not be related to mobility rates (USBC, 1974; Duncan and Newman, 1975). Research relating income to mobility has yielded mixed results. Information from the Current Population Reports indicate that before 1970, lower income individuals had higher mobility rates (USBC, 1971) and by 1974 the
pattern had changed. In 1974, the individuals with higher incomes had slightly higher mobility rates than those with lower incomes. Other research indicates little effect of income on mobility plans (Lansing et al., 1964) or on actual mobility (Goodman, 1974). Roistacher (1974) found that extreme decreases or increases in income were associated with higher rates of mobility.

The household characteristics included in this study are not the only exogenous characteristics that are thought to be related to residential mobility. The five included here are considered to be somewhat traditional demographic and socioeconomic characteristics used in the past to predict residential mobility. Household characteristics are given a dual role in this dissertation. One role is for them to serve as control variables in the analysis. The second role of the household characteristics is that they represent constraints operating on the household that may impinge upon the housing adjustment behavior (Winter and Morris, 1978). For example, economic or sexual discrimination may operate together or singly to prevent families from attaining housing that meet the norms. Elderly individuals appear to be more satisfied than younger individuals in similar conditions. Therefore, age appears to index a tendency to be satisfied with less. Hence, demographic and socio-economic characteristics may represent extrafamilial constraints or may represent intrafamilial constraints and predispositions (Winter and Morris, 1978).
However, the primary emphasis of this study is not to analyze the influence of household characteristics on mobility but rather to evaluate the influence of the intervening housing concepts. The intervening variables are assumed to be explanatory concepts which increase the understanding of how housing deficits, housing satisfaction, and propensity to move enter into the process producing residential mobility.

Review of Selected Studies

In the 1970's the effects of intervening housing variables are being incorporated into the analysis of residential mobility. Although the concepts used in this dissertation have been studied in previous housing research (Pickvance, 1974; Speare, 1974; and Morris, Crull, and Winter, 1976), no study has tested the influences of deficits, satisfaction, and propensity to move all in the same model as intervening variables on subsequent residential mobility. Because this dissertation builds on the contributions of specific past research, the relevant empirical studies are reviewed.

Pickvance (1974) was one of the first researchers to view a housing factor as an intervening variable in a residential mobility path model. His model contained three household characteristics (life-cycle, age, and income) as exogenous variables, tenure as an intervening variable, and potential mobility as the dependent variable. The results of his investigation were supportive of tenure as an intervening variable between household characteristics and potential mobility. Generalization of his results, however, is limited due to the uniqueness of his
sample which consisted of West Indians and Asians living in five small districts in Manchester England.

Speare (1974) examined a causal model of residential mobility in which residential satisfaction was analyzed as an intervening variable between individual and residence variables and mobility. Mobility was measured by "the wish to move" in the first year and subsequent mobility one year later. The model was tested on data from a panel study of Rhode Island residents. Speare found that the wish to move variable was positively related to subsequent mobility and satisfaction was negatively related to wish to move and subsequent mobility. He found that wish to move, residential satisfaction, duration of residence, and home ownership had significant independent effects on subsequent mobility and explained 24 percent of the variance in residential mobility. Residential satisfaction and home ownership explained 25 percent of the variance in the wish to move variable. Speare concluded that residential satisfaction was the key determinant of whether a person stays or moves within a local area. Once satisfaction was controlled, Speare found that the background variables except for home ownership added little to the prediction of either the wish to move or subsequent residential mobility.

Morris, Crull, and Winter (1976) introduced normative housing deficits into a fully recursive causal model of propensity to move as intervening variables between household characteristics and housing satisfaction. They were primarily interested in analyzing the effect of housing deficits in the model. Data were gathered from 405 households
in Tioga County, New York, to test the model. Mobility propensity was measured in terms of the desire to move and the expectation of moving. Two levels of intervening variables were included. The first intervening level contained five housing deficits and the second level contained two residential satisfaction variables. The exogenous variables consisted of six socioeconomic and demographic characteristics of the household. In the analysis it was revealed that 49 percent of the variance in moving expectations could be explained by significant paths from desire to move, housing satisfaction, tenure deficits, and three household characteristics. Thirty-one percent of the variance in desire to move was explained by eight significant paths with housing satisfaction being the major explanatory variable. Morris, Crull and Winter concluded that the housing deficits as intervening variables improved the explanatory power of residential mobility models incorporating only household characteristics and residential satisfaction.

The studies just reviewed share the basic idea that housing variables intervene between household characteristics and residential mobility. However, comparisons between the models are somewhat difficult. The studies differed in the specification of the dependent variable and also in the nature and position of the determinants of the dependent variable. Speare (1974) studied mobility wishes and subsequent mobility and Pickvance (1974) and Morris, Crull, and Winter (1976) studied desired and expected mobility.

Pickvance considered only housing tenure as an intervening variable between household characteristics and mobility. Speare considered only
residential satisfaction as an intervening variable between household and housing characteristics and mobility. Morris, Crull and Winter considered housing characteristics in the form of normative deficits and housing satisfaction and neighborhood satisfaction as intervening variables. There is a need to clarify the relationships among the determinants of residential mobility as well as test their influence on subsequent mobility. This dissertation is an attempt to fulfill the need for a clarification of the relationships among housing factors and the assessment of their influence on residential mobility.

Hypotheses and Theoretical Model

On the basis of the theoretical framework specified and the past research reviewed, the following hypotheses are to be tested in this dissertation:

1. The greater the propensity to move, the greater the incidence of subsequent mobility.

2A. The lower the level of housing satisfaction, the greater the propensity to move.

2B. The lower the level of neighborhood satisfaction, the greater the propensity to move.

3A. The higher the level of neighborhood satisfaction, the higher the level of housing satisfaction.

3B. The smaller the number of housing deficits, the higher the level of housing satisfaction.

4. The higher the quality of housing in the neighborhood, the higher the level of neighborhood satisfaction.

5A. The higher the household income, the smaller the number of housing deficits.
5B. The higher the education of the household head, the smaller the number of housing deficits.

5C. The older the household head, the smaller the number of housing deficits.

5D. The larger the household, the smaller the number of housing deficits.

5E. Male-headed households have fewer housing deficits than do female-headed households.

6A. The higher the household income, the higher the quality of neighborhood housing.

6B. The higher the education of the household head, the higher the quality of neighborhood housing.

6C. The older the household head, the higher the quality of neighborhood housing.

6D. The larger the household, the higher the quality of neighborhood housing.

6E. Male-headed households live in neighborhoods with higher quality housing than do female-headed households.

The hypotheses represent the 16 causal paths in the theoretical model in Figure 1. The model includes five categories of variables; household characteristics, deficits, satisfaction, the propensity to move, and residential mobility. The housing variables (deficits, satisfaction, and propensity) are intervening variables between characteristics of the household (exogenous variables) and subsequent residential mobility (dependent variable). In terms of the causal model, it is hypothesized that residential mobility is caused by propensity to move, which in turn is caused by housing satisfaction and neighborhood satisfaction. Housing satisfaction is hypothesized to be caused by neighborhood satisfaction and housing deficits. Neighborhood satisfaction is influenced by the
Figure 1. Theoretical causal model. (The conventional curved arrows between pairs of exogenous variables (X₁ through X₅) representing noncausal relationships are omitted for simplification of the figure.)
neighborhood housing quality. The household characteristics are causally related to housing deficits and neighborhood housing quality. This model is presented for testing in order to clarify the conceptual and empirical nature of housing factors involved in the process that leads to residential mobility.
CHAPTER III PROCEDURES

The Sample

The sample from which data were obtained for this dissertation was drawn in 1975 as a stratified random sample of about six percent of the households in a small city (31,000) in north central Iowa. Stratification was by enumeration districts in order to guarantee geographic distribution of the sample throughout the city. Personal interviews were completed in 455 households. Interviewers were students at Iowa State University and Iowa Central Community College. Each interview was about an hour in length. In most cases, the wife of the head of the household or a female household head was the respondent. However, in some cases the male head of the household or both the head and his spouse participated in the interview. Preliminary analysis of the data indicate that sex of the respondent is not significantly related to the variables under study.

In 1978, a follow-up study was undertaken to study residential energy conservation and housing values by means of a mail questionnaire to participants in the original study. In the questionnaire, the respondents were asked to give the current address and the date the household moved into the current dwelling. If a household did not return the questionnaire after three contacts, other techniques were used to obtain the current addresses of the households interviewed in 1975. Sixteen of the households were dropped from the sample due to deaths and 13 households were dropped because the current residence could not be
verified. Thirty-eight of the households had moved outside of the local area and therefore were dropped from the study because of migration. Residential mobility data were collected on 388 households.

Over one-half of the residential mobility data collected in 1978 was by means of the mailed questionnaires. Because questionnaires were not forwarded by the Postal Service to households that had moved during the first two years after the initial interview, the current telephone directory was used to locate some of the nonrespondents who had moved within the local area. Telephone calls were made to verify their involvement in the 1975 project. Telephone calls were also made to nonmovers who refused to return the questionnaire to verify their current residence and their participation in the 1975 project. Mobile households not in the current telephone directory were traced by three methods: 1) telephoning individuals listed in the current telephone directory with similar last names, 2) personal inquiries at the 1975 residence and/or neighboring residences, and 3) contacting the employers of the household head as listed in the 1975 city directory.

Residential mobility data for 57 percent of the households were verified by completed questionnaires. Verification of the location of an additional 34 percent of the households was by contact with the household or relatives, four percent by inquiries at the 1975 residence or neighboring residences, and five percent by contact with previous employers or other community sources.

The unit of analysis in this dissertation is the household. While the term "family" implies a group of two or more related individuals, a
household can be a family or a group of unrelated individuals sharing the same dwelling. In 1975, households were sampled because the objective of the project was to analyze general housing needs in the community. Although the household may not be as meaningful as the family as the unit in residential mobility analysis (Morris and Winter, 1978:47), data collected in 1975 were insufficient to distinguish between groups of unrelated individuals and families. Therefore, no attempt was made to verify if male and female cohabitants were married or if cohabitants of the same sex were related.

Preliminary analysis of the frequency distributions for the 1975 variables revealed missing data, particularly for income, housing expenditures, and expenditure norms. Missing data can be dealt with in three ways: 1) drop the variables with missing cases from the model, 2) drop the households with missing data from the sample, or 3) assign values to the cases with missing data. Because the financial variables were considered important in housing decisions, the first option was rejected. Assigning missing data is usually considered beneficial if analysis plans call for construction of numerous indices or multivariate techniques (Warwick and Lininger, 1975:277). Missing data were assigned by regression estimation based on complete cases whenever possible. For a few cases, the sample mean or modal value was assigned. Forty-seven households were dropped from the analysis due to missing financial information. Twenty-two of the 47 households were dropped because their income could not be calculated by regression estimation.
Table 1. 1978 Data set derived from 1975 sample

<table>
<thead>
<tr>
<th></th>
<th>Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975 Sample</td>
<td>455</td>
</tr>
<tr>
<td>dropped due to deaths</td>
<td>16</td>
</tr>
<tr>
<td>current residence unverified</td>
<td>13</td>
</tr>
<tr>
<td>dropped due to migration</td>
<td>38</td>
</tr>
<tr>
<td>1978 Sample</td>
<td>388</td>
</tr>
<tr>
<td>dropped due to missing financial data</td>
<td>47</td>
</tr>
<tr>
<td>Final Data Set Used in Analysis</td>
<td>341</td>
</tr>
</tbody>
</table>

The other 25 households were dropped because either two or three of the three financial variables were missing. The analysis for this research was performed using a final data set of 341 households (Table 1).

Measurement of Theoretical Concepts

The eleven concepts included in the theoretical model in Figure 1 in Chapter II are measured by either single measure or composite measure techniques. The single measure technique uses only one question or indicator to measure the domain of a concept. The composite combines several questions to build a summary score, scale, or index for the concept after the domain of the concept has been empirically sampled. All of the exogenous variables (household characteristics) and the dependent variable (residential mobility) were measured by the single measure technique. Composite measures were constructed to
measure housing deficits, neighborhood quality, housing and neighborhood satisfaction, and propensity to move. Questionnaire items that are used in the measurement procedures are included in the Appendix. Frequency distributions and associated descriptive statistics for the variables are also provided in the Appendix. Scale statistics for housing satisfaction, neighborhood satisfaction and propensity to move are also included in the Appendix.

**Residential mobility**

Residential mobility was operationalized by verification of the 1978 residence of the household and comparing the location to the location in 1975. Households living in the same dwelling in 1978 as in 1975 were classified as nonmovers. Households in different dwellings within the local area were classified as movers. The local area was defined as the city and the six surrounding rural counties that shared a common labor and housing market. Multiple moves within the three year period were not measured.

Residential mobility is a dichotomous variable in which movers are coded as 1 and nonmovers are coded as 0. Thirty-one percent of the households had moved over the three year period. Eleven percent of the households relocated within the first year following the 1975 interview. Ten percent of the households moved into their 1978 dwelling during the second year and the remaining 10 percent moved in the third year following the 1975 interview. The time referent of the subsequent mobility is not emphasized here because the theoretical issue under
investigation is if a household moves, not when a household moves. Movers in all three years were combined into the dichotomous variable of movers and nonmovers. The use of a dichotomous dependent variable in regression analysis is viewed sometimes as not an entirely satisfactory procedure (Goldberger, 1964:248-55). However, Speare (1971) who investigated alternative models for mobility, found the procedure to be satisfactory.

Propensity to move

Theoretically, propensity to move was conceptualized as a series of stages with those expecting to move to be more likely to move than those just thinking about moving. The concept was operationalized in terms of three questions: 1) have you thought about moving? 2) do you desire to move in the next year? and 3) do you expect to move in the next year? The propensity to move index was constructed from the three questions, each with dichotomous responses. The summed scale formed a Guttman scale with a coefficient of reproducibility of .996 and a minimum marginal reproducibility of .760. Additional scale statistics are given in the Appendix.

The time referent for the propensity to move variable may be problematical in any panel type mobility study. In this study, the 1975 interview referred to moving desires and expectations within the next year (one year). Actual mobility was measured three years following the interview. The households with a high propensity to move "in the next year" had three years in which to carry out their move.
If the time referent had been for propensity to move in the next three years, a household that had a low propensity to move in the "next year" may have had a stronger propensity for the "next three years" and probably more households would have reported moving propensities. There is also the general problem about changing propensities between interview and the actual mobility check. People with high propensities can also decrease their propensities before the time period passes. Discriminant analysis of the propensity to move variable for the movers in terms of the year of mobility revealed that those who moved in the first year had a higher propensity (mean score of 1.66) than those who moved in the second (mean 1.51) or the third year (mean .85). Consequently, the difference in time referent between the propensity measure and the residential mobility measure may somewhat weaken the effect of the propensity measure as a predictor of subsequent mobility in this model.

**Housing satisfaction**

Housing satisfaction as operationalized included satisfaction with six characteristics of the dwelling. Items included in the scale were selected because they measured satisfaction with social status factors of housing rather than psychological factors. The six social status relevant items included 1) tenure arrangement, 2) structure type of the dwelling, 3) number of bedrooms, 4) physical condition of the dwelling, 5) style and design of the dwelling, and 6) the image the dwelling gives to others. Psychological items such as comfort of the dwelling or aesthetic appearance and decoration, were not included in the satisfaction scale.
Salience of the factors was incorporated into the measure by means of importance weights given by the respondents for each of the individual items in the scale. The satisfaction items were scored minus two, for "very dissatisfied;" minus one, for "dissatisfied;" one, for "satisfied;" and two, for "very satisfied." The importance responses ranged from one, for "very unimportant" up to four, for "very important." The importance response was then multiplied by the satisfaction response for each item for each respondent. The products of the six items (importance X satisfaction) were added to provide the housing satisfaction score for each household. Reliability assessment of the scale revealed an alpha coefficient of .748. Additional scale statistics are given in the Appendix. The efficacy of importance weightings is somewhat controversial. Some authors doubt the value of such weighting (Andrews and Withey, 1976) while others (Morris, 1976; Harris, 1976) indicate that weighting contributes significantly in theoretical as well as empirical terms.

**Neighborhood satisfaction**

The neighborhood satisfaction scale was calculated from three items that described satisfaction with neighborhood people and housing conditions. The items were scored from one, "dislike very much;" to five, "like very much." The respondents used their own frame of reference for what constituted their neighborhood. The coefficient alpha for the neighborhood satisfaction scale is .733. Additional scale statistics are given in the Appendix.
Housing deficits

Housing deficits are defined theoretically as gaps between actual conditions and the conditions prescribed by norms. In this dissertation, the deficit or gap is figured by subtracting the family norm from the actual condition. Deficits are calculated for four family norms (tenure, structure type, space, and expenditures) and then the deficits are summed to yield an index of the total number of deficits for each household.

Tenure and structure-type deficits were theoretically defined as deviations from the norms in either direction as undesirable. For example, if households desired to be owners and actually were renters, they had tenure deficits. Also, if households desired to be renters but were actually owners, they had tenure deficits. Structure-type deficits compared norms and actual conditions in terms of single family dwellings, multi-family dwellings, and mobile homes. If tenure or structure-type norms and actual conditions matched, the households were said to have no tenure or structure-type deficit. Households with norms and conditions that did not match were given tenure and/or structure-type deficits.

The space deficit was measured in terms of number of bedrooms. For this deficit only a shortage of bedrooms or a negative gap was undesirable. Therefore, households with fewer bedrooms than desired were said to have bedroom deficits. The expenditure deficit was based on the dollars spent for housing payment, utilities, insurance, and taxes. The norm was measured by the percent of income 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 adjusted family norm were said to have expenditure deficits. For the expenditure deficit only an excess of expenditure was considered undesirable.

This approach to housing deficits is unique in two ways. First, this is the first time tenure, structure-type, space, and expenditure deficits have been included in a study of residential mobility. Also, this is the first time that an index of these four deficits rather than individual deficits has been evaluated in terms of effect on housing satisfaction.

Neighborhood quality index

The measurement of housing conditions for this area is based upon data obtained by a consulting firm hired by the city in 1968 (Harland Bartholomew and Associates, 1970:50). Fifteen neighborhoods had been delineated in the area utilizing major streets, marked changes in land use, railroad rights-of-way, and topographic barriers as logical and suitable neighborhood boundaries. Attempts were made to include about 1,000 families in a neighborhood or consider an area a neighborhood if it had the potential for such a population. In actuality, the neighborhood ranged from 14 to 1,365 dwelling units with a neighborhood average of 619 dwelling units.
The condition of every dwelling in the area was assessed by field surveys. Each dwelling was placed in one of the four following categories based on estimated service for the next 20 years:

1. Substandard: declined to such a state of disrepair that demolition is indicated.
2. Poor: needs major remodeling to provide satisfactory service.
3. Fair: requires minor rehabilitation in addition to normal maintenance.
4. Satisfactory: capable of providing satisfactory service with normal maintenance.

In computing the neighborhood index, the number of dwellings in satisfactory condition was multiplied by 100; the number in fair condition by 70; the number in poor condition by 30; and the number in substandard condition by 0. The total obtained was then divided by the number of dwellings to provide an index which reflected the overall quality of housing conditions in the neighborhood. Condition of residential structures by neighborhoods is given in a table in the Appendix. Each household was assigned the index for the neighborhood within which its dwelling was located in 1975. A frequency distribution of the neighborhood quality index is provided in the Appendix.

Household characteristics

Five demographic and socioeconomic characteristics of the household measured in 1975 were selected as exogenous variables. Household income is a variable that indicates the total 1974 net income of the household in dollars. Education of the household head is the number
of years of formal schooling completed by the household head. Age of the head is a variable indicating the age in years of the household head. Household size is defined as the number of household members residing in the dwelling on April 1, 1975. Sex of head is a dichotomous variable in which male headed households are coded as 1 and female headed households are coded as 0. If the household consisted of an intact family (both husband and wife present) the household head was coded as male.

A list of the variables used in this study is presented in Table 2. Also included in the table is a brief description of each variable. Frequency distributions, scale statistics and questionnaire items for the variables are provided in the Appendix.

Statistical Procedures

Path analysis procedures (Duncan, 1966; Asher, 1976) are utilized in testing the theoretical model presented in Chapter 2. The path analysis technique employs multiple linear regression to analyze the dependent variable and the intervening variables back to the exogenous variables. Each endogenous variable in the model serves as a dependent variable in separate regression equations with its particular set of independent variables. The path model is the representation of all of the theoretically formulated causal relationships between the eleven variables in the model.

Due to the exploratory nature of this study, the theoretical model is tested by using hierarchical inclusion of the independent variables in the regressions. This means that the researcher determines the
Table 2. List of variables

<table>
<thead>
<tr>
<th>Name</th>
<th>Type of Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exogenous Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1$ Household Income</td>
<td>continuous</td>
<td>total 1974 net income in dollars</td>
</tr>
<tr>
<td>$X_2$ Education of Head</td>
<td>continuous</td>
<td>formal education in years completed</td>
</tr>
<tr>
<td>$X_3$ Age of Head</td>
<td>continuous</td>
<td>age in years</td>
</tr>
<tr>
<td>$X_4$ Household Size</td>
<td>continuous</td>
<td>total number of household members</td>
</tr>
<tr>
<td>$X_5$ Sex of Head</td>
<td>dichotomous</td>
<td>male headed households coded as 1</td>
</tr>
<tr>
<td>Intervening Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_6$ Neighborhood Quality Index</td>
<td>continuous</td>
<td>average condition of neighborhood dwellings</td>
</tr>
<tr>
<td>$X_7$ Housing Deficits</td>
<td>continuous</td>
<td>total number of deficits</td>
</tr>
<tr>
<td>$X_8$ Neighborhood Satisfaction</td>
<td>continuous</td>
<td>Likert-type scale indicating satisfaction</td>
</tr>
<tr>
<td>$X_9$ Housing Satisfaction</td>
<td>continuous</td>
<td>Likert-type scale indicating satisfaction</td>
</tr>
<tr>
<td>$X_{10}$ Propensity to Move</td>
<td>continuous</td>
<td>Guttman scale indicating moving plans</td>
</tr>
<tr>
<td>Dependent Variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_{11}$ Residential Mobility</td>
<td>dichotomous</td>
<td>movers coded as 1</td>
</tr>
</tbody>
</table>
order in which the variables enter the regression analysis. This is done so that the theoretically predetermined causal ordering of the variables can be tested. The theoretical path(s) for a dependent variable are tested first in the regression and then other independent variables are added working backward, from effect to more and more remote relationships until a fully recursive model is tested (Duncan, 1970). Residential mobility is the main dependent variable and then propensity to move, housing satisfaction, neighborhood satisfaction, etc. each become dependent variables as the theoretical relationships are tested back to the exogenous variables. Comparative evaluations are then made between the theoretical model and the fully recursive and reduced models. While it is recognized that causality cannot be empirically verified (Blalock, 1964), linear regression results can be interpreted as supportive of causal inferences.

Basically, three criteria are used for evaluating the linear regressions in the analysis. The first is the F-test for significance of the overall regression model. In each case, the computed F-value was compared with the tabular F-value for .05 level of significance. If the computed F-value was equal to or greater than the tabular F-value, the regression of the dependent variable on the independent variable(s) was considered statistically significant. The second evaluation criterion is the size of the squared multiple correlation coefficient ($R^2$) which is an indicator of how much variance in the dependent variable is explained by the independent variables. The third criterion is the significance and size of the regression coefficients. The partial
F-test for each coefficient was evaluated for statistical significance at the .05 level. Standardized partial regression coefficients (betas) were used so that the relative importance of the independent variables could be evaluated (Asher, 1976). The unstandardized coefficients, if needed, can be calculated from the standardized and the standard deviations of the variables given with the frequency distributions in the Appendix.

An errors-in-variables technique is used to make adjustments for measurement error and to aid in the clarification of the hypothesized relationships for propensity to move, housing satisfaction and neighborhood satisfaction set forth in the theoretical model. This technique is used only on the final portion of the model \((X_g, X_g, \text{and } X_{10})\) because measurement error variance (reliability estimated by coefficient alpha) which is used in the technique was not available for the other variables in the model.

In this particular application of the errors-in-variables technique, the assumption of random measurement error was made. The adjusted \(R^2\)'s can be interpreted as the amount of variation in the dependent variable explained by the "true" scores of the independent variables. By this technique, the relationships among the unobserved theoretical concepts are estimated rather than relationships among observed variables. In other words, if measurement error is eliminated, the true scores of the relationships between the concepts are estimated. The errors-in-variables estimate is an estimate of the theoretical structure, in that the coefficients estimate the relationships between the true scores
of the concepts (Warren et al., 1974). According to Bohrnstedt and Carter (1971), errors in measurement in the multivariate case may lead least squares to either overestimate or underestimate the coefficients. Therefore, this technique which adjusts for measurement error, allows for a more critical assessment of the influence of propensity to move, housing satisfaction and neighborhood satisfaction in the theoretical model. In this dissertation, the errors-in-variables technique is done by means of a computer program called Super Carp (Hidiroglou et al., 1978) developed at Iowa State University.

The final statistical procedure employed in this dissertation is a regression analysis using the recursive block technique (Blalock, 1969:71). This procedure is used to evaluate the influence on residential mobility of the exogenous variables as a separate set of variables and the endogenous variables as another separate set of variables. Through this analysis, the relative importance of the household characteristics (exogenous) can be evaluated as a set and the relative importance of the intervening housing related variables can be evaluated as a set. This technique which treats the variables as two sets is used to evaluate the overall interpretation of residential mobility as a housing adjustment process rather than a phenomenon based only on household characteristics.
CHAPTER IV ANALYSIS AND INTERPRETATION

Evaluation of Theoretical Model

The objective of this chapter is to empirically evaluate the hypothesized causal relationships among the variables that have been suggested by the theoretical model developed in Chapter II. The overall theoretical model is evaluated first and then the regression for each endogenous variable is discussed. The critical issue evaluated in this model is the incorporation of housing variables as intervening variables between characteristics of the household and subsequent mobility. Housing deficits, neighborhood quality, housing and neighborhood satisfaction, and propensity to move were delineated as the intervening variables in the causal model. Formally, the theoretical model is written:

\[
\begin{align*}
X_{11} &= f(X_{10}) \\
X_{10} &= f(X_9, X_8) \\
X_9 &= f(X_8, X_7) \\
X_8 &= f(X_6) \\
X_7 &= f(X_5...X_1) \\
X_6 &= f(X_5...X_1)
\end{align*}
\]

It is hypothesized that residential mobility \((X_{11})\) is caused by propensity to move \((X_{10})\), which in turn is caused by housing satisfaction \((X_9)\) and neighborhood satisfaction \((X_8)\). Housing satisfaction \((X_9)\) is hypothesized to be caused by neighborhood satisfaction \((X_8)\) and housing deficits \((X_7)\). Neighborhood satisfaction \((X_8)\) is influenced
by the neighborhood quality index \(X_6\). Finally, the household characteristics \(X_5\) through \(X_7\), which represent constraints under which the household is operating, are causally related to housing deficits \(X_7\) and neighborhood housing quality \(X_6\).

In the diagram of the path model (Figure 2), the arrows indicate relationships between variables. The standardized partial regression coefficients indicate the strength and direction of each relationship. The path diagram (and subsequent path diagrams) does not include the usual curved arrows representative of the noncausal correlations among the exogenous variables. These noncausal correlations have been omitted from the figures to simplify the presentations. The zero-order correlation matrix of all the variables is given in the Appendix. The highest correlation between any two exogenous variables is .36 and most exogenous correlations are below .25. With correlations this low, multicollinearity does not appear to be a problem among the exogenous variables.

The path model as presented in Figure 2 is used to represent the 16 hypothesized causal paths in the theoretical model. Analysis of the signs of the coefficients for the hypothesized causal relationships indicates that the directions of all the stated hypotheses are upheld. However, only 10 of the 16 hypothesized paths are statistically significant at the .05 level. Five of the 6 insignificant paths involve the exogenous variables. The causal relationships between the endogenous variables were all statistically significant except the relationship
*Significant at the .05 level.

Figure 2. Path diagram of theoretical model. (The values for the conventional curved arrows between pairs of exogenous variables (X₁ through X₅) representing noncausal relationships are given in the correlation matrix in the Appendix.)
between neighborhood satisfaction and propensity to move. The following hypothesized causal paths were supported:

\[
\begin{align*}
X_{11} &= f (X_{10}) \\
X_{10} &= f (X_9) \\
X_9 &= f (X_8, X_7) \\
X_8 &= f (X_6) \\
X_7 &= f (X_5, X_3, X_1) \\
X_6 &= f (X_5, X_2)
\end{align*}
\]

In terms of the hypotheses states in Chapter II, the following 10 hypotheses were upheld:

1. The greater the propensity to move, the greater the incidence of subsequent mobility.

2A. The lower the level of housing satisfaction, the greater the propensity to move.

3A. The higher the level of neighborhood satisfaction, the higher the level of housing satisfaction.

3B. The smaller the number of housing deficits, the higher the level of housing satisfaction.

4. The higher the quality of housing in the neighborhood, the higher the level of neighborhood satisfaction.

5A. The higher the household income, the smaller the number of housing deficits.

5C. The older the household head, the smaller the number of housing deficits.

5E. Male headed households have fewer housing deficits than do female headed households.

6B. The higher the education of the household head, the higher the quality of the neighborhood housing.

6E. Male headed households live in neighborhoods with higher quality housing than do female headed households.
The overall F-values for the regressions involved in testing the theoretical model were all statistically significant (Tables 3, 5, 7, 8, 9, and 10). However, evaluation of the residual variances in Figure 2 or the $R^2$'s in the tables indicate that generally small proportions of the variances of some of the endogenous variables were explained. The small $R^2$'s were somewhat expected, however, because many of the variables were limited to sociological factors and would not be expected to explain a large portion of variance in concepts that may also contain psychological and economic components. The large residuals indicate that there may be problems with both specification error and measurement error. Specification error means that one or more pertinent variables have been left out of the model or that variables in the model do not represent the concepts well. Measurement error means that the empirical indicators in the model are not reliable measures. Specification error and measurement error are discussed in greater detail when appropriate in the analysis of each endogenous variable.

Lack of support for the hypothesized relationship between neighborhood satisfaction and propensity to move does give support, however, to the idea that housing and neighborhood satisfaction should not be combined as one variable as has been done in some previous models (Speare, 1974). From this study, it appears that the housing and neighborhood satisfaction variables operate differently. Neighborhood satisfaction affects propensity to move only indirectly through housing satisfaction as hypothesized but does not effect propensity to move directly as does housing satisfaction.
The weakest area of the model appears to involve the paths from the exogenous variables to housing deficits and to the neighborhood quality index. It appears that the unique dimensions represented by the five household variables are not systematically associated with either the housing deficits or the neighborhood quality index variable. In other words, the household characteristics included in this model are not good predictors of the housing deficits or neighborhood quality index. The household characteristics are an operationalization of constraints as discussed in Chapter II. Apparently, the characteristics included in this model do not reflect the constraints operating on the household adequately. However, it can be concluded on the basis of the significant findings that the theoretical model is moderately well supported, especially in the latter portions of the model, from $X_6$ through $X_{11}$.

**Residential mobility**

A fully recursive multiple regression analysis of residential mobility was performed in five steps (hierarchical solutions). This was done to discover if any significant paths had been omitted from the theoretical model and to see if any of the significant paths in Figure 2 involved spuriousness. A spurious relationship appears to be meaningful but upon investigation is found to exist due to the fact that each of the variables are associated with another variable (Rosenberg, 1968; Simon, 1954). When using hierarchical solutions, spuriousness is noted
if a coefficient between two variables declines as antecedent variables are subsequently added to the regression analysis.

In the hierarchical inclusion regression technique, the variables are entered into the regression analysis in the causal order shown in Figure 1, proceeding from $X_{11}$ back toward the exogenous variables ($X_5 \ldots X_1$). In the regression analysis of residential mobility, the hypothesized influence of propensity to move on subsequent mobility was tested in the first regression step. Then in step two, the first immediate antecedent variable, housing satisfaction, entered into the regression analysis. Neighborhood satisfaction was added in the third step and housing deficits and the neighborhood quality index was added in the fourth step. In the fifth and final step the five household characteristics were added producing the fully recursive regression with results listed in Table 3. The reduced recursive model (Figure 3) was then developed from the final step of the fully recursive regression analysis.

Although the changes in coefficients in each regression step are not given in the table, some of the changes are discussed in order to gain further understanding of the relationships between the variables. Examination of the changes in the standardized regression coefficient (Beta) for propensity to move with each regression step indicated that the hypothesized causal path was the strongest of all independent variables until the fifth and final step in which the exogenous variables entered into the regression. Although propensity to move declined slightly as a predictor of residential mobility when each
Table 3. Regression analysis of residential mobility ($X_{11}$).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Theoretical Model</th>
<th>Reduced Recursive</th>
<th>Fully Recursive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>F</td>
<td>Beta</td>
</tr>
<tr>
<td>$X_{10}$ Propensity to Move</td>
<td>.413</td>
<td>69.62*</td>
<td>.271</td>
</tr>
<tr>
<td>$X_9$ Housing Satisfaction</td>
<td></td>
<td></td>
<td>-.048</td>
</tr>
<tr>
<td>$X_8$ Neighborhood Satisfaction</td>
<td></td>
<td></td>
<td>-.040</td>
</tr>
<tr>
<td>$X_7$ Housing Deficits</td>
<td>.196</td>
<td>17.66*</td>
<td>.195</td>
</tr>
<tr>
<td>$X_6$ Neighborhood Quality IDX</td>
<td></td>
<td></td>
<td>.014</td>
</tr>
<tr>
<td>$X_5$ Sex of Head</td>
<td></td>
<td></td>
<td>.078</td>
</tr>
<tr>
<td>$X_4$ Household Size</td>
<td>-.256</td>
<td>27.49*</td>
<td>-.277</td>
</tr>
<tr>
<td>$X_3$ Age of Head</td>
<td>-.310</td>
<td>35.48*</td>
<td>-.291</td>
</tr>
<tr>
<td>$X_2$ Education of Head</td>
<td></td>
<td></td>
<td>.013</td>
</tr>
<tr>
<td>$X_1$ Household Income</td>
<td></td>
<td></td>
<td>-.015</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.170</td>
<td>.314</td>
<td>.321</td>
</tr>
<tr>
<td>F</td>
<td>69.620</td>
<td>38.450</td>
<td>15.620</td>
</tr>
<tr>
<td>d.f.</td>
<td>1 + 339</td>
<td>4 + 336</td>
<td>10 + 330</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
Figure 3. Significant paths of fully recursive regression analysis of residential mobility. (The values for the conventional curved arrows between pairs of exogenous variables (X₁ through X₅) representing noncausal relationships are given in the correlation matrix in the Appendix.)
the antecedent variable was added in the second, third, and fourth steps, the Beta for propensity to move declined significantly in the fifth step. In this final step, two of the exogenous variables, age of head and household size, were statistically significant determinants of residential mobility and the Beta for propensity to move was reduced from .34 in the fourth regression step to .25 in the fifth regression step. It appears that the relationship between propensity to move and residential mobility is partially spurious with respect to household size and age of household head.

Housing satisfaction was also a statistically significant predictor of residential mobility in the second regression step along with propensity to move and remained significant in the third regression step when neighborhood satisfaction was included in the regression. In the fourth step, housing satisfaction dropped below the .05 level of significance when housing deficits and the neighborhood quality index were added into the analysis. Therefore, it can be concluded that the relationship between housing satisfaction and residential mobility that was evident in the second and third regression steps was a spurious relationship.

In order to more critically evaluate the relationship between housing satisfaction and residential mobility, the errors-in-variables technique was used on an abbreviated model \((X_{11}...X_{8})\) which resembled the third regression step in the fully recursive hierarchical solutions regression. This was done to evaluate the strength of the relationship that appeared significant in steps two and three of the regression analysis. The
results of the errors-in-variables solutions (Table 4) reinforce the conclusion of the fully recursive regression analysis in Table 3. When the variables are corrected for measurement error, housing satisfaction is not a significant determinant of residential mobility. Propensity to move serves as the intervening variable between housing satisfaction and residential mobility.

When housing deficits entered the analysis in the fourth ordinary least squares regression step as a significant determinant of residential mobility, the Beta for propensity to move did not decline very much. Therefore, it can be concluded that propensity to move only partially intervenes between housing deficits and residential mobility. This result is probably due to measurement error in the propensity to move variable and incomplete specification of the housing deficits variable.

The reduced recursive model for residential mobility is presented in Figure 3. The proportion of explained variance ($R^2$) in residential mobility increased from 17 percent with only the theoretical causal path from propensity to move to 31 percent with the inclusion of the three additional statistically significant paths (housing deficits, household size and age of household head) in the reduced recursive model (Table 3). Although the three other variables have significant effects upon mobility, the theoretically hypothesized propensity to move variable still remained a significant and relatively strong indicator of residential mobility.
Table 4. Ordinary least squares and errors-in-variables solutions to abbreviated model, residential mobility ($X_{11}$) dependent variable.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Ordinary Least Squares</th>
<th>Errors-In-Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>s.e.</td>
</tr>
<tr>
<td>$X_{10}$ Propensity to Move</td>
<td>.1630</td>
<td>.024</td>
</tr>
<tr>
<td>$X_9$ Housing Satisfaction</td>
<td>-.0041</td>
<td>.002</td>
</tr>
<tr>
<td>$X_8$ Neighborhood Satisfaction</td>
<td>-.0085</td>
<td>.012</td>
</tr>
<tr>
<td>Constant</td>
<td>.3730</td>
<td></td>
</tr>
</tbody>
</table>

*R^2*  

*Significant at the .05 level.*
In order for the causal role of propensity to move to be more strongly supported in the theoretical model, the effects of the exogenous variables, age of head and household size would have to be only indirect through housing deficits. The effect of housing deficits would be only indirect through housing satisfaction. The results from the fully recursive analysis indicate that either the propensity measure is inadequate as an intervening variable or that housing deficits, age of head, and household size have direct effects on residential mobility. It appears that both explanations are feasible. The errors-in-variables analysis enhanced the significance and Beta for propensity to move. Due to the indication that the relationship between propensity to move and residential mobility may be partially spurious when age of the household head and household size enter the analysis, the latter two variables probably do affect residential mobility directly.

Propensity to move

The fully recursive multiple regression analysis performed with propensity to move included four hierarchical solutions. The first step regressed propensity to move on housing satisfaction and the second step added neighborhood satisfaction. These steps tested the two theoretically hypothesized paths. The remaining steps added housing deficits and the neighborhood quality index in the third step and then the five household characteristics in the fourth and final step.

In the first regression step, housing satisfaction was established as a significant predictor of propensity to move and the Beta remained
relatively stable and large throughout the addition of all antecedent variables. Therefore, it can be concluded that the hypothesized relationship between housing satisfaction and the propensity to move does not appear to be spurious in this model.

Neighborhood satisfaction was not a significant indicator of propensity to move when the variable was first added in the second regression step with housing satisfaction. Therefore, the hypothesized causal path from neighborhood satisfaction to propensity to move was not statistically significant as was previously indicated in Figure 2. To more critically evaluate the relationship between neighborhood satisfaction and propensity to move, the errors-in-variables technique was used on an abbreviated model \( (X_{10} \ldots X_8) \) which resembled the second regression step in the fully recursive hierarchical regression. The results of the errors-in-variables solutions (Table 6) reinforce the conclusion of the least squares regression analysis for the theoretical model (Table 5). When corrected for measurement error, neighborhood satisfaction is not a significant determinant of propensity to move. At this point, it appears that neighborhood satisfaction does not directly effect propensity to move.

However, neighborhood satisfaction became a significant indicator in the third regression step and remained significant but with a relatively low Beta in the final regression step. Apparently, some of the antecedent variables served as suppressors of the neighborhood satisfaction variable. The significance level of neighborhood satisfaction is quite marginal in the reduced recursive model (Table 5) and the Beta
Table 5. Regression analysis of propensity to move (X10).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Theoretical Model</th>
<th>Reduced Recursive</th>
<th>Fully Recursive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>F</td>
<td>Beta</td>
</tr>
<tr>
<td>X9 Housing Satisfaction</td>
<td>-.372</td>
<td>51.43*</td>
<td>-.338</td>
</tr>
<tr>
<td>X8 Neighborhood Satisfaction</td>
<td>-.087</td>
<td>2.79</td>
<td>-.104</td>
</tr>
<tr>
<td>X7 Housing Deficits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X6 Neighborhood Quality IDX</td>
<td>.102</td>
<td>3.95*</td>
<td>.083</td>
</tr>
<tr>
<td>X5 Sex of Head</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X4 Household Size</td>
<td>-.129</td>
<td>6.31*</td>
<td>-.139</td>
</tr>
<tr>
<td>X3 Age of Head</td>
<td>-.245</td>
<td>21.38*</td>
<td>-.222</td>
</tr>
<tr>
<td>X2 Education of Head</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X1 Household Income</td>
<td>.159</td>
<td>10.31*</td>
<td>.147</td>
</tr>
<tr>
<td>R²</td>
<td>.165</td>
<td></td>
<td>.271</td>
</tr>
<tr>
<td>F</td>
<td>33.410</td>
<td></td>
<td>17.730</td>
</tr>
<tr>
<td>d.f.</td>
<td>2 + 338</td>
<td></td>
<td>7 + 333</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
Table 6. Ordinary least squares and errors-in-variables solutions to abbreviated model, propensity to move \((X_{10})\) dependent variable.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Ordinary Least Squares</th>
<th>Errors-In-Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>s.e.</td>
</tr>
<tr>
<td>Xg Housing Satisfaction</td>
<td>-.0289</td>
<td>.004</td>
</tr>
<tr>
<td>Xg Neighborhood Satisfaction</td>
<td>-.0459</td>
<td>.027</td>
</tr>
<tr>
<td>Constant</td>
<td>1.8530</td>
<td></td>
</tr>
<tr>
<td>(R^2)</td>
<td>.165</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
is one of the weakest of the significant determinants of propensity to move. Speculatively, it appears that if the fully recursive regression could be analyzed with error-in-variables solutions, the relationship between neighborhood satisfaction and propensity to move would be insignificant.

Also, in the final regression step of the fully recursive analysis, age of head entered as a relatively strong statistically significant determinant of propensity to move and household size and household income also entered as significantly related to propensity to move. When the fully recursive model was reduced (Table 5), the relationship between propensity to move and the neighborhood quality index also became significant at the .05 level.

Therefore, in the reduced recursive model (Figure 4), housing satisfaction appears as the strongest determinant of propensity to move and age of head is a relatively strong determinant. Household income, household size, neighborhood quality index, and neighborhood satisfaction are all relatively weak but significant determinants of the propensity to move variable. The $R^2$ for propensity to move increased from .165 with only the two theoretical causal paths from housing and neighborhood satisfaction to .27 with the four additional statistically significant independent variables in the reduced recursive analysis (Table 5). Due to the strength of the predictability by housing satisfaction throughout the hierarchical solutions, it is concluded that the hypothesized relationship between housing satisfaction and propensity to move is strongly upheld. However, due to the change in significance of the
Figure 4. Significant paths of fully recursive regression analysis of propensity to move. (The values for the conventional curved arrows between pairs of exogenous variables (X through Xg) representing noncausal relationships are given in the correlation matrix in the Appendix.)
neighborhood satisfaction variable as the regressions steps were concluded, the findings suggest that the relationship of neighborhood satisfaction to propensity to move is inconclusive.

In terms of the overall model, the results of the fully recursive regression analysis of propensity to move indicate that the housing satisfaction variable is a good predictor and intervenes well between housing deficits and propensity to move. However, neighborhood satisfaction is a very weak if not insignificant predictor of propensity to move and does not intervene well between neighborhood quality index and propensity to move. Based on the performance of the neighborhood satisfaction variable through the hierarchical regression steps and the abbreviated errors-in-variables analysis, the neighborhood satisfaction variable appears to be measured inadequately. The three exogeneous variables, age of head, household income and household size, appear to effect propensity to move directly.

**Housing satisfaction**

The fully recursive multiple regression analysis performed with housing satisfaction as the dependent variable included four hierarchical solutions. In the first step housing satisfaction was regressed on neighborhood satisfaction and in the second step housing deficits were added. The first two steps tested the two theoretically hypothesized paths that neighborhood satisfaction and housing deficits were determinants of housing satisfaction. In the third step the neighborhood quality index was added to the analysis and in the fourth step the five household characteristics were added.
Both of the hypothesized paths were strongly supported in the first two hierarchical solutions. When the rest of the variables (antecedent) were added, the Beta weights for neighborhood satisfaction and housing deficits did decrease slightly. Therefore, it appears that there was some spuriousness to the two hypothesized relationships and the Betas in the theoretical model (Table 7) are slightly inflated for the two hypothesized paths.

The neighborhood quality index variable entered the hierarchical solutions as a statistically significant variable in step three and remained a significant, although somewhat weak, determinant of housing satisfaction in the fourth regression step and in the reduced recursive model (Figure 5). It was not expected that the neighborhood quality index would be a significant determinant of housing satisfaction. This direct path to housing satisfaction further indicates that neighborhood satisfaction is not intervening well between neighborhood quality and housing satisfaction. This direct path could be due to measurement error in the neighborhood satisfaction variable as was evident in Tables 4 and 6. It could also be that both neighborhood satisfaction and the neighborhood quality index variables are not representing the concepts as well as expected. Speculatively, if the two measures could be improved, neighborhood satisfaction in the role as an intervening variable would probably receive more support from empirical analysis. Although neighborhood satisfaction does not intervene well between neighborhood quality and housing satisfaction, it is one of the
Table 7. Regression analysis of housing satisfaction ($X_g$).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Theoretical Model</th>
<th>Reduced Recursive</th>
<th>Fully Recursive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>F</td>
<td>Beta</td>
</tr>
<tr>
<td>$X_8$ Neighborhood Satisfaction</td>
<td>.258</td>
<td>28.96*</td>
<td>.201</td>
</tr>
<tr>
<td>$X_7$ Housing Deficits</td>
<td>-.378</td>
<td>61.82*</td>
<td>-.294</td>
</tr>
<tr>
<td>$X_6$ Neighborhood Quality IDX</td>
<td>.135</td>
<td>7.24*</td>
<td>.127</td>
</tr>
<tr>
<td>$X_5$ Sex of Head</td>
<td></td>
<td></td>
<td>.060</td>
</tr>
<tr>
<td>$X_4$ Household Size</td>
<td>-.117</td>
<td>5.88*</td>
<td>-.131</td>
</tr>
<tr>
<td>$X_3$ Age of Head</td>
<td>.253</td>
<td>24.64*</td>
<td>.263</td>
</tr>
<tr>
<td>$X_2$ Education of Head</td>
<td>.168</td>
<td>10.87*</td>
<td>.177</td>
</tr>
<tr>
<td>$X_1$ Household Income</td>
<td>.097</td>
<td>4.22*</td>
<td>.088</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.226</td>
<td>.346</td>
<td>.349</td>
</tr>
<tr>
<td>F</td>
<td>49.310</td>
<td>25.210</td>
<td>22.270</td>
</tr>
<tr>
<td>d.f.</td>
<td>2 + 338</td>
<td>7 + 333</td>
<td>8 + 332</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
Figure 5. Significant paths of fully recursive regression analysis of housing satisfaction. (The values for the conventional curved arrows between pairs of exogenous variables ($X_1$ through $X_5$) representing noncausal relationships are given in the correlation matrix in the Appendix.)
strongest determinants of housing satisfaction and remains relatively strong throughout the fully recursive analysis. In this instance, the neighborhood satisfaction variable performs well as one of the hypothesized determinants of housing satisfaction.

The housing deficits variable is the strongest determinant of housing satisfaction (Figure 5). However, it too is not intervening as well as expected in this analysis. If housing deficits had intervened as expected, none of the household characteristics would have influenced housing satisfaction directly. Age of head had a particularly strong direct effect on housing satisfaction (Table 7). The other exogenous variables, education of head, household size, and household income have relatively much weaker direct effects on housing satisfaction.

The $R^2$ for housing satisfaction increased from .226 for the theoretical model to .346 for the reduced recursive model (Table 7). Although the proportion of explained variance in housing satisfaction increased with the addition of five significant paths from antecedent variables in the reduced recursive model, the two hypothesized paths explained two-thirds of the variance when they were the only two variables in the model. Due to the strength of neighborhood satisfaction and housing deficits in the reduced recursive model, it is concluded that the hypothesized relationships to housing satisfaction are upheld. In terms of the overall model, the results of the fully recursive regression analysis of housing satisfaction indicate that housing deficits and neighborhood satisfaction as hypothesized are strong determinants.
of housing satisfaction but do not perform as well as expected in the role of intervening variables. In this analysis, neighborhood quality index, age of head, education of head, household size, and household income all affect housing satisfaction directly.

**Neighborhood satisfaction**

Three steps (hierarchical solutions) were used in the fully recursive regression analysis of neighborhood satisfaction. Neighborhood quality index which is the hypothesized determinant, was entered in the first step. The housing deficits variable was entered in the second step and the five household characteristics were entered in the third and final step.

In the first step, neighborhood quality index entered as a statistically significant determinant of neighborhood satisfaction and remained a relatively stable determinant throughout the fully recursive analysis (Table 8). This indicates that the hypothesized causal path between neighborhood quality index and neighborhood satisfaction is supported in this analysis.

The housing deficits scale, which entered the analysis in the second step, was not a significant determinant of neighborhood satisfaction. The housing deficits variable was not expected to be significantly related to neighborhood satisfaction because the housing deficits were not conceptualized as neighborhood factors. Age of head and sex of head entered also as significant determinants of neighborhood satisfaction in the recursive regression analysis (Figure 6). The $R^2$ was quite small
Table 8. Regression analysis of neighborhood satisfaction ($X_8$).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Theoretical Model</th>
<th>Reduced Recursive</th>
<th>Fully Recursive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>F</td>
<td>Beta</td>
</tr>
<tr>
<td>$X_7$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing Deficits</td>
<td>.008</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>$X_6$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood Quality IDX</td>
<td>.241</td>
<td>20.99*</td>
<td>.217</td>
</tr>
<tr>
<td>$X_5$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of Head</td>
<td>.153</td>
<td>7.95*</td>
<td>.147</td>
</tr>
<tr>
<td>$X_4$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Size</td>
<td>.043</td>
<td>.55</td>
<td></td>
</tr>
<tr>
<td>$X_3$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of Head</td>
<td>.105</td>
<td>3.93*</td>
<td>.140</td>
</tr>
<tr>
<td>$X_2$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education of Head</td>
<td>.058</td>
<td>.92</td>
<td></td>
</tr>
<tr>
<td>$X_1$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Income</td>
<td>.009</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.058</td>
<td>.086</td>
<td>.090</td>
</tr>
<tr>
<td>$F$</td>
<td>20.990</td>
<td>10.540</td>
<td>4.730</td>
</tr>
<tr>
<td>d.f.</td>
<td>1 + 339</td>
<td>3 + 337</td>
<td>7 + 333</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
Figure 6. Significant paths of fully recursive regression analysis of neighborhood satisfaction. (The values for the conventional curved arrows between pairs of exogenous variables (X₁ through X₅) representing noncausal relationships are given in the correlation matrix in the Appendix.)
(.058) for the theoretical model and did not improve much (.086) with the addition of the two significant exogenous variables (Table 8). This regression analysis is one of the weakest in the total model analysis.

The results for this fully recursive analysis of neighborhood satisfaction indicates that, not only could neighborhood satisfaction (and possibly neighborhood quality index) have measurement error and be operationalized poorly as was previously mentioned, but that the large residual (Figure 5) may indicate additional specification error. This means that one or more variables or dimensions of the concepts may be needed in the model to more fully explain neighborhood satisfaction. However, because neighborhood quality index is a significant determinant of neighborhood satisfaction, the model as specified is probably not incorrect but just incomplete.

**Housing deficits**

The fully recursive analysis of housing deficits is identical to the theoretical model (Table 9) because both employ the five household characteristics (exogenous variables) as the determinants of housing deficits. As indicated in the reduced recursive model (Figure 7), only three of the five hypothesized paths are statistically significant. Age of the household head, sex of the household head, and income of the household are significant determinants of housing deficits. It appears that older households, households with higher incomes, and male headed households tend to have fewer housing deficits than do other households.
Table 9. Regression analysis of housing deficits ($X_7$).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Theoretical Model$^a$</th>
<th>Reduced Recursive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>F</td>
</tr>
<tr>
<td>$X_5$ Sex of Head</td>
<td>-.171</td>
<td>9.13*</td>
</tr>
<tr>
<td>$X_4$ Household Size</td>
<td>-.012</td>
<td>.03</td>
</tr>
<tr>
<td>$X_3$ Age of Head</td>
<td>-.238</td>
<td>16.32*</td>
</tr>
<tr>
<td>$X_2$ Education of Head</td>
<td>-.068</td>
<td>1.45</td>
</tr>
<tr>
<td>$X_1$ Household Income</td>
<td>-.127</td>
<td>5.19*</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.087</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>6.410</td>
<td></td>
</tr>
<tr>
<td>d.f.</td>
<td>5 + 335</td>
<td></td>
</tr>
</tbody>
</table>

$^a$The theoretical model is identical to a fully recursive analysis.

*Significant at the .05 level.
Figure 7. Significant paths of fully recursive regression analysis of housing deficits and neighborhood quality index. (The values for the conventional curved arrows between pairs of exogenous variables (X₁ through X₅) representing noncausal relationships are given in the correlation matrix in the Appendix.)
The $R^2$'s (.087 for the theoretical and .083 for the reduced recursive) are very small which indicate specification error. The household characteristics as measured in this dissertation do not explain much of the variance in housing deficits. This is probably due to inadequate specification of the household characteristics as constraint variables which was discussed with the theoretical model earlier in this chapter.

**Neighborhood quality index**

The fully recursive analysis of housing deficits is also identical to the theoretical model (Table 10). As indicated in the reduced model (Figure 7), only two of the five hypothesized paths to neighborhood quality index are statistically significant. Education of the household head and sex of the household head are significant determinants of neighborhood quality index. Neighborhood quality index is the only endogenous variable that age of the household head has not affected directly. The $R^2$'s for neighborhood quality index (.187 for the theoretical and .175 for the reduced recursive) are quite small which indicates that specification error may also be prevalent here as it was with housing deficits. Here too, it appears there are problems with inadequate specification of the household characteristics and also possibly inadequate specification of the neighborhood variable representing neighborhood deficits. From the analysis, however, it can be concluded empirically that education of the head does influence the quality of the neighborhood in which one selects to live. It also
Table 10. Regression analysis of neighborhood quality index ($X_6$).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Theoretical Model&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Reduced Recursive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>$F$</td>
</tr>
<tr>
<td>$X_5$</td>
<td>.190</td>
<td>12.70*</td>
</tr>
<tr>
<td>Sex of Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_4$</td>
<td>.021</td>
<td>.15</td>
</tr>
<tr>
<td>Household Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_3$</td>
<td>.100</td>
<td>3.20</td>
</tr>
<tr>
<td>Age of Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_2$</td>
<td>.371</td>
<td>48.12*</td>
</tr>
<tr>
<td>Education of Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1$</td>
<td>.071</td>
<td>1.84</td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.187</td>
<td></td>
</tr>
<tr>
<td>$F$</td>
<td>15.430</td>
<td></td>
</tr>
<tr>
<td>d.f.</td>
<td>5 + 335</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>The theoretical model is identical to a fully recursive analysis.

*Significant at the .05 level.
appears that male headed households tend to live in neighborhoods with higher quality housing than do female headed households.

Evaluation of Intervening Variables

The final analysis technique employed in this dissertation is a regression analysis using the recursive block technique to evaluate the performance of the housing variables as determinants of residential mobility. This technique was used because three variables other than the hypothesized propensity to move had significant direct effects on residential mobility. The reduced recursive model from Figure 3 was used in this analysis because only the significant determinants of residential mobility need to be included. In the recursive block technique, the exogenous variables (age of head and household size) are one group or set of variables and the intervening variables (propensity to move and housing deficits) are the other group. The idea is to determine how much each of the sets contributes to the explained variation in the dependent variable, residential mobility.

Viewing residential mobility as caused by only household characteristics, 19.5 percent of the variance in residential mobility is explained in this analysis (Table 11). If residential mobility is viewed as caused by only the housing variables, 22 percent of the variance in residential mobility is explained by this analysis. The housing related variables added 11.9 percent more to the explained variance after the exogenous variables had been entered into the regression. The household characteristics added 9.4 percent when the
Table 11. Prediction of residential mobility by grouping intervening variables and exogenous variables.

<table>
<thead>
<tr>
<th>Predictor Groupings</th>
<th>Variance Explained by Grouping</th>
<th>Unique Variance Explained by Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>$F$</td>
</tr>
<tr>
<td>Intervening (Propensity and House Def.)</td>
<td>.220</td>
<td>47.64*</td>
</tr>
<tr>
<td>Exogenous (Age Head and HH Size)</td>
<td>.195</td>
<td>40.88*</td>
</tr>
<tr>
<td>Total variance explained ($R^2$)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This regression analysis involved the recursive block technique using the four variables from the reduced recursive analysis in Table 1.

bPercent of variance explained by each group of variables independently.

Additional variance explained after the other group had been entered into the regression analysis.

*Significant at the .05 level.
housing variables entered the regression first. With both sets of variables, 31.4 percent of the variance in residential mobility is explained.

It is concluded from the recursive block analysis that both household characteristics and housing variables are needed at this time to explain the variance in residential mobility. If the housing variables can be expanded and refined, they may become more effective as intervening variables. If this can be achieved, possibly only housing related factors would be needed to explain residential mobility. However, based on the analysis in this study, both household characteristics and housing variables are still needed to explain residential mobility. It appears that although the housing variables did not intervene as well as theorized, they did definitely contribute to the explanation of residential mobility and support the view that residential mobility is a housing adjustment process.
CHAPTER V SUMMARY AND IMPLICATIONS

The purpose of this chapter is to summarize the research conducted in this dissertation, to identify some of the limitations associated with the study, and to extract and discuss implications of the findings. In addition, recommendations for the future study of residential mobility as a housing adjustment process are made.

Summary

This dissertation is a theoretical explication and empirical examination of residential mobility as a housing adjustment process in which households adjust their housing to meet changing needs. The impetus underlying this study was the belief that housing deficits (deviations from normatively defined housing conditions) lead to housing dissatisfaction, which in turn leads to a propensity to move and subsequent mobility. The general objective of this research was to develop a better understanding of the conceptual and empirical nature of the housing factors involved in the process that produces residential mobility. The extent to which the general objective was achieved can be assessed by reviewing the research activities conducted in conjunction with the three specific research objectives stated in Chapter I.

Objective 1

The first objective stated was "to identify and explicate sociological constructs and concepts applicable to residential mobility." The general theoretical orientation for this study came from functional
analysis. The key aspect of functional analysis most applicable to this dissertation is that there are normatively defined social limits (cultural norms) within which humans operate. When behavior or life conditions deviate outside the limits, there is disequilibrium and stress and the means to regain equilibrium or reach a new equilibrium are sought. Steps within the equilibrium model were identified as 1) knowledge of the normatively defined limits, 2) recognition of deviations outside the limits, 3) stress as the result of the deviations, 4) conative assessment, and 5) engagement in meliorative behavior.

In this study, the equilibrium model was applied to residential mobility. In general terms, the theoretical issue was to assess the magnitude of the effect of housing norms on housing behavior. Housing behavior was viewed as being motivated by the desire for self-acceptance and acceptance from others. It was assumed that a household judged its own housing and the housing of others in terms of norms.

Relevant housing theory and research supportive of the equilibrium model of residential mobility was reviewed in Chapter II. Housing deficits are viewed as deviations from housing norms which can result in housing dissatisfaction. Dissatisfaction promotes a propensity to move which in turn leads to subsequent mobility.

In this study, housing norms are identified as the limits in the generalized equilibrium model. Deviations outside the limits are conceptualized as housing deficits. Housing deficits are defined as a gap between actual conditions and the conditions prescribed by the
housing norms. Stress as the result of the deviations is identified as dissatisfaction with the housing conditions. Dissatisfaction motivates the household to consider doing something about their situation (conative assessment). Alternatives could have been adaptive (changing the household's standards) or adjustment (changing the housing conditions). In this dissertation, only the adjustment alternative of residential mobility is considered which is conceptualized as the meliorative housing behavior. Constraints can enter into the housing adjustment model. Constraints can be intrafamilial, which affect the household's ability to solve problems and its predispositions, or extrafamilial, which represent factors outside of the household such as discrimination or supply and price of housing. The constraints applicable to the household and its ability to overcome them are viewed as influential on the outcome of the housing adjustment process. Constraints may affect the adjustment process at various points and ultimately impinge upon the household's ability to engage in residential mobility. In this study, the household characteristics (age, income, sex of head, education, and size) were conceptualized as some of the constraints applicable to the household.

The theoretical model developed and tested in this dissertation is a comparative static model and the empirical data are cross-sectional. To fully investigate the process involved in housing adjustment, longitudinal data that can be used to assess change over time are needed. In this study, only change from propensity to move to subsequent residential mobility is known. Therefore, this study is limited to
analyzing structural factors involved in the process rather than investigating the dynamics of the process.

Objective 2

The second objective stated in Chapter I was "to develop measures of housing factors involved in the process that produces residential mobility." Single measures were used for six variables and composite measures were used for five variables. The dependent variable, residential mobility, was a single dichotomous variable. All of the household characteristics were single continuous variables except for sex of the household head which was a single dichotomous variable. All of the single item measures were assumed to have little or no measurement error and no attempts were made to estimate or correct for the measurement error.

Measurement error was evaluated for three of the five composite variables. The measure for propensity to move was a three item Guttman scale which had acceptable scale statistics. Satisfaction was divided into two variables, housing satisfaction and neighborhood satisfaction. The housing satisfaction measure was a Likert-type scale containing six items weighted by importance factors. The neighborhood measure was also a Likert-type scale and contained three unweighted items. Both scales had good reliability evaluations. Estimates of error variance were developed for the propensity to move, housing satisfaction and neighborhood satisfaction variables and these were used in the errors-in-variables regression solutions which adjusted for measurement error and
estimated true score variance. The neighborhood quality index was obtained from another study and, therefore, the data for reliability analysis were not available. The housing deficits scale was an enumerative scale and reliability was not estimated.

In this dissertation, measurement error corrections were estimated where it seemed appropriate. To more fully investigate the measurement error and specification error in this model in the future, more composite and multiple measures could be developed. Extensive measurement error analysis would be more appropriate when the measures are expanded and refined. The adequacy of the measures as operationalizations of the concepts is discussed with the next objective.

Objective 3

The third and final objective stated in Chapter I was "to theoretically develop and empirically examine a causal model that focuses on housing deficits, neighborhood quality, housing and neighborhood satisfaction, and propensity to move as intervening variables between characteristics of the household and subsequent residential mobility."

Until recently, the study of determinants of residential mobility has been centered on the demographic and socio-economic characteristics of the household. In the 1970's the effects of intervening housing variables have begun to be incorporated into the analysis of residential mobility. Although the concepts used in this model have been studied in previous housing research, no study has tested the influences of
deficits, satisfaction, and propensity to move all in the same model as intervening variables on subsequent residential mobility.

Sixteen theoretical causal paths were hypothesized for the model. It was hypothesized that residential mobility was caused by propensity to move, which in turn was caused by housing satisfaction and neighborhood satisfaction. Housing satisfaction was hypothesized to be caused by neighborhood satisfaction and housing deficits. Neighborhood satisfaction was influenced by the neighborhood housing quality. The household characteristics were causally related to housing deficits and neighborhood housing quality.

Residential mobility, the dependent variable, was operationalized as a change of residence within the local city and surrounding county area. Residential mobility measured subsequent mobility in 1978, three years after the initial interview. The other concepts were measured in the 1975 interview. Propensity to move was operationalized as the level of motivation the household had in 1975 in terms of thinking, desiring, or expecting to move in the next year. Satisfaction was operationalized as two variables, housing satisfaction and neighborhood satisfaction. Deficits were operationalized as housing deficits and neighborhood quality index. The housing deficits measured how many deviations the household had from its expressed housing norms (tenure, structure-type, space, and expenditure). Neighborhood deficits were operationalized as a measure of the housing quality of the neighborhood.

Household characteristics were operationalized as age, sex, and education of the household head, and household size and income.
Household characteristics were given a dual role in this dissertation. The selection of these specific household characteristics were based on traditional use of these characteristics to predict residential mobility and on the desire for them to serve as control variables in the model. The second role of the household characteristics was that they represented constraints operating on the household that may impinge upon their housing adjustment behavior.

The data for the analysis were obtained from a stratified random sample of households in a small city in northcentral Iowa. The causal model was tested on a data set of 341 households. Ordinary least squares regression and path analysis procedures were utilized in testing the theoretical model. The theoretical paths were tested first and then a fully recursive model was tested to see if any significant paths were omitted from the theoretical model and if any of the significant theoretical paths involved spuriousness.

The findings from the empirical analysis were supportive of 10 of the 16 hypothesized paths in the theoretical model. The causal path between neighborhood satisfaction and propensity to move was not significant and five paths from housing characteristics to housing deficits and neighborhood quality index were not significant. However, it can be concluded on the basis of the significant findings that the theoretical model is moderately well-supported, especially the hypothesized relationships among the endogenous variables.

In regard to residential mobility, the dependent variable, the hypothesized path from propensity to move was strongly supported in the
test of the theoretical model. However, in the fully recursive analysis of residential mobility, it became evident when the household characteristics were included in the analysis, the interpretation of the theoretical relationship between propensity and mobility was somewhat spurious (the Beta was inflated in the theoretical model). In the reduced recursive model, 31 percent of the variance in residential mobility was explained by significant paths from propensity to move, housing deficits, age of household head, and household size. The lack of congruence between the time referent for propensity and mobility could have weakened the effect of propensity to move as a determinant of residential mobility. In future research, the time referents should be identical and probably one or two years.

Twenty-seven percent of the variance in propensity to move was significantly explained in the reduced recursive model by the hypothesized paths from housing satisfaction and neighborhood satisfaction and the nonhypothesized paths from neighborhood quality index, age of household head, and household size. In testing the theoretical model, neighborhood satisfaction was an insignificant determinant of propensity to move. An errors-in-variables solution on an abbreviated model which corrected for measurement error reinforced the theoretical finding. Therefore, in future research, housing satisfaction and neighborhood satisfaction should not be combined as one residential satisfaction variable. It appears that housing and neighborhood satisfaction have different effects on propensity to move.
The two hypothesized paths to housing satisfaction from housing deficits and neighborhood satisfaction were strongly supported in both the theoretical and the reduced recursive model. Also in the reduced recursive model, five non-hypothesized paths were significant (neighborhood quality index, household size, age and education of household head, and household income) and 34 percent of the variance in housing satisfaction was explained. Although neighborhood satisfaction was a strong determinant of housing satisfaction as hypothesized, the variable was not an adequate intervening variable between neighborhood quality index and housing satisfaction. The direct effect from neighborhood quality index to housing satisfaction was unexpected and implies measurement and/or specification error in the neighborhood variables.

Nine percent of the variance was explained in neighborhood satisfaction in the reduced recursive model. The hypothesized path from neighborhood quality index was significantly supported. Also two non-hypothesized paths were significant from sex of head and age of head to neighborhood satisfaction. Because so little of the variance in neighborhood satisfaction was explained, future research must involve better conceptualization and operationalization of the neighborhood variables in order to more clearly understand the relationships between them and with other housing variables.

Because only exogenous (household characteristics) could be determinants of housing deficits and neighborhood quality index, the variables in the analysis of the theoretical model and the fully recursive were
identical. Eight percent of the variance in housing deficits was significantly explained by paths from sex and age of head and household income. Two hypothesized paths from education of head and household size to housing deficits were insignificant.

Eighteen percent of the variance in neighborhood quality index was significantly explained by paths from sex and education of the household head. The hypothesized paths from age of head, household size and income to neighborhood quality index were not significant. The dimensions represented by the household characteristics were not well correlated with the housing deficits or the neighborhood quality index.

Because the deficit variables (housing deficits and neighborhood quality index) are significant determinants of other endogenous variables in this model, it appears that the household characteristics may be inadequate as indicators of constraints operating on the household. Permanent income rather than annual income would probably have been a better indicator of constraints. Expected household size rather than current household size may be a better indicator also. Age of head and household size may need to be combined in some way to better represent stage of family life cycle. Education of head and occupation status may need to be combined to give a better indicator of social status.

When the household characteristics were used as control variables, they had little effect on the theoretical paths that were found to be significant in the theoretical model. The exogenous variables reduced
the hypothesized strength of propensity to move as an indicator of residential mobility and slightly decreased the strength of neighborhood satisfaction and housing deficits as indicators of housing satisfaction. However, none of the relationships that were found significant in the theoretical model became insignificant in the fully recursive model when the control variables were included. In many cases however, the exogenous variables did have direct effects on the endogenous variables that were not hypothesized in the theoretical model. The most striking effects were the repeated unhypothesized direct effects of age of head and household size on the endogenous variables. It appears that age of head which was a particularly strong determinant throughout the model had independent direct effects. There appears to be some predisposition to act or not to act that is associated with age and affects the endogenous variables directly rather than through the intervening housing adjustment process. Although household size was also a strong unhypothesized determinant of some of the endogenous variables, it appears that this may be due to the uniqueness of the community. The housing supply, especially homes and apartments for large families, was quite limited. Therefore, the lack of adequate housing alternatives could constrain a family in propensity and residential decisions.

Implications
The findings of this study appear to support the idea that a model incorporating housing factors has explanatory power superior to models incorporating only household characteristics as determinants of
residential mobility. The findings also offer considerable support for the use of functional analysis (equilibrium model) in the study of residential mobility. The concepts and hypothesized relationships specified by the housing adjustment framework were supported in this analysis.

Propensity to move was found as a major determinant of residential mobility and as an important intervening variable between housing satisfaction and residential mobility. Housing satisfaction was supported as the important intervening variable between housing deficits and propensity to move. The present findings showed little support for neighborhood satisfaction as a direct determinant of propensity to move. Therefore, neighborhood satisfaction as a causal factor in residential mobility should be explored in more depth in the future. Also, neighborhood and housing satisfaction should continue to be used as two distinct concepts because their effects differ in this analysis. Housing deficits appeared to be strong indicators of housing satisfaction. However, the quality of housing characteristic of the neighborhood appeared to be a weak substitute for a neighborhood deficit. Neighborhood factors need to be studied more in the future and a deficit variable needs to be developed that represents the social as well as the physical aspects of the neighborhood.

The small amounts of variance explained in housing deficits, neighborhood quality index, and neighborhood satisfaction indicate that important variables have been omitted for the model. It is also clear from the findings of this study that the household characteristics are more than
determinants of deficits. Some of the characteristics, especially age of the household head, had direct effects to 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 to the factors in the housing adjustment process.

Overall, the findings generated from the empirical analysis of the causal model indicate that both household characteristics and housing factors were essential for predicting and explaining residential mobility. These findings should provide impetus for future theoretical and empirical research of residential mobility as a housing adjustment process.
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USBC, U. S. Bureau of the Census
USBC, U. S. Bureau of the Census

Useem, Ruth Hill, John Useem and Duane L. Gibson

Varady, D. P.

Warren, Richard D., Joan Keller White and Wayne A. Fuller

Warwick, Donald P. and Charles A. Lininger

Winter, Mary and Earl W. Morris
ACKNOWLEDGMENTS

The data for this dissertation were gathered as part of Project 2115 of the Iowa Agriculture and Home Economics Experiment Station, Iowa State University, Ames, Iowa. The research was funded in part by Title V of the Rural Development Act, the City of Fort Dodge, YOUR, Inc., and anonymous donors.

Special thanks are due to Dr. Earl W. Morris of Family Environment and Dr. Charles L. Mulford of Sociology, my major professors, whose guidance throughout my graduate program is greatly appreciated. My appreciation is also extended to Dr. Morris and Dr. Mary Winter for sharing their housing expertise and friendship.

A thank you is extended to the members of my committee, Dr. Ruth E. Deacon of Family Environment, Dr. James R. Prescott of Economics, and especially to Dr. Richard D. Warren of Sociology for his guidance in the analysis of the data.

In particular, I would like to thank my husband, Stan, and our daughters, Andra and Heather, for their love, patience and understanding. My appreciation is also extended to my family and friends for their encouragement and support. My graduate program has been a truly rewarding experience.
**APPENDIX**

Descriptive Statistics for Variables

Table A-1. Residential mobility \((X_{11})\) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Relative (%)</td>
</tr>
<tr>
<td>0 did not move</td>
<td>236</td>
<td>69.2</td>
</tr>
<tr>
<td>1 moved within 6 county area</td>
<td>105</td>
<td>30.8</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = .308  
Actual range = 0 to 1  
Skewness = .84  
Standard deviation = .46  
Kurtosis = -1.31

Table A-2. Propensity to move \((X_{10})\) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Relative (%)</td>
</tr>
<tr>
<td>0</td>
<td>200</td>
<td>58.7</td>
</tr>
<tr>
<td>1</td>
<td>74</td>
<td>21.7</td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>8.5</td>
</tr>
<tr>
<td>3</td>
<td>38</td>
<td>11.1</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = .721  
Actual range = 0 to 3  
Skewness = 1.21  
Standard deviation = 1.02  
Kurtosis = .16
Table A-3. Housing satisfaction ($X_9$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th>Absolute</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 0</td>
<td></td>
<td>18</td>
<td>5.3</td>
</tr>
<tr>
<td>0 - 4</td>
<td></td>
<td>18</td>
<td>5.3</td>
</tr>
<tr>
<td>5 - 9</td>
<td></td>
<td>18</td>
<td>5.3</td>
</tr>
<tr>
<td>10 - 14</td>
<td></td>
<td>31</td>
<td>9.1</td>
</tr>
<tr>
<td>15 - 19</td>
<td></td>
<td>52</td>
<td>15.2</td>
</tr>
<tr>
<td>20 - 24</td>
<td></td>
<td>83</td>
<td>24.3</td>
</tr>
<tr>
<td>25 - 29</td>
<td></td>
<td>53</td>
<td>15.5</td>
</tr>
<tr>
<td>30 - 34</td>
<td></td>
<td>28</td>
<td>8.2</td>
</tr>
<tr>
<td>35 - 39</td>
<td></td>
<td>24</td>
<td>7.0</td>
</tr>
<tr>
<td>40 and above</td>
<td></td>
<td>16</td>
<td>4.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = 20.270  Actual range = -44 to 48  Skewness = -1.16
Standard deviation = 13.15  Kurtosis = 3.46
Table A-4. Neighborhood satisfaction ($X_8$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th>Absolute</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9</td>
<td></td>
<td>34</td>
<td>10.0</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>36</td>
<td>10.6</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>34</td>
<td>10.0</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>127</td>
<td>37.2</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>44</td>
<td>12.8</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>34</td>
<td>10.0</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>32</td>
<td>9.4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = 11.897    Actual range = 3 to 15    Skewness = -0.87

Standard deviation = 1.93    Kurtosis = 2.18
Table A-5. Housing deficits ($X_7$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Relative (%)</td>
</tr>
<tr>
<td>0 no deficits</td>
<td>189</td>
<td>55.4</td>
</tr>
<tr>
<td>1</td>
<td>93</td>
<td>27.3</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>9.7</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
<td>7.0</td>
</tr>
<tr>
<td>4 deficits</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = .701  
Actual range = 0 to 4  
Skewness = 1.30  
Standard deviation = .95  
Kurtosis = .86  

Table A-6. Percentage distribution of specific deficits in the housing deficits index.

<table>
<thead>
<tr>
<th>Specific Deficit</th>
<th>% of Households With Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>21.7</td>
</tr>
<tr>
<td>Structure-type</td>
<td>15.2</td>
</tr>
<tr>
<td>Bedroom</td>
<td>16.7</td>
</tr>
<tr>
<td>Expenditure</td>
<td>16.4</td>
</tr>
</tbody>
</table>
Table A-7. Neighborhood quality index ($X_g$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th>Absolute</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 50</td>
<td></td>
<td>47</td>
<td>13.8</td>
</tr>
<tr>
<td>50 - 59</td>
<td></td>
<td>21</td>
<td>6.2</td>
</tr>
<tr>
<td>60 - 69</td>
<td></td>
<td>155</td>
<td>45.5</td>
</tr>
<tr>
<td>70 - 79</td>
<td></td>
<td>47</td>
<td>13.8</td>
</tr>
<tr>
<td>80 - 89</td>
<td></td>
<td>38</td>
<td>11.1</td>
</tr>
<tr>
<td>90 and above</td>
<td></td>
<td>33</td>
<td>9.6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = 67.32   Actual range = 31 to 98   Skewness = -.23
Standard deviation = 17.17   Kurtosis = -.11
Table A-8. Sex of head \((X_5)\) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Relative (%)</td>
<td></td>
</tr>
<tr>
<td>0 female</td>
<td>90</td>
<td>26.4</td>
<td></td>
</tr>
<tr>
<td>1 male</td>
<td>251</td>
<td>73.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Mean = .736

Actual range = 0 to 1

Skewness = -1.08

Standard deviation = .44

Kurtosis = -.85

Table A-9. Household size \((X_4)\) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Relative (%)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>78</td>
<td>22.9</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>117</td>
<td>34.3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>45</td>
<td>13.2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>10.6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>36</td>
<td>10.6</td>
<td></td>
</tr>
<tr>
<td>6 and above</td>
<td>29</td>
<td>8.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Mean = 2.86

Absolute range = 1 to 10

Skewness = 1.29

Standard deviation = 1.82

Kurtosis = 1.64
Table A-10. Age of head ($X_3$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 30</td>
<td>61</td>
<td>17.9</td>
</tr>
<tr>
<td>30 - 39</td>
<td>50</td>
<td>14.7</td>
</tr>
<tr>
<td>40 - 49</td>
<td>58</td>
<td>17.0</td>
</tr>
<tr>
<td>50 - 59</td>
<td>63</td>
<td>18.4</td>
</tr>
<tr>
<td>60 - 69</td>
<td>51</td>
<td>15.0</td>
</tr>
<tr>
<td>70 - 79</td>
<td>58</td>
<td>17.0</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = 49.76  
Actual Range = 17 to 86  
Skewness = .137  
Standard Deviation = 18.13  
Kurtosis = -1.03

Table A-11. Education of head ($X_2$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 12 years</td>
<td>111</td>
<td>32.6</td>
</tr>
<tr>
<td>12 years</td>
<td>122</td>
<td>35.8</td>
</tr>
<tr>
<td>more than 12 years</td>
<td>108</td>
<td>31.6</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mean = 11.839  
Actual Range = 2 to 20  
Skewness = -.215  
Standard Deviation = 2.91  
Kurtosis = .29
Table A-12. Total household income for 1974 ($X_1$) frequency distribution.

<table>
<thead>
<tr>
<th>Variable Values</th>
<th>Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Relative (%)</td>
</tr>
<tr>
<td>less than $2,000</td>
<td>12</td>
<td>3.5</td>
</tr>
<tr>
<td>$2,000 - 3,999</td>
<td>42</td>
<td>12.3</td>
</tr>
<tr>
<td>$4,000 - 5,999</td>
<td>31</td>
<td>9.1</td>
</tr>
<tr>
<td>$6,000 - 7,999</td>
<td>35</td>
<td>10.3</td>
</tr>
<tr>
<td>$8,000 - 9,999</td>
<td>29</td>
<td>8.5</td>
</tr>
<tr>
<td>$10,000 - 11,999</td>
<td>29</td>
<td>8.5</td>
</tr>
<tr>
<td>$12,000 - 13,999</td>
<td>41</td>
<td>12.0</td>
</tr>
<tr>
<td>$14,000 - 15,999</td>
<td>32</td>
<td>9.3</td>
</tr>
<tr>
<td>$16,000 - 17,999</td>
<td>23</td>
<td>6.7</td>
</tr>
<tr>
<td>$18,000 - 19,999</td>
<td>20</td>
<td>5.8</td>
</tr>
<tr>
<td>$20,000 - 29,000</td>
<td>35</td>
<td>10.3</td>
</tr>
<tr>
<td>$30,000 and above</td>
<td>12</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>341</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Mean = 12,914  
Actual Range = 500 to 99,800  
Skewness = 4.34  
Standard Deviation = 12,383  
Kurtosis = 26.3
Reliability Assessments of Scales

Table A-13. Reliability assessment of the propensity to move scale.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Thought about moving</td>
<td>.413</td>
<td>.493</td>
<td>.555</td>
<td>.817</td>
</tr>
<tr>
<td>2 Desire to move next year</td>
<td>.191</td>
<td>.393</td>
<td>.735</td>
<td>.569</td>
</tr>
<tr>
<td>3 Expect to move next year</td>
<td>.117</td>
<td>.322</td>
<td>.623</td>
<td>.721</td>
</tr>
</tbody>
</table>

Alpha = .778
Standardized Item Alpha = .801

Gutman Scale Analysis:
Coefficient of Reproducibility = .996
Minimum Marginal Reproducibility = .760
Percent Improvement = .237
Coefficient of Scalability = .984
### Table A-14. Reliability assessment of the housing satisfaction scale.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tenure</td>
<td>3.54</td>
<td>3.95</td>
<td>.342</td>
<td>.762</td>
</tr>
<tr>
<td>2 Structure-type</td>
<td>4.08</td>
<td>3.64</td>
<td>.485</td>
<td>.714</td>
</tr>
<tr>
<td>3 Number bedrooms</td>
<td>3.23</td>
<td>3.15</td>
<td>.457</td>
<td>.720</td>
</tr>
<tr>
<td>4 Physical condition dwelling</td>
<td>3.23</td>
<td>3.34</td>
<td>.589</td>
<td>.683</td>
</tr>
<tr>
<td>5 Style-design dwelling</td>
<td>3.07</td>
<td>2.81</td>
<td>.621</td>
<td>.682</td>
</tr>
<tr>
<td>6 Image of dwelling</td>
<td>3.11</td>
<td>2.70</td>
<td>.503</td>
<td>.711</td>
</tr>
</tbody>
</table>

Alpha = .748  
Standardized Item Alpha = .763

### Table A-15. Reliability assessment of the neighborhood satisfaction scale.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Neighborhood people</td>
<td>4.13</td>
<td>.786</td>
<td>.610</td>
<td>.582</td>
</tr>
<tr>
<td>2 Neighborhood children</td>
<td>3.88</td>
<td>.781</td>
<td>.538</td>
<td>.667</td>
</tr>
<tr>
<td>3 Conditions neighborhood housing</td>
<td>3.88</td>
<td>.826</td>
<td>.522</td>
<td>.688</td>
</tr>
</tbody>
</table>

Alpha = .733  
Standardized Item Alpha = .734
Zero-order Correlation Matrix
Table A-16. Zero-order correlation matrix.

<table>
<thead>
<tr>
<th></th>
<th>$X_{11}$</th>
<th>$X_{10}$</th>
<th>$X_9$</th>
<th>$X_8$</th>
<th>$X_7$</th>
<th>$X_6$</th>
<th>$X_5$</th>
<th>$X_4$</th>
<th>$X_3$</th>
<th>$X_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_{11}$ Res. Mobility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_{10}$ Propensity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_9$ House Sat.</td>
<td>-0.269*</td>
<td></td>
<td>-0.398*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_8$ Neigh. Sat.</td>
<td>-0.139*</td>
<td>-0.195*</td>
<td></td>
<td>0.290*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_7$ House Def.</td>
<td>0.311*</td>
<td>0.230*</td>
<td>-0.400*</td>
<td>-0.084</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_6$ Neigh. IDX</td>
<td>-0.045</td>
<td>-0.007</td>
<td>0.300*</td>
<td>0.241*</td>
<td>-0.218*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_5$ Sex Head</td>
<td>0.010</td>
<td>0.026</td>
<td>0.104</td>
<td>0.178*</td>
<td>-0.161*</td>
<td>0.214*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_4$ HH Size</td>
<td>-0.137*</td>
<td>0.036</td>
<td>-0.130*</td>
<td>0.073</td>
<td>-0.014</td>
<td>0.115*</td>
<td>0.320*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_3$ Age Head</td>
<td>-0.342*</td>
<td>-0.342*</td>
<td>0.275*</td>
<td>0.058</td>
<td>-0.159*</td>
<td>-0.077</td>
<td>-0.199*</td>
<td>0.360*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_2$ Ed. Head</td>
<td>0.079</td>
<td>0.102</td>
<td>0.173*</td>
<td>0.101</td>
<td>-0.034</td>
<td>0.370*</td>
<td>0.054</td>
<td>0.149*</td>
<td>0.326*</td>
<td></td>
</tr>
<tr>
<td>$X_1$ Income</td>
<td>-0.015</td>
<td>0.110*</td>
<td>0.170*</td>
<td>0.085</td>
<td>-0.153*</td>
<td>0.200*</td>
<td>0.241*</td>
<td>0.190*</td>
<td>-0.143*</td>
<td>0.252*</td>
</tr>
</tbody>
</table>

*Significant at the .05 level or higher.
Questionnaire Items

RESIDENTIAL MOBILITY

Q-1 Are you living in the same dwelling that you lived in 3 years ago? (the same address as above)?

1 YES
2 NO, PLEASE GIVE PRESENT ADDRESS BELOW

Q-2 When did you move into your current dwelling?

MONTH ________________ YEAR _______
PROPENSITY TO MOVE

134. Now, have you ever thought about moving from your present residence?
   0 no
   1 yes

184. Do you have any desire to move in the next year?
   0 no
   1 yes

185. Do you expect to move in the next year?
   0 no
   1 yes
HOUSING SATISFACTION

43. Are you satisfied with the type of building or structure type you are living in?

___ 2 very satisfied with present structure type
___ 1 satisfied with present structure type
___ 0 prefer a different type of structure
(specify) ____________________________

44. How important is the type of building or structure type to you and your family?

___ 1 very important
___ 2 important
___ 3 unimportant
___ 4 very unimportant

72.(a) Are you satisfied with being a home owner right now or would you rather be a renter?

___ 0 prefer to be a renter
___ 1 satisfied with ownership
___ 2 very satisfied with ownership

72.(b) How important is being a home owner to you and your family?

___ 1 very important
___ 2 important
___ 3 unimportant
___ 4 very unimportant

82. Are you satisfied with being a renter right now or would you rather own your own home?

___ 0 prefer to own
___ 1 satisfied with renting
___ 2 very satisfied with renting

82.(b) How important is being a renter to you and your family?

___ 1 very important
___ 2 important
___ 3 unimportant
___ 4 very unimportant
Please indicate your feelings about your present situation with one of the following answers: are you satisfied or dissatisfied, (are you very satisfied) (are you very dissatisfied).

1. very dissatisfied
2. dissatisfied
3. satisfied
4. very satisfied

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

156. The number of bedrooms you have

162. The physical condition of your housing

164. The style or design of your house

165. The image your housing gives to others

Please indicate the importance you feel about these features of your housing with one of the following answers:

1 Very unimportant
2 unimportant
3 important
4 very important

GO BACK TO QUESTION 155 AND REREAD THROUGH QUESTION 172 USING IMPORTANCE SCALE.
How do you feel about the following aspects of your neighborhood?

<table>
<thead>
<tr>
<th></th>
<th>1 Dislike very much</th>
<th>2 Dislike</th>
<th>3 Doesn't matter</th>
<th>4 Like</th>
<th>5 Like very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>146. Neighbors and neighborhood people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>147. Neighborhood children</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>148. Conditions of the other housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
116. What do you think would be the best ownership or rental arrangement for your family?

   ____ 1 conventional ownership
   ____ 2 condominium ownership
   ____ 3 cooperative ownership
   ____ 4 rental

117. What do you think would be the best kind of housing for your family right now? (type of structure)

   ____ 1 single family house
   ____ 2 duplex
   ____ 3 multiple dwelling (three or more units)
   ____ 4 rowhouse or townhouse
   ____ 5 mobile home

118. What percentage of your income do you think your family should spend on housing each month? (rent plus utilities; or mortgage payment, property taxes and insurance plus utilities)

   ____ %

119. How many bedrooms do you feel your family needs right now?

   ____ (number)

Now I would like to know how many rooms you have of the different types in this dwelling unit.

   8. **Bedrooms**

   **NUMBER**

39. Which of the following best describes this building? (include all apartments, flats, etc. even if vacant)

   ____ 1 A one-family house detached from any other house
   ____ 2 A one-family house attached to one or more other houses (a rowhouse or townhouse)
   ____ 3 A building with two or more apartments
   ____ 4 A mobile home

60. Do you own or rent this home?

   ____ 1 own
   ____ 2 rent
   ____ 3 live here free
67. What is the amount of your house payment?
   $_____ 

73. How much is your electric and gas bill in the average winter month?
   $_____ 

74. How much is your electric and gas bill in the average summer month?
   $_____ 

75. How much is your fuel bill (except gas) during the average winter month?
   $_____ 

76. How much is your fuel bill (except gas) during the average summer month?
   $_____ 

77. How much is your water and sewer bill each month?
   $_____ 888 included in lot rent 

80. How much is your rent per payment period?
   $_____ 

83. Is your gas and electricity included in your rent?
   0 no
   1 yes

84. (IF NO) How much do you pay each month?
   $_____ 

85. Is your heating fuel (except gas) included in your rent?
   0 no
   1 yes

86. (IF NO) How much do you pay each month?
   $_____
87. Is your water and sewer bill included in your rent?

   0 no
   1 yes

88. How much do you pay each month?

   $

Now we would like you to think about what you spent for living last year. What would you estimate your 1974 expenditures to be for the following items?

<table>
<thead>
<tr>
<th>INSURANCE</th>
<th>monthly payments</th>
<th>quarterly payments</th>
<th>6-month payments</th>
<th>yearly payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>266. Renter's or Home Owner's</td>
<td>$ or $ or $ or $</td>
<td>$ or $ or $ or $</td>
<td>$ or $ or $ or $</td>
<td>$ or $ or $ or $</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TAXES</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>271. Real Estate and personal property</td>
<td>$ or $</td>
<td>$ or $</td>
<td>$ or $</td>
<td>$ or $</td>
</tr>
</tbody>
</table>
NEIGHBORHOOD QUALITY INDEX

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>Satisfactory</th>
<th>Fair&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Poor&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Substandard&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Index&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>7</td>
<td>70</td>
<td>144</td>
<td>102</td>
<td>31</td>
</tr>
<tr>
<td>Cooper</td>
<td>681</td>
<td>30</td>
<td>4</td>
<td>0</td>
<td>98</td>
</tr>
<tr>
<td>Crossroads</td>
<td>60</td>
<td>43</td>
<td>6</td>
<td>2</td>
<td>83</td>
</tr>
<tr>
<td>Duncombe</td>
<td>458</td>
<td>708</td>
<td>86</td>
<td>10</td>
<td>78</td>
</tr>
<tr>
<td>East Lawn</td>
<td>10</td>
<td>88</td>
<td>94</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>Fairview</td>
<td>79</td>
<td>664</td>
<td>204</td>
<td>30</td>
<td>62</td>
</tr>
<tr>
<td>Hillcrest</td>
<td>58</td>
<td>179</td>
<td>116</td>
<td>81</td>
<td>50</td>
</tr>
<tr>
<td>Knollcrest</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Lincoln</td>
<td>149</td>
<td>594</td>
<td>161</td>
<td>27</td>
<td>66</td>
</tr>
<tr>
<td>Linwood</td>
<td>84</td>
<td>25</td>
<td>5</td>
<td>4</td>
<td>87</td>
</tr>
<tr>
<td>Loomis Park</td>
<td>439</td>
<td>231</td>
<td>47</td>
<td>9</td>
<td>85</td>
</tr>
<tr>
<td>Oleson Park</td>
<td>181</td>
<td>754</td>
<td>226</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>Northwoods</td>
<td>113</td>
<td>4</td>
<td>5</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Pleasant Valley-</td>
<td>31</td>
<td>168</td>
<td>149</td>
<td>71</td>
<td>46</td>
</tr>
<tr>
<td>Coleman</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Riverside</td>
<td>130</td>
<td>295</td>
<td>118</td>
<td>19</td>
<td>66</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,493</td>
<td>3,854</td>
<td>1,365</td>
<td>435</td>
<td>69</td>
</tr>
</tbody>
</table>

<sup>a</sup> "Fair" - Needs minor repairs.

<sup>b</sup> "Poor" - Needs major repairs.

<sup>c</sup> "Substandard" - Should be demolished.

<sup>d</sup> Index derived by multiplying "satisfactory" by 100, "fair" by 70, "poor" by 30, "substandard" by 0, and dividing the total by the number of structures.

Table A-17. Condition of Residential Structures by Neighborhood (Harland Bartholomew and Associates, 1970:50.)