NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT **81**

MOVING BEHAVIOR AND RESIDENTIAL CHOICE

A NATIONAL SURVEY

HIGHWAY RESEARCH BOARD
NATIONAL RESEARCH COUNCIL
NATIONAL ACADEMY OF SCIENCES—NATIONAL ACADEMY OF ENGINEERING

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

In recognition of these needs, the highway administrators of the American Association of State Highway Officials initiated in 1962 an objective national highway research program employing modern scientific techniques. This program is supported on a continuing basis by Highway Planning and Research funds from participating member states of the Association and it receives the full cooperation and support of the Bureau of Public Roads, United States Department of Transportation.

The Highway Research Board of the National Academy of Sciences-National Research Council was requested by the Association to administer the research program because of the Board's recognized objectivity and understanding of modern research practices. The Board is uniquely suited for this purpose as: it maintains an extensive committee structure from which authorities on any highway transportation subject may be drawn; it possesses avenues of communications and cooperation with federal, state, and local governmental agencies, universities, and industry; its relationship to its parent organization, the National Academy of Sciences, a private, non-profit institution, is an insurance of objectivity; it maintains a full-time research correlation staff of specialists in highway transportation matters to bring the findings of research directly to those who are in a position to use them.

The program is developed on the basis of research needs identified by chief administrators of the highway departments and by committees of AASHO. Each year, specific areas of research needs to be included in the program are proposed to the Academy and the Board by the American Association of State Highway Officials. Research projects to fulfill these needs are defined by the Board, and qualified research agencies are selected from those that have submitted proposals. Administration and surveillance of research contracts are responsibilities of the Academy and its Highway Research Board.

The needs for highway research are many, and the National Cooperative Highway Research Program can make significant contributions to the solution of highway transportation problems of mutual concern to many responsible groups. The program, however, is intended to complement rather than to substitute for or duplicate other highway research programs.

FOREWORD

By Staff

Highway Research Board

This report will be of particular interest to urban transportation analysts and city planners. From interviews of a representative sample of some 1,500 households in various metropolitan areas in the United States, logical relationships were developed for desired home types, price ranges, travel access mixes, and living qualities. The results of this research contribute to the possible development of a residential allocation prediction model by describing the significant elements which should be considered in determining individual preferences for dwelling types and environments.

Residential areas of different degrees of development density influence the demand for transportation facilities in different ways. In forecasting the future demand of transportation, therefore, it is imperative that the future density of land development in new residential areas be projected. That this may be done with a reasonable degree of confidence, it is essential that there be a better understanding of what consumer preferences for housing accommodations are today.

To probe individual preferences and value systems, the University of North Carolina researchers developed and tested a questionnaire which was to apply to all urban areas in the United States. This survey instrument was carefully designed to provide information for testing specific hypotheses about household behavior, as well as providing a profile of current behavior.

The National Opinion Research Center of the University of Chicago was retained to conduct hour-long interviews during October and November 1966 for a sample of approximately 1,500 urban households. The results from this nationwide survey were coded and recorded on magnetic computer tape sent to the University of North Carolina for detailed statistical analyses and interpretation.

This report presents the findings from the nationwide survey with regard to the many varied and interrelated factors which influence decisions about moving and the selection of a place of residence. Drawing on the many analyses that were conducted, suggestions were made for the elements which must be considered in a model of residential mobility and choice. The researchers particularly emphasize, however, that the survey was inadequate for the development of a detailed specific model or models of residential allocation, and they suggest additional research necessary to the development and testing of adequate residential location prediction models.

Continuation research was initiated to extend the project reported here through a follow-up of the original respondents and dwelling units. In September 1969 the researchers began the task of locating and reinterviewing all original respondents, as well as all households presently living in housing units vacated by out-movers of the original sample. This second-wave survey, again conducted by the National Opinion Research Center, is being funded by the National Science Foundation.

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SUMMARY

This study is concerned with consumer behavior in the residential development process and focuses on both the mobility of households and on the processes of housing and neighborhood choice. Using information obtained from a representative sample survey of households in metropolitan areas across the United States, the study identifies key variables underlying the behavior of households with respect to both residential mobility and residential choice. A principal assumption underlying this study is that an understanding of which households will move in a given time period, where they will move, and why, is of crucial importance in designing adequate residential land use models. Thus, emphasis is placed on the marginal change, the increment of actual household mobility and choice in a given time period, rather than on change in the whole residential pattern.

The study gives primary emphasis to identifying housing and neighborhood preferences as reflected in the facilities and living qualities which respondents sought when they began their housing search before they moved to their present accommodations, as reflected in their attitudes toward housing and neighborhood environment, and as determined from their satisfactions with the housing they chose and are now occupying. Thus, this study attempts to get at housing preferences through analysis of the households' attitudes and their choices in the housing market. It has become increasingly clear that in addition to budget and family-size factors, there are a number of attitudinal and other factors which have a pronounced effect on the willingness of urban households to move and on the way in which they make housing choices.

The household's decision to move places it in the housing market and its selection of a dwelling takes the household out of the market. Intervening between these two decisions is the residential search process—the looking at, evaluating, and accepting or rejecting available dwellings.

Households entering the market may be distinguished by the degree of commitment involved in their decision to move and this in turn may affect their search process and the subsequent residential choice decision. The decision may be voluntary or involuntary in the sense that the decision is made by the household or, in effect, made for them. Also, the decision is typically not based primarily on housing considerations but on other factors which in turn require that the household seek a different dwelling.

The data for this study consist of interviews with members of 1,476 households in 43 metropolitan areas across the United States. The interviews, each about one hour in length, provided information on each household's current and previous place of residence, the household's choice of its current residence, accessibility opportunities and preferences of the household, dwelling unit and neighborhood preferences of the household, future moving intentions of the household, and household attitudes toward factors relevant to residential mobility and housing choice. The survey sample is based on a standard multistage probability sample to the level of small areas containing one or more city blocks. At the block level,

quota sampling was used to obtain the desired representation of heads of households, spouses, and other individuals and an appropriate proportion of respondents by age and employment status.

Residential Preferences

The national survey indicates that in recent intrametropolitan moves urban households tend to shift toward ownership, a single-family house, an increase in number of rooms, and an increase in housing costs. The tenure change for previous renters was one that was strongly related to household characteristics. Over 50 percent of all the previous renters in the sample changed to ownership in their most recent move.

Analysis of housing and neighborhood preferences expressed in the survey suggests that in the aggregate metropolitan households prefer:

1. Better neighborhood quality with either a less desirable housing unit or less accessible location over a less desirable neighborhood with either a better housing unit or better accessibility. (Overwhelmingly—approximately 70 percent to 27 percent.)
2. A place that has a very nice appearance inside and less desirable outside appearance to a place that presents a very nice outside appearance but less desirable appearance inside. (Overwhelmingly—80.4 percent to 14.2 percent.)
3. Better than average schools with higher taxes to lower taxes and less desirable schools. (Overwhelmingly—78.3 percent to 15.2 percent.)
4. A conflicting combination of a new or fairly new house together with a well-established neighborhood.
5. Modern architectural style to traditional. (But barely—45.5 percent to 37.6 percent.)
6. A housing unit all on one floor.
7. Few children in the neighborhood.
8. Large lots to small lots.

There is, of course, considerable variation in housing preferences among households of different socio-economic characteristics, and with different residential experience.

Residential Choices

For the analysis of previous residential choices the approach taken is to divide recent movers in the sample (those households whose last move was in 1960 or later) into mover groups based on both the origin and destination of the most recent move. This grouping forms a typology separating, for example, households who moved within a neighborhood in the central city of a metropolitan area from households who moved from the central city to the suburbs of a metropolitan area.

A major reason for using this typology of mover groups based on present and previous residential location is that because intrametropolitan migration is such an overwhelming portion of all new residential locations by households in any given time period it is extremely important for developing an approach to modeling residential location. Of the 841 households in the sample who moved between 1960 and 1966, 79 percent moved within the same metropolitan area. So, only about 16 percent of the residential location decisions in this period involve intermetropolitan or nonmetropolitan-to-metropolitan area migration.

Ten mover groups are identified, five each for central city and suburban households. For central city households, there is one group whose members moved within the neighborhood (intraneighborhood city movers); one whose members changed neighborhoods but remained in the central city (freely moving city movers); one composed of newly formed households setting up home in the central city (new city households); one whose members came either from outside their present metropolitan area and/or state of residence and moved into the central city (outside region city movers); and finally, one whose member households came from suburban towns or smaller cities within the same standard metropolitan statistical area (SMSA) and settled in the central city (suburban to city movers). A similar number of mover groups was devised for the suburbs, the only differences being in the points of origin.

The analysis shows that there are significant socio-economic differences between these mover groups; with the most significant differences between suburban and central city residents, but also with significant differences between the mover groups in the cities and in the suburbs.

Prospective Residential Mobility

The analysis of moving intentions of the households surveyed confirms a rather consistent relationship between residential mobility intentions and some background factors. The most consistently reported relationship has been that of life cycle indicators (i.e., age, and family type) to residential movement. This study, as others, notes the influence of these factors and concurs that they are extremely important dimensions to be considered in any explanation of population movement.

In this study it was found that more recent movers were more likely than long-duration residents to be planning to move away from their current place of residence. Also, it was found that those persons whose previous location was within the same town or SMSA, or outside the SMSA but from the same state, were less likely to be planned movers than were the migrants from out of state, or those households that did not have their own home originally. Finally, present results were consistent with previous research in suggesting that tenure status was systematically related to residential mobility intentions.

Accessibility to services and various amenities by minutes, and plans for prospective residential movement, were examined. No differences were noted between planned movers and stayers in regard to current accessibility in minutes of such services as grocery shopping, downtown, a shopping center, a doctor's office, or a hospital or clinic. Also, no differences were noted in regard to such amenities as parks or playgrounds, or to an elementary school. On the other hand, accessibility of head's work place emerged as being significant in whether a household had plans to move within the following year or stay in the current place of residence. Households whose head lived 40 or more minutes away from his workplace were more likely to be movers than were those households with heads who lived less than 40 minutes away from work.

Contrary to expectations, movers were no different from nonmovers in their response to the attitudinal scale concerned with neighbors and neighborhood reputation. On the other hand, movers were more likely than nonmovers to have a low or negative attitude toward neighborhood. Movers were more likely than nonmovers to be dissatisfied both with housing and neighborhood, as measured by a number of scales and components of the larger scales.

Explanation of Residential Choice

The analysis of factors affecting the residential choice of households is organized in a framework which examines pre-move background factors and move-related factors as predictors of the outcome of the residential choice process. The pre-move background factors include such social factors as race, income, household size, and age of the head of the household; attitudinal factors; and factors relating to the characteristics of the previous dwelling. The move-related factors include reasons for moving and type of move.

Generally, the hypotheses regarding the effect of predictor variables have been supported by the data. Lower-income households and nonwhites tend, more than others, to move shorter distances, locate in the central city, rent apartments, have fewer rooms, pay lower rent, or own cheaper housing.

The poorest household characteristics for predicting the outcome of the move are age of head of household and the attitudinal indices of the familism, consumerism style, urban vs suburban orientation, social mobility commitment, and even a household's attitude about the importance of one's neighborhood for social mobility. This negative finding suggests that it is conceptually and operationally useful to maintain the conceptual separation between the decision to move and residential choice in dealing with residential mobility. Although age and the attitudinal variables provide excellent explanation of "why families move" they cannot as adequately explain "where and what kind of housing families move to."

The data have supported the notion that some of the first-order aspects of the move affect lower-order aspects. Type of move affects the probability of locating in the central city; shorter moves are more likely to do so than longer ones. Both type of move and location, especially location, have a strong effect on the tenure-dwelling unit type (size and cost) of the dwelling unit. Families who make shorter moves and who move to central city locations are more likely to rent apartments, live in smaller dwelling units, and pay less rent or own lower value units (independent of the household characteristics.)

Suggestions for Modeling Residential Mobility and Choice

The reciprocal relationships between land use and travel, and transportation facilities and land use, have been the focus of attempts at modeling both land development and travel. The requirements of a model of land development in this schema are that it be responsive to the amount, location, and quality of transportation service in the urban area, as well as other factors influencing land development, and that it provide adequate information for the estimation of travel demand. Residential land is of major importance for the obvious reasons that it comprises a very large portion of all land use in the urban area; a very large portion of all trips made in an urban area either begin or end at residential land; and the location of new residential development is expected to be responsive to differences in accessibility resulting from the location of transportation facilities.

Shifting the focus slightly, it is possible to recognize at least two general purposes of a model of land use and/or residential location. One of these is prediction. To plan effectively for future transportation facilities and public facilities and services, the planner must be able to estimate future land use. The second general purpose is testing. To evaluate the adequacy of transportation or other facilities planned for the future, the planner must be able to test these plans in the context of the future. Prediction of land use patterns and testing of transportation facilities embedded in the land use pattern are necessarily interconnected because the transportation facilities planned may be guiding factors input to the prediction.

In attempting to sum up the implications of this study for modeling residential mobility and location choice, several assumptions must be made. First, for what is such a model to be used? In general terms, the purpose of such a model is to evaluate alternative policies for land development and transportation. Specifically, such models may be used to evaluate the effects of alternative systems of transportation facilities, land development regulations, other public facilities, or combinations of these. The focus on policy or plan evaluation places the prediction on forecasting aspects of the model in a secondary role.

The next question is what form should the model's statement of policy or plan effects take? Essentially there are two possibilities. The model can be designed to produce a final outcome. Generally, this takes the form of some sort of equilibrium analysis in which an estimate of the interaction of growth over the forecast period, existing trends, and the plan or policy inputs are balanced against each other. This approach usually features a high degree of aggregation. The second approach is to concentrate on the process of development rather than the outcome. This approach virtually requires a high degree of disaggregation and direct treatment of behavioral processes underlying land development.

This study takes the second approach. The most important reason is the conviction that the most useful analysis of plans and policies for transportation and other public facility planning should provide an evaluation of incremental changes in plans and policies over time. For example, assuming changes in the transportation system do induce changes in land use pattern and intensity, the transportation planner's evaluation of the desirability of specific facilities should include the effects of such facilities on residential change in such small areas as neighborhoods. To do this the planner must have models or other tools which are sensitive to changes in the urban pattern at this scale.

The second assumption made here is that modeling of residential development needs to be done in two parts. On one hand the consumption of residential space must be treated in a model framework. This has been the focus of this study. On the other hand the production of residential space must also be treated in a model framework. These two parts need to be separately modeled because the participants in the two processes are different, their motivations differ, and their behaviors are probably best explained through separate conceptual frameworks. The demand for residential space, and supply of residential space, are then brought together to produce estimates of the future residential pattern.

From the analyses conducted in the study it appears that the most fruitful approach would be to model mobility and residential choice separately as linked but independent models of the residential process. The prime reason for this is that it has been shown that different variables are the best predictors of household mobility and residential choice.

Accessibility to a number of regular, out-of-home household activities, including the workplace, was found to be a relatively unimportant factor in a household's residential mobility and in a household's choice of a new residence. Within this general, and surprising, pattern it was noted that distance from the workplace related to mobility in that households that live some distance from the head's workplace are somewhat more likely to move than families that live close to the head's workplace. But no relationship was found between mobility plans of households and the location of other household activities, including shopping centers, schools, hospitals, and parks. With respect to residential location choice, little evidence was found in the data to indicate that households improved their accessibility to a range of community facilities as a result of a move. In applying these findings to

the design of residential allocation models, these respondents were reacting to widely varying environmental situations.

The general schema suggested as a framework for modeling mobility and residential choice is as follows: The first model is designed to produce estimates of mobility (that is, numbers of households who plan to move) by household type in small areas such as census tracts. The mobile households and the housing they currently occupy enter the second model, residential choice, along with estimates of inmigrants and newly formed households. The housing search process is then modeled in terms of competition among the locating households for the available housing, given each household group's socio-economic characteristics and preferences.

CHAPTER ONE

INTRODUCTION AND RESEARCH APPROACH

One of the key elements in improving the reliability of analysis for urban transportation planning studies is understanding the processes which shape land use and population density patterns in metropolitan areas. This has become increasingly evident with recent advances in travel forecasting models that are dependent on land use and population information for their base. As these models have improved, more and more attention has been directed to developing reliable land use models with a level of performance comparable to that of trip-making models. Moreover, because more than 80 percent of the daily trips made by residents of metropolitan areas begin or end at the dwelling place, residential land use models have been a particular focus of research and development efforts.

Much of the research effort in developing residential land use models has been concerned with mechanisms for producing conditional forecasts of the total residential pattern of a metropolitan area at one or more future dates. These models typically are allocation models. That is, they are designed to allocate residential development to the various parts of the urban area, and require as input an exogenous estimate of the amount of residential development to occur over the planning period. Operationally, the models handle the allocation of future residential development in one of two ways. Some of the models allocate only the estimated increment of development for the projection period over a base of the existing residential pattern. Others reallocate existing residential development plus the expected increment—in effect, recreating the city. For the allocation method these models rely, in general, on analogies (such as the gravity model and opportunity model used in trip distribution forecasts), on statistical projection of observed regularities in current and past land use patterns,

or on optimization techniques the criteria of which deal with some aspect of the residential pattern.

Whatever the allocation method or the operational handling of the allocation, these models have two things in common. First, they essentially describe equilibrium situations. They portray the urban area at one or more points in time in a state of rest where the pressures for residential change and the competition for location are at least momentarily stilled. Each such portrait is, in effect, an outcome of growth pressures, spatial competition, etc. But it is often difficult to interpret from these snapshots of the city the processes of growth and change in a way that permits the transportation planner to relate incremental changes in the land use pattern to changes in the transportation system. This is not intended as a criticism of these models. It is simply a commentary on the state of the art of land use models.

Secondly, these models attempt to encompass the entire residential growth process which is composed of two major subsystems. The first of these subsystems is concerned with the supply of housing, both new and vacated. The second is concerned with the behavior of households in the consumption of available housing. Residential models are intended to simulate the spatial impact of the interplay between these two sides of the residential land market within the constraints of existing or potential public actions. Relatively less attention has been devoted to models which disaggregate the residential growth process into these component subsystems. In addition, few models attempt to identify the mobile segment of the population in a given time period.

RESEARCH PROBLEM

This study is concerned with consumer behavior in the residential development process and focuses on both the mobility of households and on the processes of housing and neighborhood choice. Using data obtained from a representative sample survey of households in metropolitan areas across the United States, the study identifies key variables underlying the behavior of households with respect to both residential mobility and residential choice. A principal assumption is that an understanding of which households will move in a given time period, where they will move, and why, is of crucial importance in designing adequate residential land use models. Thus, emphasis is placed on the marginal change, the increment of actual household mobility and choice in a given time period, rather than on change of residential mass.

The study gives primary emphasis to identifying housing and neighborhood preferences as reflected in the facilities and living qualities which respondents sought when they began their housing search before they moved to their present accommodations, as reflected in their attitudes toward housing and neighborhood environment, and as determined from their satisfactions with the housing they chose and are now occupying. Thus, this study attempts to get at housing preferences through analysis of attitudes and choices in the housing market. It has become increasingly clear that in addition to budget and family-size factors, there are a number of attitudinal and other factors which have a pronounced effect on the willingness of urban households to move and on the way in which they make housing choices.

The use of attitudinal variables in model formulations is discussed in this report, but only illustrative applications are introduced. Because housing attitudes are a form of personalized reaction to experience with the living environment, the results from the national survey are useful mainly for scouting out the range of preferences which exist across the country as a reference source in identifying key attitudinal variables and developing residential models in particular metropolitan areas.

Objectives

The objectives of this research are therefore threefold: (1) to identify factors related to the mobility of metropolitan households; (2) to identify factors involved in the choice of dwelling and neighborhood environment by such households; and (3) to develop the specifications for building mathematical models to be used in determining residential mobility and residential choice.

Conceptual Framework

At the outset it may serve a useful purpose to sketch in the general conceptual framework used as a guide for the analyses undertaken in this study. In this connection, it should be emphasized that there is no intention of suggesting a theory of residential choice, but only a working schema for the analyses. The focus of this research draws on a well-established associated line of research in residential mobility.

In very general terms the residential mobility process is seen as composed of two linked decisions—a decision to move and a decision to acquire a specific dwelling. The household's decision to move places it in the housing market and its selection of a dwelling takes the household out of the market. Intervening between these two decisions is the residential search process—the looking at, evaluating, and accepting or rejecting available dwellings.

This simple and obvious way of describing the residential mobility process is useful primarily because by focusing attention on the sequential decisions made, it provides a useful way of categorizing households in the residential market and hypothesizing about their behavior. Households enter the residential market for a large variety of reasons. In some instances the decision is based primarily on housing considerations. For example, the household may want to upgrade the quality of its housing, or it may need more or less space. In other instances the decision to move is not directly based on housing considerations. A change of jobs which results in the new work place being a long distance from the original dwelling may instigate a decision to move. Similarly, some moves may be forced by loss of the present dwelling through catastrophe, public acquisition, change of private ownership, or other events.

Households entering the market may be distinguished by the degree of commitment involved in their decision to move and this in turn may affect their search process and the subsequent residential choice decision. Households may be thought of as committed movers if the decision to move is irreversible. Typical of this class of mover households are those in which a decision is made to change the head of the household's job and the new job is beyond the range of feasible daily commuting to work. The household must then move nearer the job and it is committed to finding a new dwelling. This is a typical voluntary, but committed move decision. Another type of committed, but not voluntary move decision results when a household is forced out of its current dwelling through the action of others or nature. Committed residential move decisions are also made by the formation of new households.

Decisions to move which may be thought of as uncommitted are typified by a household which desires to upgrade the quality of its housing or change the amount of residential space. The household seeks a new dwelling. If it finds none that is satisfactory the household may easily leave the market, revoke the decision to move, and remain in its present dwelling.

Committed move decisions are characterized by being irreversible. Also the decision is typically not based primarily on housing considerations but on other factors which in turn require that the household seek a different dwelling. Uncommitted move decisions are characterized by being reversible. They are always voluntary and typically they are based on housing considerations.

Another way of characterizing the linked decisions of residential mobility and choice is in terms of the factors motivating the decisions. The first decision—to move—can be viewed as being activated by what are often called "push factors," those that become sufficiently important to the household for it to decide to begin hunting for a place.

Once motivated to make a search, the household takes into account another set of considerations—what are sometimes called "pull factors," those facilities and qualities it seeks in the new place. The second decision—dwelling choice—is the classic one where the household makes tradeoffs among the opportunities available in the form of housing choices.

Looking to the task of developing models of residential change and growth which have the capability of illustrating the effects of alternative public policies and actions as well as market conditions, it seems important to recognize explicitly the separate but linked decisions in the residential mobility process. At any one time there are always more households in the market who are uncommitted to the move than there are those who are committed. And there is always some proportion who will reverse the decision to move and remain at least for a while in the current dwelling. The decisions of these households may be quite sensitive to public action if the uncommitted decision to move is based largely on neighborhood and environmental factors. Public or private actions which change these factors will then affect the residential choice process. Ideally, a model of residential change should be capable of representing these events. And it appears that this two-stage, or linked decision view of the residential mobility process is a useful initial approach toward this objective.

THE NATIONAL SURVEY

The data for this study consist of interviews with members of 1,476 households in 43 metropolitan areas across the United States. (The survey was administered for the study by the National Opinion Research Center, University of Chicago. The Interview Schedule is reproduced in Appendix B.) The interviews, each about one hour in length, provided the following information:

Current Place of Residence.—A description of the household's present dwelling unit and neighborhood and the household's satisfactions and dissatisfactions was obtained.

Choice of the Current Place of Residence.—The household's mobility and choice process in the move from their last previous residence to their current residence was fully described, including the reasons for moving, the conduct of the search for a new residence, and the reasons for selecting their current residence.

Previous Place of Residence.—A description of the household's previous residence and neighborhood and the household's satisfactions and dissatisfactions was obtained.

Accessibility Opportunities and Preferences.—The time distance and mode of travel from home to such activity destinations as work, school, shopping centers, etc., were obtained for each household, as well as their accessibility preferences. In addition, the in-home and out-of-home activities for one member of each household were recorded for a full day; and use of and preference toward public transportation was recorded.

Dwelling and Neighborhood Preferences.—A description was obtained from each household of its current preferences of house type, size, equipment, yard, and neighborhood.

Moving Intentions.—Each household discussed its future intentions on moving and whether the members had considered moving since occupying their current residence.

Attitudinal Factors.—Household attitudes toward a large number of factors relevant to residential mobility and housing choice, including career and social mobility factors, neighboring, livability expectations and family life-style, central city and suburban environments, and household expenditure patterns, were elicited through a series of questions.

Background Information.—Demographic and other data were obtained on all members of the household.

Taken together, this information provides a detailed, factual profile on the mobility and residential choice behavior of households in metropolitan areas. The interview was carefully designed to provide information for testing specific hypotheses about household behavior as well as providing a profile of current behavior.

The survey sample is based on a standard multistage probability sample to the level of small areas containing one or more city blocks. At the block level, quota sampling was used to obtain the desired representation of heads of households, spouses, and other individuals and an appropriate proportion of respondents by age and employment status. The sample design specifications also required proportional representation of each of the four major census regions and of each of three Standard Metropolitan Statistical Area (SMSA) size classes (less than 250,000 population in 1960, 250,000 to 1,000,00 population, and over 1,000,000 population) and equal numbers of interviews in central cities and suburban areas.

ORGANIZATION OF THE REPORT

The report deals, in order, with a summary of findings on housing choice of the households interviewed; an analysis of the residential mobility process; an analysis of the housing choice process; and, drawing on these analyses, a discussion of the elements needed for a model of moving behavior which will have the capability of dealing with both the mobility and choice processes as components of residential changes.

Chapter Two, "Findings—Preference Patterns in Selection of Housing," focuses on housing choice of the households interviewed from three points of view. First, preferences of the households for housing and neighborhood environment are examined from housing choices made by each household in their most recent move. Second, preferences of the households are inferred from satisfactions and dissatisfactions with present accommodations. Third, present preferences are examined based on the respondents' statements about moving intentions.

Chapter Three, "Findings—Residential Choices of Mover Groups," extends the analysis of residential choice in a framework based on the present and previous location of households whose last residential move occurred since 1959. This analysis focuses on the several residential flows within metropolitan areas—from central city to suburb, from suburb to suburb, from neighborhood to neighbor-

hood within both central city and suburb—and with the residential flows into and between metropolitan areas. Differences in the housing choice process, housing satisfactions, and accessibility to work and other activities are examined for the different residential flows.

Chapter Four, "Findings—Prospective Residential Mobility," contains a detailed analysis of the moving behavior of the households interviewed. The aim of the analysis is to identify those factors most important in the decision to move. The survey findings are related to previous research on residential mobility and a number of hypotheses are tested.

Chapter Five, "Findings—An Explanation of Residential Choice," follows the analysis of "which families move and why" in the previous chapter, with a detailed analysis of the "what, why, and how families choose." A conceptual framework for the analysis is presented and specific hypotheses are tested. The aim of the analysis is to identify key factors in explaining the residential choice of different household types.

Chapter Six, "Findings—A System of Modeling Urban Mobility and Residential Choice," summarizes some of the findings of the study, briefly reviews existing residential land use models, and suggests a framework for modeling moving behavior. The general orientation of this effort is toward models of both mobility and housing choice; that is, toward a model of the incremental change occurring in the residential land use pattern of a metropolitan area and the redistribution of households currently residing in the area.

Chapter Seven, "Evaluation," gives a brief evaluation and review of the survey.

In addition, three appendices are included in the report. Appendix A presents a review of existing residential location models. The interview schedule used in the study is reproduced in Appendix B. The 43 metropolitan areas in which interviews were conducted are listed in Appendix C. Also additional data tables are appended to chapters to which they relate. These tables provide documentation for some of the discussion in these chapters but were adjudged too numerous to scatter throughout the text.

CHAPTER TWO

FINDINGS—PREFERENCE PATTERNS IN SELECTION OF HOUSING

This chapter focuses on preferences of urban households in the selection of housing from three points of view: (1) preferences inferred from past behavior examined from the point of view of the last move of each household interviewed; (2) preferences inferred from current residential experience based on present housing accommodations and expressed satisfactions and dissatisfactions; and (3) preferences obtained from statements on moving intentions in the future. In addition to the attention given to residential behavior for the total sample of urban households, the chapter also examines variation in this behavior as it is associated with different household characteristics. Thus, for each facet of residential behavior a summary is presented in terms of the total sample, followed by a discussion concerning significant departures from this average.

RETROSPECTIVE: THE LAST MOVE

A first perspective based on the last move is of interest because it provides a background for interpreting satisfactions and dissatisfactions with the present situation of a household. It may also provide an important clue as to the nature of subsequent or planned moves. For these purposes, the last move is described in terms of change between the household's previous place of residence and the present place. The dimensions of this change include distance

moved, change in tenure, change in type and size of dwelling unit, and change in housing costs.

Distance Moved

What can be said about distance as a factor in the move? (See Table 1.) First, in agreement with previous research on residential moves, the evidence from this study shows that most moves are short moves. Over one-fourth of the last moves were within the same neighborhood; over 60 percent were within a five-mile radius; and over 85 percent were within the same metropolitan area. Only 15 percent

TABLE 1

LENGTH OF MOVE FROM PREVIOUS LOCATION

PREVIOUS LOCATION	NO.	PERCENT
Same neighborhood	405	28.1
Different neighborhood, less than five miles	477	33.1
Same metropolitan area, over five miles	344	23.9
Outside the metropolitan area	193	14.9

of the interviewed households' most recent moves originated outside the metropolitan area in which they are now living.

Although households with a variety of such characteristics as race, income, age of head, etc., are involved in all length moves, some general observations may be made from the data. In terms of the percentage of households surveyed, a short move (within the same neighborhood or within five miles of the previous dwelling but outside the neighborhood) is more likely to be made by families of relatively low income, nonwhite families, families that live in the central city rather than in the suburbs, and those whose head of household is relatively older. Conversely, the longer moves are more likely to be made by younger, white, and higher-income families.

Central City versus Suburban Origins and Destinations of Moves

The sample was designed to achieve approximately equal representation of central city and suburban residents. To gain some understanding of flow patterns in the shift of households between city and suburb, it is necessary to examine both origins and destinations of moves. Of the intrametropolitan movers who ended up in the central city, only 5 percent came from outside the central city and new family formation. The remaining 95 percent moved within the central city. In comparison, 68.9 percent of those moves that ended up in the suburbs came from other suburbs or towns in the metropolitan area; 21.2 percent came from the central city; and 9.9 percent from outside the metropolitan area and new family formation.

With movers grouped into central city and suburban destinations, it is possible to look at distance and direction of moves in a more focused way. A strong relationship exists between the length of move and present location in central city or suburb—a relationship which supports the notion of migration out of central cities to the suburbs. The longer intrametropolitan moves, those that cross municipal boundaries, tend to be suburban-destined moves. Of those intrametropolitan moves that resulted in a municipal boundary being crossed, 89.3 percent were the suburban moves, whereas only 10.7 percent were central city moves. (However, as a cautionary note, it should be recognized that moves crossing municipal boundaries comprise only 22.5 percent of all metropolitan moves and that not all of these need have crossed the central city's boundary. Some could have crossed boundaries of other cities and towns in the metropolitan area.) Moves within the central city tend to be shorter; 66.7 percent of within-neighborhood moves occur within the central city.

Considerably more movers from outside the metropolitan area located in the suburbs than in the central city (61.4 percent as compared to 38.6 percent).

Change in Tenure

Given the foregoing patterns of moves—the distance and where they start and end—what can be said about the changes in the balance between owners and renters? Here the national survey substantiates the widely recognized trend toward home ownership. Of those who had a previous place, 72.1 percent were renting and 27.9 percent were

buying or owned their places. Presently only 39.3 percent are renting, and 60.6 percent of those interviewed either own or are buying their places.

This trend is the result of the fact that very few households who owned or were buying their previous place returned to rental tenure, while over 50 percent of those who previously rented changed to ownership tenure. This strong flow of households from renter to owner status in the process of residential mobility is shown in Figure 1.

The percentage change in tenure from rental to ownership varies considerably among the different origin-destination types of moves within the metropolitan area. Previous central city renters who moved to the suburbs had the greatest change in tenure, with 78.3 percent buying homes. Next in percentage change are the previous suburban renters moving within the suburbs; 67.1 percent of them bought homes. Exactly half of those previous suburban renters who moved to the central city bought homes. Finally, 38.5 percent of all previous central city renters who moved within the central city changed to ownership tenure.

There are some interesting variations within these overall patterns if previous renters and owners are grouped according to their post-move tenure status and then subdivided into classes by household factors. The results are given in Tables 2 and 3.

Two household factors used in this and subsequent analysis require special explanation. Family type, the first factor in Table 2, is a factor describing the classification of households in the sample. The eight classes are: Full family I (head of household and spouse with children, eldest under six); Full family II (head and spouse with children, eldest over six); Extended family (head and
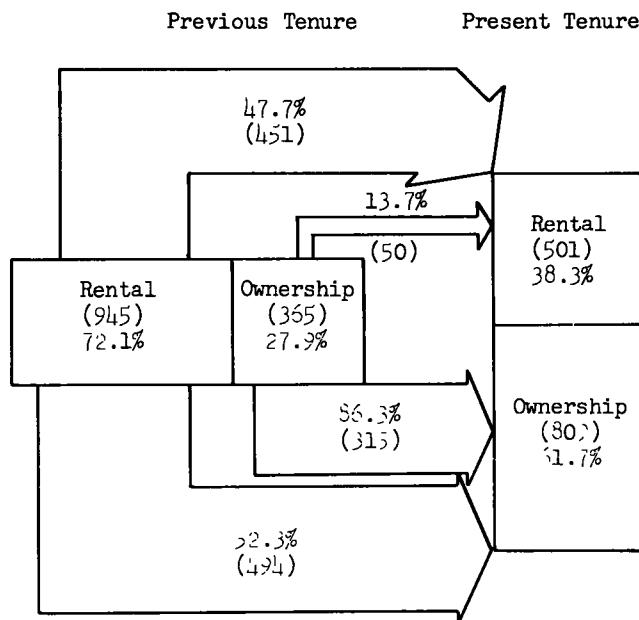
Figure 1. Tenure change in last move.

spouse with children plus additional adults); Married couple (head and spouse only); Broken family (head and children); Single person (head only); Pseudo-family (unrelated adults); and Miscellaneous.

The socio-economic status (SES) index, the fourth factor in Table 2, is the index used to classify occupations in this study. It is Duncan's socio-economic index based on data on the education and income of persons in a large number of occupations from the U.S. Census (1, 2). It has been demonstrated that the SES index can also be used as a measure of the prestige or social status of an individual. The remaining household factors—age of head, size of household, race, and income—are self-explanatory. The strongest modifications to the general flows of Figure 1 are in the rental-to-rental flow channel, where the percentage is raised from 47.1 percent of the total sample up to the 60 to 88 percent range for certain types of households.

TABLE 2

STRONGEST ASSOCIATIONS BETWEEN HOUSEHOLD FACTORS
AND TENURE CHANGES—IF PREVIOUS RENTER

HOUSEHOLD FACTOR [a]	HOUSEHOLD MOST LIKELY TO CONTINUE RENTAL TENURE	HOUSEHOLDS MOST LIKELY TO CHANGE TO OWNERSHIP TENURE
Family type at time of move [b]	Single persons, broken, and misc. 71.5%	Full families and married couples 57.6%
Age of head at time of move [b]	Under age 30 62.8%	Age 45-64 63.8%
Size of household at time of move	Single person 88.1%	3-6 57.4%
SES index (present)	Under 20 60.2%	40 and over 79.1%
Race	Nonwhite 71.9%	White 58.9%
Income (present)	Under $4,000 64.5%	—
Percentage for total sample	47.7	52.3

[a] All factors significant at the 0.001 level in Chi-square test of significance.
[b] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

TABLE 3

STRONGEST ASSOCIATIONS BETWEEN HOUSEHOLD FACTORS
AND TENURE CHANGES—IF PREVIOUS OWNER

HOUSEHOLD FACTOR [a]	HOUSEHOLDS MOST LIKELY TO CONTINUE OWNERSHIP TENURE	HOUSEHOLDS MOST LIKELY TO CHANGE TO RENTAL TENURE
Family type at time of move [b]	Full family II, extended families, married couples, pseudo families, misc. families 90.9%	Broken family or single person 22.5%
Age of head at time of move [b]	Age 35-59 91.5%	Under age 35 and over 59 23.9%
Size of household at time of move	5 or more 90.7%	1 or 2 23.9%
SES index (present)	20 and over 90.8%	Under 20 21.6%
Race	White 87.8%	Nonwhite 31.0%
Income (present)	—	—
Percentage for total sample	86.3	12.7

[a] All factors significant at the 0.001 level in χ^2 test of significance.
[b] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

Change in Dwelling Unit Type

As brought out by other studies, the national survey shows that accompanying trends toward ownership and moves to the suburbs there is a strong trend to the single-family detached dwelling unit. No matter what the previous housing unit type—single family, duplex, apartment, or other—a greater proportion of those interviewed moved into a single-family unit than into any other type of housing in their most recent move. The trend is strongest for those who previously lived in single-family units (83.3 percent remained in single-family units), weaker (60.7 percent) for those who previously lived in two-family units, and weakest for those previously living in apartments or other housing unit types (45.8 percent moved to single-family houses). If not moving to single-family housing, most households moved to a housing unit type similar to their previous one (i.e., apartment to apartment, duplex to duplex).

An analysis of the difference in choice of housing types for different characteristics of households was made for those previously living in single-family houses, those previously living in two-family units, and those previously living in apartments. Tables 4, 5, and 6 summarize these associations. Examination of these tables reveals that associations between household characteristics and type of housing moved to are consistent in direction regardless of previous housing type. The proportions change, depending on previous housing type; but if, for example, a particular household characteristic is most strongly related to single-

family in one of three types of previous housing, it is also the strongest in the other two.

Change in Number of Rooms

What can be said about space within the housing unit after the move? In this respect the survey shows that there is a strong trend to increase the number of rooms in the course of a move. Some 57 percent of the sample have more rooms in their present housing unit than they had in their previous place. There is significant variation in which household characteristic stands out prominently when the change in size of housing accommodations of the last move is examined (Table 7). But only 19 percent of the total sample showed a decrease in the number of rooms. And even for those households most likely to have fewer rooms —the elderly, the single-person households, and the broken families—more increased than decreased their number of rooms. Further, for all other households, the combined proportions of those who reduced their number of rooms or made no change is less than those who increased their number of rooms in the course of the move. The type of tenure change made during the move and the increase or decrease in number of rooms are closely associated. Sixty-six percent of those who went from ownership to rental tenure also reduced their number of rooms, while 72 percent who changed from rental to ownership increased their number of rooms at the same time.

TABLE 4

ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND CHANGE IN TYPE
OF HOUSING UNIT FOR THOSE PREVIOUSLY IN SINGLE-FAMILY UNITS

| HOUSEHOLD FACTOR | χ^2 LEVEL OF SIGNIFICANCE | HOUSEHOLD FACTORS MOST STRONGLY ASSOCIATED WITH MOVE TO: | | |
		DETACHED SINGLE-FAMILY HOUSE	SEMI-DETACHED DUPLEX OR ROW HOUSE	APARTMENT
Family type at time of move [a]	0.01	Full family II & misc. 90.1%	Single pers. 19.6%	Broken families 17.5%
Age of head at time of move [a]	0.001	—	—	Age under 25 27.7%
Size of household at time of move [a]	0.001	Over 4 pers. 89.7%	Single pers. 28.6%	Under 3 pers. 18.1%
SES index (present)	0.02	70 and over 97.3%	—	—
Race	0.001	—	—	Nonwhite 25.3 to 4.2%
Suburban vs central city household	0.001	Suburban 92.1% to 71.3%	Central City 15.9%	Central City
Percentage for total sample of households previously living in single-family units		83.3	9.6	7.1

[a] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

TABLE 5

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ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND CHANGE IN TYPE
OF HOUSING UNIT FOR THOSE PREVIOUSLY LIVING IN TWO-FAMILY UNITS

HOUSEHOLD FACTOR	χ^2 LEVEL OF SIGNIFICANCE	HOUSEHOLD FACTORS MOST STRONGLY ASSOCIATED WITH MOVE TO:		
		SINGLE-FAMILY	DUPLEX OR ROW HOUSE	APARTMENT
Family type at time of move [a]	0.05	Full family II 75.8%	—	Single pers. 31.25%
Age of head at time of move [a]	0.20	Age 55-64 79.3%	Age 45-49 35%	65 and over 25%
Size of household at time of move	0.02	Over 4 pers. 76%	Under 3 pers. 37.1%	Single pers. 35.7%
SES index (present)	0.10	70 and over 91.7%	30-39 33.3%	Under 10 35%
Race	0.001	—	Nonwhite 43.2% to 18.9% for whites	Nonwhite 27.3% to 13.0% for whites
Suburban vs. central city household	0.001	Suburban 74.1% to 47.9% for central city households	—	Central City 24.8% to 6.3% for suburban
Percentage for total sample of households previously living in two-family units		60.7	23.6	15.7

[a] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

TABLE 6

ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND CHANGE IN TYPE
OF HOUSING UNIT FOR THOSE PREVIOUSLY IN APARTMENT UNITS

HOUSEHOLD FACTOR	χ^2 LEVEL OF SIGNIFICANCE	HOUSEHOLD FACTORS MOST STRONGLY ASSOCIATED WITH MOVE TO:		
		SINGLE-FAMILY	DUPLEX OR ROW HOUSE	APARTMENT
Family type at time of move [a]	0.001	—	Single pers. 29.0%	Broken family, single pers. & pseudo families 62.7%
Age of head at time of move [a]	0.90	—	—	—
Size of household at time of move	0.02	—	—	Single pers. & over 6 pers. 65.9%
SES index (present)	0.05	70 and over 72.4%	30-39 28.1%	—
Race	0.001	—	—	Nonwhite 57.6% to 27.7%
Suburban vs. central city household	0.001	Suburban 74.1% to 30.5%	—	Central City 49.0% to 8.9%
Percentage for total sample of households previously living in apartments		45.8	19.3	34.9

[a] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

Change in Housing Costs

Finally, how do movers fare in the move with respect to housing costs? For most, costs go up. This might be expected, as many moves upgrade the household's housing accommodations. It was only possible to measure the changes for households that did not switch tenure during the move, and then only in a rather crude way, because the data measured rent and cost of house in terms of rent or value intervals rather than in the form of specific figures. Thus, "increase" (or "decrease") is measured as a change to a higher (or lower) cost category, while "staying within the same cost category" is measured as no change, even though the household might have increased or decreased its rent or house value within the limits of its cost category.

Those who are renting are more likely to reduce their costs (23.9 percent) or stay in the same cost category (34.6 percent) than those who are homeowners (8.9 percent and 32.1 percent, respectively). These results suggest that homeowners are much more likely to be upgrading in their move than are renters, and it would appear that more commonly renters may move for other reasons.

The patterns of change in housing costs for owners continued to be significant when the total sample was examined according to various household characteristics. But, for renters, household characteristics account for little of the variation. For owners, the household characteristics that tend to be particularly associated with an increase in housing costs and those that are associated with a decrease in housing costs are shown in Table 8.

Summary of Most Recent Moves

In brief, then, the national survey indicates that, in recent intrametropolitan moves, urban households tend to shift toward ownership, a single-family house, an increase in number of rooms, and an increase in housing costs. The tenure change for previous renters was one that was strongly related to household characteristics. Although over 50 percent of all the previous renters in the sample changed to ownership in their most recent move, there were certain household types in which 60 to 88 percent of the households remained in the rental tenure category.

TABLE 7

DIFFERENCES IN PROPORTIONS OF HOUSEHOLDS WHO GAINED ROOMS
IN THE MOST RECENT MOVE AND THOSE WHO LOST ROOMS
BY HOUSEHOLD FACTORS

HOUSEHOLD FACTORS	χ^2 SIGNIFICANCE LEVEL LESS THAN:	KENDALL'S τ (WHERE APPROPRIATE)		HOUSEHOLD FACTORS MOST STRONGLY ASSOCIATED WITH:		
		INDEX	SIGNIFICANCE LEVEL LESS THAN:	DECREASE IN NO. OF ROOMS	NO CHANGE IN NO. OF ROOMS	INCREASE IN NO. OF ROOMS
Family type at time of move [a]	0.001	—	—	Broken families & single persons 33.0%	Pseudo families and misc. 35.3%	Full families and extended families 63.9%
Age of head of household at time of move	0.001	—0.12	0.001	Age 50 and over 28.6%	—	Age 25-29 69.0%
Size of household at time of move	0.05	0.08	0.001	Single person 32.6%	—	—
Income (present)	0.01	0.05	0.01	Less than $3000 25.2%	$17,000+ 33.3%	$4000-$6750 66.7%
SES index (present)	NS	—	NS	—	—	—
Race	NS	—	NS	—	—	—
Suburban vs. central city household	NS	—	NS	—	—	—
Type of tenure change made in move	0.001	—	—	Owner to rental 66.0%	—	Rental to owner 72.2%
Type of move—intra-metropolitan vs. move from outside the metropolitan area	0.05	—0.05	0.01	Move from outside metropolitan area 27.7%	—	—
Percentage for total sample				19.0	24.0	57.1

[a] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

PRESENT: HOUSEHOLD CHARACTERISTICS, HOUSING ACCOMMODATIONS, AND EXPRESSED SATISFACTIONS

The previous discussion centered around the last move of households. Another perspective which gives insight into moving behavior has to do with satisfactions or dissatisfactions with the household's current housing accommodations. In the ensuing discussion the pattern of housing accommodations is described in terms of tenure, housing type, number of rooms, suburban or central city location, and price or rent of housing unit.

Tenure

Before satisfactions and dissatisfactions are examined, it is useful to look at the association between household characteristics and features about present accommodations. Significant findings in this respect provide a means of grouping households in the analysis of satisfactions or dissatisfactions. Beginning first with tenure, Table 9 summarizes the consistently strong patterns of association found.

Some of the especially strong and clear associations are with age, income, and race. Rental tenure drops from 82.5 percent of those under 25 years of age to 24.8 percent of those 60-64 years of age; buying increases from 15.5 percent of those under 25 to 55.6 percent of those between 45 and 49 years of age before dropping again to 7.4 percent of those over 65; and owning outright rises from 1 percent of those under 30 to 6 percent of those over 65 (Fig. 2).

Figure 3 shows that as income increases the proportion of households renting steadily declines while the proportion of households buying steadily increases. Owning outright

increases steadily for those earning over $4,000 annually, but is also high for those earning less than $3,000 because of the retirees in this group.

Race is clearly associated with tenure. The proportion of whites owning or buying is 65.2 percent, compared to 32.2 percent for nonwhites. Conversely, 67.8 percent of the nonwhites are renting, compared to 34.8 percent of the whites. Although this is somewhat related to incomes, it remains true even after controlling for income.

Housing Type

Familiar to users of U.S. Census of Housing data, an outstanding characteristic of the metropolitan area housing supply is the single-family type of housing unit. The predominance of this housing type (64 percent of all the households sampled lived in single-family units) persists strongly even when results are examined according to various household characteristics. Indeed, more households, except nonwhite, live in single-family housing than any other housing type. Significant associations between housing type and various household characteristics are shown in Table 10. Again the strongest associations appear to exist with age, income, and race. Living in a single-family unit tends to increase with age of the head and income, while the proportion of households living in apartments decreases with age and income. The association of housing type with age and income is shown in Figures 4 and 5.

The findings suggest that if there is an overwhelming preference among metropolitan area households for the single-family home, a household's socio-economic circumstances make a difference as to whether it can actually exer-

TABLE 8

ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND TENDENCY FOR HOUSING COSTS TO INCREASE OR DECREASE

HOUSEHOLD FACTORS	HOUSEHOLDS WHOSE HOUSING COSTS ARE MOST LIKELY TO INCREASE IN A MOVE AND THE PERCENTAGE WHOSE COSTS DID INCREASE	HOUSEHOLDS WHOSE HOUSING COSTS ARE NOT LIKELY TO CHANGE SIGNIFICANTLY: MARRIED COUPLES, SINGLE PERSONS, AND MISC. HOUSEHOLDS	HOUSEHOLDS WHOSE HOUSING COSTS ARE MOST LIKELY TO DECREASE IN A MOVE AND THE PERCENTAGE OF THE SAMPLE WHOSE DID INCREASE
Family type at time of move [a]	Full families & extended families 73.0%	Married couples, single persons, & misc. households 53.8%	Broken families & single persons 16.1%
Age of head at time of move [a]	Age 35-44 75.0%	Age 60 & over 61.5%	—
Size of household at time of move	4-6 persons 73.1%	1-3 persons 41.4%	1-3 persons 13.6%
Income (present)	Over $8,750 78.5%	Under $5,250 62.9%	Under $3,000 12.1%
SES index (present)	60 and over 73.1%	Under 10 70.6%	30-39 18.9%
Present location in suburb or central city	Suburban 68.8%	Central city household 47.7%	—
Percentage for total sample	59.0	32.1	8.9

[a] There is the possibility of considerable error in measurement of family type and age of head for those households who moved before 1961; the findings should be regarded with caution.

TABLE 9

ASSOCIATIONS BETWEEN HOUSEHOLD FACTORS AND PRESENT TENURE

HOUSEHOLD FACTORS	χ^2 LEVEL OF SIGNIFI-CANCE	HOUSEHOLD FACTORS MOST STRONGLY ASSOCIATED WITH:[a]		
		RENTAL	BUYING	OUTRIGHT OWNERSHIP
Family type	0.001	Misc., broken families, single persons, & full families Type I 59.3%	Full family Type II 53.1%	Pseudo families & married couples 42.2%
Age of head	0.001[b]	Under age 30 70.9%	Age 35-49 53.5%	Age 55 & over 54.9%
Size of household	0.001	Single person 56.8%	5 & 6 pers. 57.9%	2 persons 40.1%
SES index	0.001	Under 20 51.6%	60 and over 47.8%	50-59 31.3%
Income	0.001	Under $5,250 60.7%	Over $6,750 53.3%	Under $3,000 & over $17,000 31.8%
Race	0.001	Nonwhite 66.3%	White 38.0%	White 27.2%
Suburban vs central city household	0.001	Central city 52.9%	Suburban 47.9%	—
Percentage for total sample		39.3	35.9	24.7

[a] Percentages indicate proportions of households with the indicated factors whose tenure is as given in the column head.

[b] One way ANOVA was also significant at 0.001 level; mean ages are: for owning: 58.8; buying: 42.3; renting: 40.3.
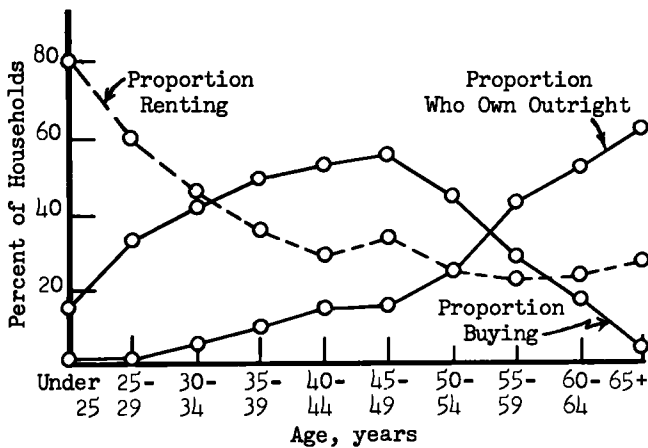
Figure 2. Age of head of household and tenure.
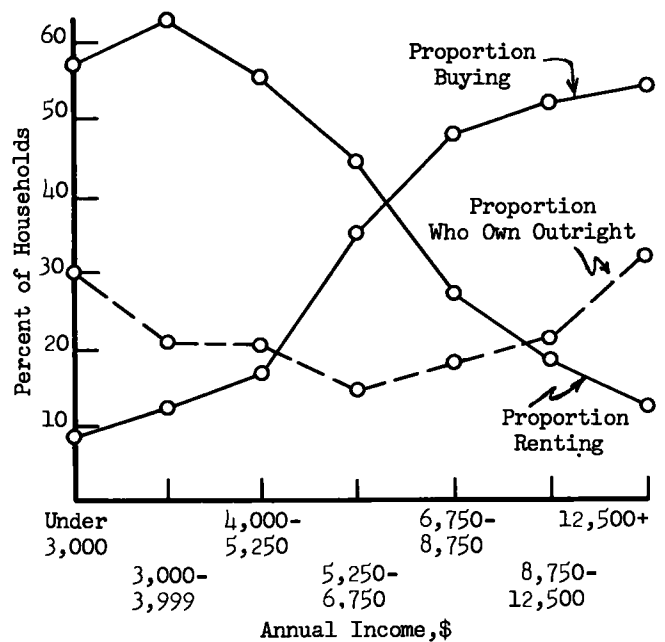
Figure 3. Annual income of household and tenure.

TABLE 10

ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND HOUSING

HOUSEHOLD FACTOR	χ^2 LEVEL OF SIGNIFI- CANCE	HOUSEHOLD FACTORS MOST STRONGLY ASSOCIATED WITH THE FOLLOWING UNIT TYPES: [a]		
		SINGLE-FAMILY	DUPLEX OR ROW HOUSE	APARTMENT
Family type	0.001	Family type II 74.2%	Single person, married couples & broken family 16.9%	Single persons, broken families, pseudo families, and misc. households 26.3%
Age of head	0.001	Age 45 and older 68.1%	—	Under age 30 30.3%
Household size	0.001	5-6 persons 78.5%	Single person 18.4%	Single persons, and house- holds of 7 or more persons 26.1%
SES index	0.001	70 or over 84.3%	30-39 17.8%	Under 30 22.9%
Income	0.001	Over $12,500 79.7%	—	Under $5,250 25.9%
Race	0.001	White 69.6%	—	Nonwhite 38.9%
Suburban vs central city household	0.001	Suburban 80.9%	—	Central city household 27.8%
Percentage for sample [b]		64.0	11.5	12.9

[a] Percentages indicate proportions of households with the indicated factors whose housing type is as given in the column head.

[b] The percentages do not add up to 100% because 6.6% living in other housing types are not examined.
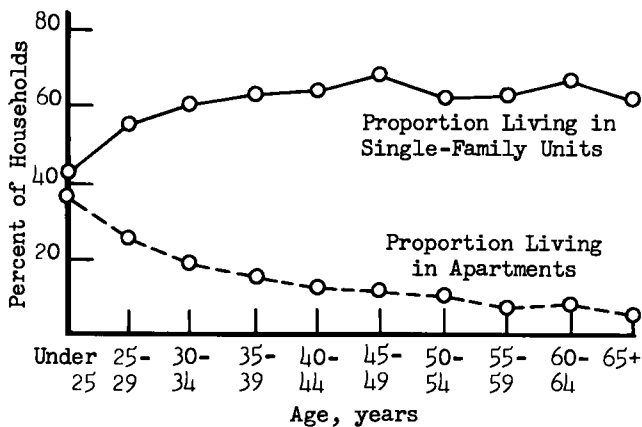
Figure 4. Age of head of household and housing type.
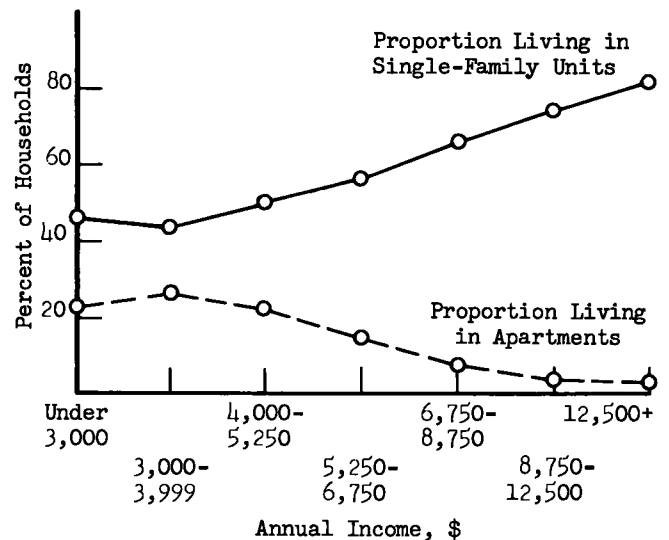
Figure 5. Annual income of household and housing type.

cise a choice in this respect. Thus, for example, only 42 percent of those earning $3,000 to $3,999 live in single-family units, compared to 87 percent of those earning more than $12,500 annually. If the preference is to own a single-family home, socio-economic circumstances again show up significantly. Thus, rental units comprise almost 30 percent of the single-family housing occupied by those in the $3,000 to $3,999 income group compared to 7 percent of the group reporting over $12,500 annually. By the same token, whites are much more likely to live in single-family units and much less likely to live in apartments. The percentage of whites living in single-family housing units is twice that of nonwhites (69.6 percent vs 35 percent). And, conversely, the percentage of nonwhites living in apartments is almost four times the percentage of whites (38.9 percent vs 10.6 percent).

Number of Rooms

Another aspect of housing that users of census data draw on to characterize a metropolitan area's housing supply is the size of the housing unit as measured by number of rooms. In this survey housing units of from four to six rooms comprise over 68 percent of the sample and five-room units are the most common (25.3 percent of the sample). When the characteristics of households occupying the housing units of these sizes are examined, it is apparent that smaller households, younger households, lower status households, lower income, nonwhite households, and central city households tend to have smaller houses and apartments. The household characteristics most strongly associated with number of rooms are household size and income.

Housing Costs

A key element in gaining a perspective on the satisfactions and dissatisfactions discussed later is the distribution of housing costs that renters and owners are faced with, as reflected by the monthly rent or the price of the housing unit (if owned or being bought). Notable here, as shown in Table 11, is the large number of housing units under $10,000 and rents under $60. The proportion of housing units below $10,000 for moves since 1960 is lower, of course, reflecting both inflation and increased costs for improved living units.

Full families (married couples with children) are more likely to have higher priced housing units, while married couples, broken families, and single people tend to have lowest priced accommodations. However, the full family with the oldest child at least six years old is represented more frequently than any other family type in each price category. For renters, full families and married households have a greater tendency than other household types to be living in higher rent places. For households who own or are buying, housing units less than $10,000 are most common with all age groups except those in which the head of the household is 25 to 34 years old, for whom the $15,000 to $19,999 price level is predominant, and those whose head is 45-49 years old, in which the units over $20,000 predominate. For households who are renting, those under 45 tend to pay more rent than those 45 and over.

The association between income and present housing costs are very strong; $\tau_c = 0.40$ for owners and buyers and for renters, both significant at 0.001 level. The price level under $10,000 is most common for all income levels under

TABLE 11

HOUSING COSTS

CURRENT HOUSING COSTS FOR OWNED-BUYING AND RENTING HOUSEHOLDS (N = 1433)

OWNED OR BUYING			RENTING		
APPROXIMATE PRICE ($)	NO. OF HOUSE-HOLDS (N=874)	% OF TOTAL	RENT ($)	NO. OF HOUSE-HOLDS (N=559)	% OF TOTAL
Under 10,000	323	37.0	—	—	—
10,000-12,499	107	12.2	Under 60	208	37.2
12,500-14,999	131	15.0	60-99	235	42.0
15,000-17,499	94	10.8	100 and over	116	20.8
17,500-19,999	75	8.6			
20,000 and over	144	16.5			

HOUSING COSTS ON MOVES SINCE 1959 FOR HOUSEHOLDS WHO OWN OR ARE BUYING

APPROXIMATE PRICE ($)	NO. OF HOUSEHOLDS (N=369)	% OF TOTAL
Under 10,000	85	23.8
10,000-12,499	39	10.6
12,500-14,999	53	14.4
15,000-17,499	44	11.9
17,500-19,999	49	13.3
20,000 and over	99	26.9

$8,750. Housing prices $15,000 to $19,999 are most common for the income level $8,750 to $12,499. Prices over $20,000 are most common for incomes over $12,500. The price category under $10,000 is the most common for both white and nonwhite households. However, for the sample number of nonwhite households who are buying or who own (only 85 households), the category under $10,000 is much more common than for whites. A total of 64.7 percent of the nonwhite purchased housing units fall into this category, as compared to only 34.0 percent of the white units. Monthly rental comparison between white and nonwhite households shows that half again as large a percentage of nonwhites pay under $60 and less than half the percentage of nonwhites pay over $100.

Residential Dissatisfaction

As is characteristic of several studies of housing and neighborhood satisfaction, the results of this survey indicate that most households are reasonably well satisfied with their housing. This kind of result elicits reservations from many observers, who expect higher rates of dissatisfaction. It is often stated that people do not consciously recognize the features or combinations of features that elicit positive or negative feelings, and therefore direct questions about dwelling or neighborhood preferences are not true reflections of satisfactions or dissatisfactions. Unquestionably, more sophisticated indicators are needed.

At the outset, it is noted that the proportion of responses indicating satisfaction is consistently far greater than the proportion of responses reflecting dissatisfaction, for all of the 41 questions which touch on the subject. Eighty-eight percent of the households say they are satisfied with their dwelling unit; 87 percent with their neighborhood, and 79.5 percent with the accessibility of their residential location.

Responses indicating over-all satisfactions are strongly associated with separate responses concerning specific aspects of the neighborhood and the dwelling unit. This is reflected in several ways. First, the greater the number of specific aspects of neighborhood or dwelling unit which were satisfactory the greater the probability was that the respondent was also satisfied over-all with the neighborhood or dwelling unit. Second, the separate associations between over-all satisfaction and satisfaction with each specific aspect consistently show statistical significance for the neighborhood and the dwelling unit.

Association between over-all satisfaction-dissatisfaction and specific satisfactions and dissatisfactions is much weaker for accessibility than it is for neighborhood and dwelling unit. Table 12 shows this clearly. Fully 80 percent of those who answered the equivalent of satisfied with accessibility to none or only one of ten activity places were nevertheless satisfied over-all with accessibility. Only 3.6 percent were dissatisfied. In comparison, those who answered from one to six positively still had from 4.3 to 7.0 percent dissatisfied and less than 80 percent satisfied.

A factor analysis was performed on the responses to the list of questions regarding satisfaction, in order to determine any tendency for clustering. The results of the analysis are summarized in Table 13. Variables with factor leadings of less than 0.4 are not listed in the table, but all those above 0.3 were considered in naming the factor. The variables divided into four factors which are fairly distinct both statistically and conceptually. Each factor describes a basic dimension of satisfaction, which is composed of a number of specific variables which are strongly interrelated. The first factor essentially concerns satisfaction with the quality of the neighborhood. The variables comprising this dimension of satisfaction include the density and exterior appearance of dwelling units, environmental conditions such as noise and congestion, and the characteristics of the people in the neighborhood.

The second factor consists of satisfactions with accessibility of the home to specific activities—grocery shopping, shopping center, doctor's office, hospital or clinic, and downtown. It is interesting and somewhat surprising that accessibility to work and to schools, which are traditionally assumed to be major concerns of the household, do not show up here. Rather, the emphasis is on the convenience to the household of personal and retail services.

The third factor concerns satisfaction with the interior of the household's dwelling unit. The most important concerns are with the total number of rooms in the dwelling and the number of bedrooms. It is obvious that when considering their satisfactions most households differentiate the interior of the dwelling from its exterior appearance and the yard or open space that goes with it. Exterior appearance and yard tend to be related to satisfaction with the quality and character of the neighborhood rather than with the dwelling unit.

The fourth factor concerns satisfactions with public services and facilities—fire protection, police protection, sewerage, water supply, and parks and playgrounds.

Several variables aligned themselves in an unexpected way. Over-all dwelling unit satisfaction, for example, aligned itself with the neighborhood satisfaction factor rather than the dwelling unit factor. So do three other dwelling unit variables, all of which refer to the exterior of the unit—size of yard, age of unit, and exterior appearance. A second unexpected result of the factor analysis was that over-all satisfaction with accessibility failed to align itself clearly with any factor. After rotation, its factor loading on factor four—neighborhood services—was higher than the loading on the accessibility factor. Before rotation its highest loading was on the neighborhood quality satisfaction factor. Clearly, respondents seem to have several things in mind when responding to this question—the least of which is time-distance to household activity places. A third interesting finding was the distinction between the social or aesthetic aspects of the neighborhood loaded on factor one and the service level aspects of the neighborhood which formed factor four. Social-aesthetic aspects and service level aspects appear to be two fairly independent aspects of a person's image of his neighborhood, or at least his satisfactions with it.

Dissatisfaction with Housing Circumstances Related to Household Characteristics

Examination of the variation in satisfaction with respect to geographic region, standard metropolitan statistical area

TABLE 12

ASSOCIATION BETWEEN OVER-ALL SATISFACTION WITH ACCESSIBILITY
AND NUMBER OF POSITIVE RESPONSES TO SPECIFIC ACTIVITY PLACES

OVER-ALL SATISFACTION WITH ACCESSIBILITY	PERCENTAGES OF RESPONSES FAVORING "ABOUT THE SAME AS PRESENT PLACE" CONCERNING DESIRED DISTANCE TO TEN ACTIVITY PLACES INCLUDING WORK, SHOPPING AND OTHER ACTIVITY PLACES				
	0-1 (N=387)	2-3 (N=241)	4-5 (N=243)	6-7 (N=254)	8-10 (N=350)
Entirely satisfied	81.1	74.3	71.6	79.9	88.5
Fairly satisfied	15.2	18.7	22.6	15.7	9.4
Dissatisfied	3.6	7.0	5.8	4.3	2.1

$\tau_c = -0.05$, significant at the 0.01 level.

TABLE 13

SUMMARY OF FACTOR ANALYSIS OF MEASURES OF SATISFACTION

COMPONENT	CLUSTER OF VARIABLES	COMPONENT LOADINGS AFTER VARIMAX ROTATION	VARIANCE (%)	
			VARIMAX ROTATED (%)	UNROTATED (%)
1	*Neighborhood Satisfaction: Appearance and Status*		43.0	55.8
	Reputation	0.739		
	Cleanliness	0.732		
	Kind of people	0.706		
	Over-all neighborhood satisfaction	0.689		
	Condition of dwelling unit	0.685		
	Quietness	0.683		
	Privacy	0.649		
	Size of yards or grounds on street	0.640		
	Over-all dwelling unit satisfaction	0.510		
	Friendliness of neighbors	0.471		
	Condition of the streets	0.465		
	Age of respondent's dwelling unit	0.458		
	Amount of traffic	0.432		
	Size of respondent's yard	0.427		
	Exterior appearance of respondent's dwelling unit	0.407		
2	*Satisfaction with Accessibility*		14.5	14.6
	Time-distance to doctor's office	0.526		
	Time-distance to grocery store	0.514		
	Time-distance to shopping center	0.512		
	Time-distance to hospital or clinic	0.490		
	Time-distance to downtown	0.404		
3	*Satisfaction with Interior of Dwelling Unit Itself—Particularly Space*		19.4	14.1
	Number of rooms	0.718		
	Number of bedrooms	0.714		
	Size of rooms	0.482		
	Storage space	0.474		
	Arrangement of rooms	0.447		
	Number of bathrooms	0.415		
4	*Satisfaction with Neighborhood Services*		15.3	7.8
	Fire protection	0.543		
	Police protection	0.537		
	Sewage system	0.464		
	Parks and playgrounds	0.456		
	Water supply system	0.442		

size, central city and suburb, and households of various characteristics shows that dissatisfaction appears to be more common in young households, in larger households, in nonwhite households, and in households that are renting. Central city residents are also more inclined to be dissatisfied with neighborhood and dwelling unit, but not with accessibility.

The variation in dissatisfaction for different aspects about residential accommodations is summarized in Table 14. Most strongly associated with over-all dwelling unit satisfaction is type of dwelling unit and the outside and inside appearance of the dwelling unit. Over-all satisfaction is strongly associated with most neighborhood aspects except type of traffic on the street. Satisfaction with accessibility is moderately associated with time-distance to most activity places, but strongly associated with number of vehicles available to the household and whether public transporta-

tion is used. Dissatisfaction with accessibility is more common in households where few or no vehicles are available and when public transportation is used regularly.

Dissatisfaction with Dwelling Type

Although greater proportions of householders are dissatisfied in apartments than in single-family units, there are some significant relations between household type and dwelling unit type which exaggerate these general tendencies. Families composed of married couples with children, households whose heads are under 35 years of age, and large households (5-7 persons) are the groups most dissatisfied with apartment living (47.5 percent, 32 percent, and 45.9 percent, respectively).

Dissatisfaction with Number of Rooms

Although greater proportions of households are dissatisfied

TABLE 14

ASSOCIATION BETWEEN RESIDENTIAL SATISFACTION
AND TYPE OF RESIDENTIAL ACCOMMODATION

ASPECT OF DISSATISFACTION AND KIND OF RESIDENTIAL ACCOMMODATION	INDICES OF ASSOCIATION WITH DISSATISFACTION		
	χ^2 SIGNIFICANCE LEVEL	τ_c	τ_c SIGNIFICANCE LEVEL
Over-All Dissatisfaction with Dwelling Unit and:			
Type of dwelling unit	0.001	—	—
No. of rooms	0.01	−0.07	0.001
No. of bedrooms	NS	−0.04	0.05
Price of dwelling unit	NS	—	NS
Size of yard	0.05	−0.04	0.01
Outside appearance	0.001	−0.16	0.001
Inside appearance	0.001	−0.08	0.001
Over-All Dissatisfaction with Neighborhood and:			
Type of d.u. on respondent's street	0.001	—	—
Appearance of respondent's street	0.001	−0.15	0.001
State of repair of d.u.'s on street	0.001	−0.15	—
Land use on respondent's street	0.001	—	—
Type of traffic on street	NS	—	—
Noise level on respondent's street	0.001	0.11	0.001
Size of yards on street	0.001	−0.08	0.001
Over-All Dissatisfaction with Accessibility and:			
Time-distance to grocery store	NS	—	NS
Time-distance to friends' houses	0.01	0.06	0.001
Time-distance to elementary school	NS	0.05	0.01
Time-distance to downtown	0.001	0.06	0.001
Time-distance to shopping center	0.001	0.08	0.001
Time-distance to park, playground	0.05	0.04	0.05
Time-distance to doctor's office	0.001	0.07	0.001
Time-distance to hospital or clinic	0.001	0.09	0.001
Time-distance to head's place of work	0.01	0.08	0.001
Time-distance to church	0.001	0.07	0.001
Number of vehicles available	0.001	−0.10	0.001
Whether bus transportation is available (no-yes)	NS	—	NS
Whether streetcar, subway or train is available	0.05	−0.05	0.01
Whether public transportation is used regularly	0.001	−0.12	0.001

in small dwelling units than in larger units, there are also significant relations between number of rooms and household types. Married couples with children and families with head of household under 35 years of age currently living in dwelling units of three rooms or less are the most dissatisfied. In general, dissatisfaction is directly related to household size. Households of three to four persons living in three rooms or less tend to be very dissatisfied (70 percent); households of five persons living in four rooms or less are equally dissatisfied (70 percent); and households of six or more persons are quite dissatisfied with five rooms or less (80 percent). It seems, for this sample at least, that there must be at least as many rooms in the dwelling unit as there are persons in the household if the household is to be satisfied.

Over-All Respondent Satisfaction and Rated Quality of Neighborhood

Neighborhood satisfaction tends to be consistently and strongly associated with an index of the quality of the respondent's street as obtained from interview ratings. Higher-quality neighborhoods by this index are those having a better general appearance, better repair of dwelling units on the street, a lower noise level, less traffic, and being more solidly residential in land use. Least bothered by lower levels of environmental quality are married couples without children, single-person households, and households with heads aged 55 or over. They fell in the less-than-25-percent-dissatisfied category with respect to "below average environmental quality" in the neighborhood where they lived. Those most bothered by poor environmental quality are households whose heads are under 25 years of age (70 percent) and households of SES level of 60 or higher (71 percent).

Neighborhood satisfaction also tends to depend on whether the respondent's place is relatively better or worse in appearance than other dwelling units on the street. The proportion of dissatisfied respondents is greater if the appearance of the remainder of the street is worse than his own place. This is not an exceptionally strong or consistent tendency and the interaction with the different household characteristics is irregular and not particularly strong.

PROSPECTIVE: PREFERRED TRADE-OFFS

The third and final perspective concerning residential moving behavior is obtained from direct statements of preference made by households who indicated moving intentions in the national survey. Responses cover both the neighborhood and the dwelling unit. Reported here are preferred trade-offs between neighborhood, dwelling unit, and accessibility; between inside and outside appearance; and between good schools and lower taxes, preferences for age of dwelling unit and neighborhood, floor arrangement, number of children in the neighborhood, and size of lot.

Neighborhood vs the Dwelling Unit and Accessibility

Respondents overwhelmingly chose neighborhood quality over accessibility. In the total sample, 71.1 percent would choose a very good neighborhood, but located where it would be difficult to travel to other parts of town, as compared to 26.2 percent who would choose a less desirable neighborhood but located where it would be very easy to travel to other parts of town. This response is consistent for all regions and metropolitan sizes and in central city as well as suburbs. It is also true for all household sizes, ages of heads, tenures, socio-economic levels, for nonwhites and whites alike, and for all types of families except the "pseudo-family" households (groups of adults living together, none of whom are married). The "pseudo family" and the miscellaneous household vote for the more accessible location at the expense of quality of the neighborhood (50 percent to 47.7 percent and 64 percent to 32 percent, respectively).

In spite of the consistency in direction, the differences in preference of the indicated categories of households are statistically significant. Table 15 shows the categories from each household type that are most neighborhood-oriented and those that are least.

Respondents also overwhelmingly chose neighborhood quality over quality of the housing unit—69 percent to 27.3 percent. This preference is even more consistent for all regions, metropolitan sizes, and for both central city and suburb, and for all family types, age groups, household sizes, SES levels, tenures and for both white and nonwhite. Some variation exists, however. In general, whites (72.4 percent), households who own or are buying (74.1 percent), and households who live in the suburbs (74.4 percent) have stronger preferences for neighborhood quality over housing quality than nonwhites (53.2 percent), households who are renting (62.4 percent), and who live in the central city (63.9 percent).

Inside vs Outside Appearance

Respondents rated inside appearance more important than outside appearance. Eighty percent would prefer a place that had a very nice appearance inside but less desirable outside appearance over a place that had a very nice appearance outside but less desirable appearance inside. Only 14.2 percent preferred the opposite. With the exception of tenure, this was such a consistent response among all regions, metropolitan sizes, and in the central city as well as in the suburbs, and for all household types, that χ^2 statistical tests were not significant. Concerning tenure, renters preferred desirable inside appearance to a desirable outside appearance more often than owners and buyers (renters 84.7 percent, compared to buyers, 79.3 percent, and owners, 75.8 percent).

Good Schools vs Lower Taxes

Respondents preferred a neighborhood with a better than average school system with higher than average taxes (78.3 percent) to a worse than average school system with lower than average taxes (15.2 percent). This preference is true of all types of households in all regions, metropolitan sizes, central city, and suburbs. Significant differences in strength of preference do exist for some household characteristics. Households of married couples with young children (94.8 percent), households whose head is between 25 and 29 years of age (93 percent), large households of

six or more persons (92.8 percent), and households who own or are buying have the strongest preference for better schools and higher taxes. Pseudo-family households (52.3 percent), households whose head is over 65 years of age (57.3 percent), one-person households (63.2 percent), and families who own their homes outright (64.6 percent) have the weakest, but still positive, preference for better schools and higher taxes over lower taxes and less than average quality schools.

Age of Housing Unit and Neighborhood

Respondents consistently preferred the contrasting combination of a new or fairly new house and a well-established neighborhood, a combination not likely to be available in the market. The proportions were as follows:

Housing Unit

Description	% Prefer
New	37.8
Fairly new, but has been lived in	36.7
Older place	12.8
No preference	12.8

Neighborhood

New	17.6
Well established	63.4
No preference	18.9

The preference for a well-established neighborhood is consistent for all geographical and household groups, although there is some irregular fluctuation between different age groups. Preference for housing fluctuates primarily between "new" and "fairly new," but it is irregular and generally not statistically significant.

Architectural Style: Modern vs Traditional

Modern architectural style is preferred by a slight margin over traditional (45.5 percent vs 37.6 percent), with 16.9 percent having no preference. This slight preference is true of all groups except households with SES levels from 60-69 and heads between the ages of 45 and 49. Those with the strongest preference for modern architectural style are renters, nonwhite households, households of low SES index level (10-19), and households whose heads are under 40 years of age. The strength of the preference of low-income, low SES, and nonwhite households for modern architectural style over traditional may very well represent a misinterpretation of the term "modern style" to mean modern, good quality housing and household equipment rather than a choice in style between housing of equal quality. However, there is a definite regular trend toward a lower preference for modern architectural style with a rising socio-economic status index value.

Floor Arrangement: All One Floor, Two Floors, or Split Level

One-floor housing units are the distinctly preferred ones

TABLE 15

HOUSEHOLD FACTORS AND PREFERENCE FOR NEIGHBORHOOD QUALITY OVER ACCESSIBILITY: STRONGEST AND WEAKEST

HOUSEHOLD FACTOR	DEGREE OF PREFERENCE FOR NEIGHBORHOOD QUALITY OVER ACCESSIBILITY		χ^2 SIGNIFICANCE LEVEL
	STRONGEST	WEAKEST	
Family type	Full family I 85.6%	Miscellaneous household [a] 32.0%	0.001
Age of head	Age 25-29 81.7% Age 30-34 80.3%	Age 50-54 60.4% and over 65 61.8%	0.001
Household size	5 persons 77.4%	1 person 55.3%	0.05
SES index	70 and higher 77.6%	9 and under 63.2%	0.05
Race	White 74.0%	Nonwhite 57.6%	0.001
Tenure	Buying 80.3%	Other 62.1% Renting 63.4%	0.001
Central city vs suburban location	Suburb 79.8%	Central city 63.0%	0.001
Percentage for total sample	71.1		

[a] Also weak were pseudo-households (47.7%), single-person households (55.3%), broken families (57.0%)

(68.9 percent), with two floors and split level being preferred by considerably fewer households (13 percent and 11.9 percent, respectively). The remaining 6.2 percent of the sample showed no preference.

There is considerable variation in strength of the preference, but no subgroups actually had more people preferring something other than a one-floor arrangement. Single-person households, households whose head is over 65 years of age, low SES level (10-19) households, and households owning their homes outright have the strongest preference for one-floor dwellings. Married couples with children at home, households whose head is 25-29 years of age, medium-high SES level households (60-69), and households who are currently buying their homes have the weakest, but still positive, preference for one-floor dwellings.

Number of Children in the Neighborhood

With respect to the presence of children in the neighborhood, preferences were for few children more often than many children (47.1 percent to 17.6 percent) for all family types, ages of head, sizes of household, SES index levels, tenures, and for nonwhites as well as whites. There is some variation in strength of preference indicated by the proportion in each subgroup electing the orthodox preference, but the item preferred is seldom changed.

SUMMARY OF PREFERENCES

This survey suggests that metropolitan households prefer:

(1) Better neighborhood quality, with either a less desirable housing unit or less accessible location over a less desirable neighborhood with either a better housing unit or better accessibility. (Overwhelmingly—approximately 70 percent to 27 percent.)

(2) A place that has a very nice appearance inside and less desirable outside appearance to a place that presents a very nice outside appearance but less desirable appearance inside. (Overwhelmingly—80.4 percent to 14.2 percent.)

TABLE 16

MOVES TO THE CENTRAL CITY AND SUBURBAN LOCATION AND CHANGE IN TENURE STATUS: INTRAMETROPOLITAN MOVES

TYPE OF MOVE	PERCENT OF PREVIOUS RENTERS WHO			PREVIOUS OWNERS WHO NOW OWN (N=254)
	NOW RENT (N=397)	NOW OWN OR ARE BUYING (N=430)	TOTAL (N=827)	
Central city to suburb [a]	21.7 (23)	78.3 (83)	— (106)	— (50)
Suburb to suburb	32.9 (77)	67.1 (157)	— (234)	— (104)
Suburb to central city	50.0 (11)	50.0 (11)	— (22)	— (7)
Stayed within central city	61.5 (286)	38.5 (179)	— (465)	— (93)

[a] Fifty of these 156 moves are uncertain. They may have come from other cities in the metropolitan area as well as from the central city.

TABLE 17

CHANGE IN TYPE OF HOUSING UNIT DURING MOST RECENT MOVE

PRESENT HOUSING TYPE	PREVIOUS HOUSING TYPE (PERCENT)			
	SINGLE FAMILY (N=658)	DUPLEX (N=229)	APART-MENT (N=384)	OTHER (N=70)
Single family	83.3 (548)	60.7 (139)	45.8 (176)	47.1 (33)
Duplex or row house	9.6 (63)	23.6 (54)	19.3 (74)	21.4 (15)
Apartment	7.1 (47)	15.7 (36)	34.9 (134)	31.4 (22)

TABLE 18

CHANGE IN HOUSING COSTS IN MOST RECENT MOVE

HOUSING COST	OWNERSHIP (N=315) (%)	RENTAL (N=451) (%)
Cost of present place less than previous place	8.9 (28)	23.9 (108)
Present place in same price level category as previous place	32.1 (101)	34.6 (156)
Cost of present place more than previous place	59.0 (186)	41.5 (187)

(3) Better than average schools with higher taxes to lower taxes and less desirable schools. (Overwhelmingly—78.3 percent to 15.2 percent.)

(4) A conflicting combination of a new or fairly new house together with a well-established neighborhood.

(5) Modern architectural style to traditional. (But barely—45.5 percent to 37.6 percent.)

(6) A housing unit all on one floor.

(7) Few children in the neighborhood.

(8) Large lots to small lots.

SUPPLEMENTARY TABLES

Tables 16 through 30 are appended to this chapter as general reference material dealing with preference patterns in selection of housing. The tables have not been specifically referred to in the chapter.

TABLE 19

ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND CHANGES IN HOUSING COSTS WHERE TENURE DOES NOT CHANGE

	OWNER BOTH PREVIOUS AND PRESENT PLACE			RENTER BOTH PREVIOUS AND PRESENT PLACE		
	χ^2 ANALYSES	KENDALL'S τ		χ^2 ANALYSES	KENDALL'S τ	
					(WHERE APPROPRIATE)	
HOUSEHOLD FACTORS	SIGNIFICANCE LEVEL LESS THAN:	INDEX OF ASSOCIATION, τ_c	SIGNIFICANCE LEVEL LESS THAN:	SIGNIFICANCE LEVEL LESS THAN:	INDEX OF ASSOCIATION, τ_c	SIGNIFICANCE LEVEL LESS THAN:
Family type at time of move [a]	0.001	—	—	NS	—	—
Age of head at time of move [a]	0.05	−0.12	0.001	NS	0.01	NS
Size of household at time of move	0.001	+0.22	0.001	NS	−0.01	NS
Income (present)	—	—	—	0.001	0.18	0.001
SES index (present)	0.01	+0.12	0.001	0.01	0.05	NS
Race	NS	−0.01	NS	NS	−0.03	NS
Present location in suburb or central city	0.001	0.23	0.001	NS	+0.06	0.05

[a] There is the possibility of considerable error in these measures for those whose last move was before 1961; results should be considered with caution.

TABLE 20

ASSOCIATION BETWEEN HOUSEHOLD FACTORS AND NUMBER OF ROOMS

| HOUSEHOLD FACTOR | χ^2 LEVEL OF SIGNIFICANCE | KENDALL'S τ | | NUMBER OF ROOMS | | |
		INDEX	SIGNIFICANCE LEVEL	3 OR LESS	4-6	7 OR MORE
Family type	0.001	—	—	Single person 46.4%	Full family I 78.7%	Extended family 34.0%
Age of head	0.001	0.04	0.01	Under 29 19.3%	—	—
Size of household	0.001	0.27	0.001	One person 46.4%	3-4 persons 76.1%	5-6 persons 33.2%
SES index	0.001	0.16	0.001	Under 10 20.7%	20-29 79.6%	60+ 31.9%
Income	0.001	0.32	0.001	Under $4,000 27.9%	$4,000-8,750 76.3%	$12,500+ 41.0%
Race	0.001	−0.17	0.001	Nonwhite 21.6%	—	White 22.7%
Suburban vs central city household	0.001	0.18	0.001	—	—	25.6%
Percentage for total sample				11.3	68.4	20.4

TABLE 21

PROPORTIONS OF RESPONDENTS WITH OVER-ALL
SATISFACTIONS OR DISSATISFACTION WITH
DWELLING UNIT, NEIGHBORHOOD
AND ACCESSIBILITY

	PERCENTAGE OF TOTAL (WITH DON'T KNOWS ELIMINATED)		
	SATISFIED OR ENTIRELY SATISFIED	FAIRLY SATISFIED	DISSATISFIED
Dwelling unit	88.1	N.A.	11.9
Neighborhood	87.3	N.A.	12.7
Accessibility	79.5	15.7	4.3

TABLE 22

ASSOCIATION BETWEEN OVER-ALL SATISFACTION
WITH DWELLING UNIT AND THE NUMBER OF
"SATISFACTION" RESPONSES TO SPECIFIC
ASPECTS OF DWELLING UNIT

	PERCENTAGE OF SATISFACTORY RESPONSES TO SPECIFIC ASPECTS OF DWELLING UNIT	
OVER-ALL SATISFACTION WITH DWELLING UNIT	1-5 (N=148)	6-12 (N=1319)
Satisfied	41.2	93.3
Dissatisfied	58.8	6.7

τ_c on this table: — 0.48, significance level 0.001.

TABLE 23

ASSOCIATION BETWEEN OVER-ALL SATISFACTION
WITH NEIGHBORHOOD AND THE NUMBER OF
"SATISFACTORY" RESPONSES TO
INDIVIDUAL ASPECTS

	PERCENTAGE OF SATISFACTORY RESPONSES TO SPECIFIC ASPECTS OF THE NEIGHBORHOOD	
OVER-ALL SATISFACTION WITH THE NEIGHBORHOOD	1-9 (N=83)	10-17 (N=1377)
Satisfied	10.8	91.9
Dissatisfied	89.2	8.1

τ_c on this table: — 0.56; significance level 0.001.

TABLE 24

ASSOCIATION BETWEEN RESIDENTIAL SATISFACTION AND HOUSEHOLD FACTORS
AND GEOGRAPHICAL LOCATION

	ASPECT OF RESIDENTIAL SATISFACTION AND INDICES OF ASSOCIATION [a]								
	DWELLING UNIT SIGNIFICANCE LEVEL			NEIGHBORHOOD SIGNIFICANCE LEVEL			ACCESSIBILITY SIGNIFICANCE LEVEL		
INDEPENDENT VARIABLE	τ_c VALUE	τ_c	χ^2	τ_c VALUE	τ_c	χ^2	τ_c VALUE	τ_c	χ^2
Household factors:									
Family type	—	—	0.01	—	—	NS	—	—	NS
Age of head	—0.07	0.001	0.05	—0.06	0.001	0.01	—0.04	0.001	0.05
Household size	0.06	0.001	0.01	—	NS	0.05	—	NS	NS
SES index	—0.04	0.05	NS	—0.04	0.05	0.05	—	NS	0.05
Race (white=1, nonwhite=2)	0.11	0.001	0.001	0.11	0.001	0.001	0.12	0.001	0.001
Tenure (own=1, buying=2, renting=3)	0.12	0.001	0.001	0.09	0.001	0.001	0.08	0.001	0.001
Geographical location:									
Region	—	—	NS	—	—	0.01	—	—	NS
SMSA	—	NS	NS	0.05	0.01	0.001	—0.06	0.001	0.001
Central city vs suburb	—0.09	0.001	0.001	—0.14	0.001	0.001	—0.05	0.01	0.05

[a] Positive value indicates increase in dissatisfaction is associated with an increase in the independent variable.

TABLE 25

HOUSEHOLD FACTORS AND PREFERENCE
FOR NEIGHBORHOOD QUALITY OVER
QUALITY OF HOUSING

HOUSEHOLD FACTOR	STRONGEST PREF.	WEAKEST PREF.	χ^2 SIGNIFI-CANCE LEVEL
Family type	NS	NS	NS
Age of head	NS	NS	NS
Household	NS	NS	NS
SES index	NS	NS	NS
Race	White 72.4%	Nonwhite 53.2%	0.001
Tenure	Buying 74.1%	Renting 62.4%	0.01
Central city vs suburb	Suburb 74.4%	Central city 63.9%	0.001
Percentage for total sample		71.1	

TABLE 26

HOUSEHOLD FACTORS AND PREFERENCE
FOR BETTER THAN AVERAGE SCHOOLS WITH
HIGHER TAXES VS LOWER TAXES AND LESS
THAN AVERAGE SCHOOLS

HOUSEHOLD FACTOR	STRONGEST PREF.	WEAKEST PREF.	χ^2 SIGNIFI-CANCE LEVEL
Family type	Full family I 94.8%	Pseudo family 52.3%	0.001
Age of head[a]	25-29 93.0%	Over 65 57.3%	0.001
Household size	6 persons 92.8%	1 person 63.2%	0.001
SES index	NS	NS	NS
Race	NS	NS	NS
Tenure	Buying 84.4%	Owners 64.6%	0.001
Central city vs suburb	NS	NS	NS

[a] There is a consistent decrease in the preference between every age group and the one next oldest after age 25.

TABLE 27

HOUSEHOLD FACTORS AND PREFERENCE
FOR MODERN ARCHITECTURE AND STYLE

HOUSEHOLD FACTOR	STRONGEST PREF.	WEAKEST PREF.	χ^2 SIGNIFI-CANCE LEVEL
Family type	Pseudo family 59.1%	Single person 38.4%	0.001
Age of head	Under 40 52.3%	40 and over 41.2%	0.001
Household size	NS	NS	NS
SES index[a]	10-19 level 50.4%	70 level and over 35.8%	0.001
Race	Nonwhite 61.4%	White 42.0%	0.001
Tenure	Rental 50.5%	Owners 41.9% Others 41.4%	0.001
Central city vs suburb	Central city 47.5%	Suburb 43.4%	0.001

[a] Definite trend toward less preference for modern with increasing SES level.

TABLE 28

HOUSEHOLD FACTORS AND PREFERENCE FOR
ONE-FLOOR ARRANGEMENT TO TWO FLOORS
AND SPLIT LEVEL

HOUSEHOLD FACTOR	% SHOWING PREFERENCE FOR ONE FLOOR		χ^2 SIGNIFI-CANCE LEVEL
	STRONGEST	WEAKEST	
Family type	Single person 94.5%	Full family 57.1%	0.001
Age of head[a]	65 and over 94.6%	25-29 50.0%	0.001
Household size[b]	1 person 94.5%	5 persons 60.4%	0.001
SES index[c]	10-19 level 82.8%	60-69 level 58.0%	0.001
Race	NS	NS	NS
Tenure	Owner 87.4%	Buyer 62.9%	0.001
Central city vs suburb	NS	NS	NS

[a] Fairly consistent increase in preference for one floor with increasing age.
[b] Fairly consistent decrease in preference for one floor with increasing household size.
[c] Fairly consistent decrease in preference for one floor with increasing SES index level.

TABLE 29

HOUSEHOLD FACTORS AND PREFERENCE FOR
FEW CHILDREN IN THE NEIGHBORHOOD TO
MANY CHILDREN

| HOUSEHOLD FACTOR | PROPORTION INDICATING PREFERENCE FOR FEW CHILDREN | | x^2 SIGNIFI-CANCE LEVEL |
	HIGHEST	LOWEST	
Family type	Pseudo family 61.4%	Full family II 42.7%	0.001
Age of head	60 and over 58.2%	29 and under 39.3%	0.001
Household size	2 and under 54.9%	7 or more 35.8%	0.001
SES index	NS	NS	NS
Race	NS	NS	NS
Tenure	Owners 55.9%	Renters 42.4%	0.01
Central city vs suburb	Central city 50.2%	Suburb 43.7%	0.01

TABLE 30

HOUSEHOLD FACTORS AND PREFERENCE FOR
LARGE LOTS

| HOUSEHOLD FACTOR | PROPORTION PREFERRING LARGE LOTS | | x^2 SIGNIFI-CANCE LEVEL |
	LARGEST	SMALLEST	
Family type	Full family I 86.7%	Single person 37.4%	0.001
Age of head	Under 30 87.0%	55 and over 39.0%	0.001
Household size	7 or more persons 84.4%	1 person 37.4%	0.001
SES index	NS	NS	NS
Race	NS	NS	NS
Tenure	Buying 70.8%	Own 47.6%	0.001
Central city vs suburb	Suburb 67.1%	Central city 58.9%	0.001
Percentage for total sample	62.8		

CHAPTER THREE

FINDINGS–RESIDENTIAL CHOICES OF MOVER GROUPS

In this chapter the analysis of residential choice is extended in a framework based on the present and previous location of the household. The approach taken here is to divide recent movers in the sample (those households whose last move was in 1960 or later) into mover groups based on both the origin and destination of the most recent move. This grouping forms a typology separating, for example, households who moved within a neighborhood in the central city of a metropolitan area from households who moved from the central city to the suburbs of a metropolitan area.

The reason for developing this kind of typology and using it for analysis of residential choice is closely related to the interest of the study in developing an approach to modeling residential location behavior and to hypotheses about residential choice decisions. Taking the latter first, it is reasonable to hypothesize that present location in a metropolitan area is significant in a household's choice of a new residence in at least two ways. Satisfaction or dissatisfaction with neighborhood, as opposed to the dwelling unit, may enter into the original decision to move and into the decision on where to seek new housing. Twenty-nine percent

of the 841 households in the sample who moved between 1960 and 1966 exchanged their dwelling unit for another house or apartment within their original neighborhood.

It can also be argued that familiarity with particular segments of the metropolitan area will affect the way a household goes about looking for another dwelling unit.

A major reason for using this typology of mover groups based on present and previous residential location is that, because intrametropolitan migration is such an overwhelming portion of all new residential locations by households in any given time period, it is extremely important for developing an approach to modeling residential location. Of the 841 households in the sample who moved between 1960 and 1966, 79 percent moved within the same metropolitan area. Only about 16 percent of the residential location decisions in this period involve intermetropolitan or nonmetropolitan to metropolitan area migration.

Ten mover groups have been identified, five each for central city and suburban households. For central city households, there is one group whose members moved within the neighborhood (intraneighborhood city movers);

one whose members changed neighborhoods but remained in the central city (freely moving city movers); one composed of newly formed households setting up home in the central city (new city households); one whose members came either from outside their present metropolitan area and/or state of residence and moved into the central city (outside region city movers); and, finally, one whose member households came from suburban towns or smaller cities within the same SMSA and settled in the central city (suburban to city movers). A similar number of mover groups were devised for the suburbs, the only differences being in the points of origin. The ten mover groups are summarized in Table 31.

What follows is a straightforward description and analysis of the composition of each of the mover groups according to selected characteristics of the member households and decisions on housing accommodations and location. It is hypothesized that each of the mover groups will have particular behavioral as well as socio-economic characteristics unique to it simply because specific motives, constraints, and attitudes are differently associated with each origin and destination group, and because particular subclasses of the population are more likely to be in some groups than in others. Ideally, it would be useful to hypothesize that if several relevant socio-economic characteristics are controlled for, members of different mover groups could be shown to act differently as a result of their previous experience, reason for moving, and relative knowledge of the market, among other reasons. Unfortunately, it was not possible to control for as many variables as would have been desirable, because when the sample of recent movers was divided into ten separate mover groups the size of some of the groups was too small for detailed analysis. It was possible to control for specific variables in the larger groups. The results of this analysis are summarized later in the chapter.

RECENT MOVERS: 1960-1966

At the outset it is useful to examine the households in the national sample who last moved between 1960 and 1966, distributed by the ten mover groups previously mentioned. Table 31 shows that of the 841 recent-mover households, almost one-fifth moved within their central city neighborhoods, whereas only 8 percent moved within their suburban neighborhoods. Altogether, therefore, more than one-quarter of all recent moves of households in the sample are very short-distance moves. The table also shows that less than 2 percent of all recent movers are moving into the central cities of metropolitan centers from the outlying suburbs or other towns within the SMSA of destination, while 18 percent of all movers came from other suburban towns and satellite cities within the same SMSA to other suburban communities. A cursory examination of the table shows that newly formed households comprise a relatively small portion of the members of the mobile metropolis; only 3 percent of the recent movers were newly formed households who set up home in the core of the metropolitan centers, while only 2 percent of the sample are new households who set up housekeeping in the suburbs.

TABLE 31

RECENT MOVER GROUPS BY ORIGIN AND DESTINATION

DESTINATION	ORIGIN	% OF ALL HOUSE- HOLDS
Central city	Same neighborhood, same central city	19.4
	Different neighborhood, same central city	23.2
	Newly formed households setting up initial home in central city	3.1
	Other SMSA and/or state	5.8
	Suburban towns or cities other than central city in same SMSA	1.8
Suburbs	Same neighborhood, same suburban community	7.8
	Different neighborhood, same suburban community	8.6
	Newly formed households setting up home in suburbs	2.3
	Other SMSA and/or state	9.8
	Suburban community or town different from that in which family is presently located, same SMSA	18.2

Household Composition of Mover Groups

One of the findings from this study, as in other investigations, is that the image of the typical American suburb as a homogeneous residential dormitory is not borne out in fact. Table 32 shows the household composition of each of the mover groups. Although there are some significant differences among distributions of family types between city-destined and suburban-directed households, it is clear that the nation's suburbs house a diverse population. It can be noted, for example, that although the five central city groups contain higher proportions of childless couples than do their suburban counterparts, in general it can be seen that intraneighborhood city movers and their intraneighborhood suburban counterparts contain the same proportions of childless couples; namely, 12 percent. Similarly, freely moving central city households and their suburban counterparts have very nearly the same distribution in the childless category.

The fact that the relative distributions of other household types do not vary significantly among particular city and suburban mover groups further emphasizes that the suburbs are not as narrow a slice of Americana as they are thought to be. Again, whereas 38 percent of the intraneighborhood city households are married couples with children older than six years of age, 42 percent of the intraneighborhood suburban group is so classified, hardly a significant difference. Also, although it might be expected that higher proportions of single-person households would be found in the cities than in the suburbs, there are significant clusters of single individuals in particular suburban groups. Nine percent of the freely moving city families are single-person households, whereas the comparable figure for the suburban group is 8 percent. The respective figures for

TABLE 32

HOUSEHOLD COMPOSITION OF MOVER GROUPS, 1960-1966 (PERCENT)

MOVER GROUP (ORIGIN AND DESTINATION)	MARRIED COUPLE, NO CHILDREN <6	MARRIED COUPLE, NO CHILDREN >6	EXTENDED FAMILY	MARRIED COUPLE, NO CHILDREN	BROKEN FAMILY	SINGLE-PERSON HOUSEHOLD	PSEUDO HOUSEHOLD	MISCELLANEOUS	TOTAL
Sururb to city (same SMSA)	00.0	26.7	0	40.0	20.0	6.7	0	6.7	18.0
Outside SMSA to city	22.4	28.6	4.1	23.6	6.1	8.2	0	2.0	5.8
New city households	38.5	11.5	3.8	38.5	0	7.7	0	0	3.1
Same city neighborhood (same SMSA)	14.1	38.0	8.6	12.3	7.4	14.1	2.5	3.1	19.4
Different city neighborhood (same SMSA)	14.9	36.9	8.2	18.5	8.7	8.7	1.5	2.6	23.2
Central city and suburb to suburb (same SMSA)	26.1	41.2	5.9	18.3	1.3	3.9	2.6	0.7	18.2
Outside SMSA to suburb	25.6	45.1	4.9	14.6	4.9	2.4	2.4	0	9.8
New suburban households	42.1	5.3	5.3	42.1	0	5.3	0	0	2.3
Same suburban neighborhood (same SMSA)	18.2	42.4	9.1	12.1	1.5	9.1	3.0	4.5	7.8
Different neighborhood, suburban (same suburban town)	17.8	43.8	4.1	17.8	4.1	8.2	2.7	1.4	8.7
All	19.9	37.6	6.7	18.4	5.9	8.1	2.0	2.0	100.0

intraneighborhood movers for the city and suburbs are 14 percent and 9 percent.

The table mignt be summarized by indicating that although there are, indeed, some relatively large differences in demographic characteristics among comparable city-suburban mover groups, there are, as well, some significant differences among the five central city mover groups and among the five suburban mover groups, each of the five groupings viewed as separate entities. Thus, for example, it can be seen that whereas 40 percent of the central city movers from other cities and towns in the same SMSA are childless couples, as mentioned earlier, only 12 percent of the intraneighborhood city movers are so classified. In the

TABLE 33

MOVES BY RACE, 1960–1966

$N=841$ White$=662$ Nonwhite$=179$

MOVER GROUP (ORIGIN AND DESTINATION)	PERCENT MOVES NONWHITE
Suburb to city (same SMSA)	12.0
Outside SMSA to city	22.0
New city households	31.0
Same city neighborhood (same SMSA)	37.0
Different city neighborhood (same SMSA)	39.0
Central city and suburb to suburb (same SMSA)	5.0
Outside SMSA to suburb	4.0
New suburban households	5.0
Same suburban neighborhood (same SMSA)	2.0
Different neighborhood, suburban (same suburban town)	8.0

suburban group, for example, 9 percent of the intraneighborhood movers are single-person households, while only 2 percent of the movers from other metropolitan areas are single persons.

There are fewer single-person households moving into suburban communities from other SMSA's than there are moving from one house to another within the same suburban neighborhood. What is of particular interest in a finding of this kind is twofold. First, would similarly situated households in the two respective mover groups act differently because of where they came from? And second, does the fact that there are relatively more of one type of households in one mover group than another perhaps imply that the differentiation of recent movers by points of origin and destination might be a more informative way of classifying mobile households than merely by grouping similar household and socio-economic classes together? These questions are the central focus of much of the discussion that follows.

Racial Characteristics of the Mover Groups

Although the demographic characteristics of suburban populations are much more diverse than is generally believed to be the case, it is still largely true that, with respect to race, this nation's suburbs are predominantly white. Table 33 shows that the proportion of nonwhite households within the freely moving suburban group is only 8 percent, whereas the comparable level of nonwhite representation in the central-city group is 39 percent. Similarly, for intraneighborhood movers, the respective figures for the city and the suburbs are 37 percent and 2 percent.

Because it seems reasonable to assume that a relatively large portion of the intraneighborhood city group represents a cross-sectional cut of the nation's ghettoes, it may be anticipated that in probing further into the nature of the

households comprising each of the mover groups and examining their previous and present housing circumstances, differences in their levels of satisfactions and in their attitudes about their housing and communities will become quite marked. In order to model these differences, it will be of interest to determine whether the probabilities of nonwhite families within the different mover groups obtaining standard housing or sufficient room at a given level of expenditure are different for different groups.

Distribution of Income Within Mover Groups

Another aspect of the analysis relevant to model building concerns the distribution of income within the various mover groups and whether significant differences exist between city and suburban groups and whether families of similar incomes, but within different mover groups, act differently in the marketplace. Table 34 shows that significant differences exist with respect to income levels between city and suburban groups, and to a lesser extent among the different city groups and suburban groups, respectively. For present purposes, the following two summary statistics for each group of families are of interest: first, the median income for the mover group as a whole, and second, the degree of poverty that is concentrated within any single group (namely, the proportion of families with current incomes below $3,000 per year). The first figure provides an indication of the general level of income within a group without the figure being affected by extreme incomes at either end of the income spectrum. The second figure is a general indicator of serious economic problems (and, perhaps, related noneconomic problems as well). Although retired families have not been removed from the sample in Table 34, they are not a significant enough proportion of any single group to seriously bias the calculations.

As might be expected, recent suburban movers have higher levels of income than do their central city counterparts. Group for group, city movers are poorer than mobile suburban families. Median incomes within the five central city groups do not differ greatly among themselves; nor do those of the suburban groups, except for newly formed suburban households whose income level is below that predominating generally. Median incomes for central city movers vary between $4,600 for intraneighborhood movers to a high of $5,700 for newly formed households. This latter figure can in large measure be attributed to the small sample from which it is derived and the fact that this particular mover group is more homogeneous than the other groups. For suburban mover groups, median incomes range from a low of $5,500 for newly formed households to a high of $8,200 for recent suburban movers arriving from other cities, towns, or suburban communities in the same metropolitan area.

If the extent of very low incomes within each mover group is examined, some insights can be gained into the strength of the constraints that might be operative within the different groups in the marketplace. For example, it is apparent that within the city as a whole, a relatively large proportion of recent movers are very poor. Fully one third of the families moving to the central cities from suburban cities and towns within the same SMSA's are poor. It was previously mentioned that suburban movers from similar points of origin were among the wealthiest, as a group, included in this survey. Only 4 percent of the latter group have incomes below $3,000. Within the central cities, also, one fifth of out-of-state or SMSA arrivals are poor; 30 percent of intraneighborhood families are below the poverty level and 20 percent of the freely moving central city households have annual incomes below the specified minimum.

Depending on one's predisposition, the extent of poverty within the suburbs can be considered surprisingly great or

TABLE 34

INCOME LAST 12 MONTHS FOR MOVER HOUSEHOLDS (FREQUENCY)

MOVER GROUP (ORIGIN AND DESTINATION)	N.A.	< $3,000	$3,000– 3,999	$4,000– 5,249	$5,250– 6,249	$6,250– 8,749	$8,750– 12,499	$12,500– 16,999	$17,000+	ALL
Suburb to city (same SMSA)	1	5	2	2	2	1	1	0	1	15
Outside SMSA to city	0	10	6	6	8	12	5	1	1	49
New city households	0	4	3	2	7	4	4	2	0	26
Same city neighborhood (same SMSA)	1	48	24	23	24	21	11	10	1	163
Different city neighborhood (same SMSA)	1	38	21	23	29	34	31	12	1	195
Central city and suburb to suburb (same SMSA)	1	7	3	14	23	36	39	18	12	153
Outside SMSA to suburb	0	8	4	6	7	20	21	7	9	82
New suburban households	0	3	3	2	3	6	1	0	1	19
Same suburban neighborhood (same SMSA)	0	12	4	4	10	16	9	6	5	66
Different neighborhood, suburban (same suburban town)	1	2	3	9	10	17	23	6	2	73
All	5	137	73	96	123	167	145	62	33	841

relatively small. The greatest concentration of poor families is within the intraneighborhood mover group, where 18 percent of the families have incomes below $3,000. This proportion dips to 16 percent for newly formed suburban households, and declines further to 10 percent for out-of-state or SMSA arrivals. It is interesting to note that for central city mover groups, while the level of poverty within the intraneighborhood group is 50 percent higher than that within the freely moving group, one fifth of the latter group are poor. In the suburban groups, the differences between the levels of poverty within the intraneighborhood group and the freely moving group are greater; in this case there is a factor of six. That is, whereas 18 percent of the intraneighborhood suburban movers are poor, only 3 percent of the freely moving suburban households are in such economic straits.

Socio-Economic Status of Member Households of the Several Mover Groups

Before proceeding with a description and analysis of the housing decisions of families within the different groups, it might be useful to summarize to this point, and to present a summary statistic which takes into account a variety of socio-economic characteristics of individual member households within each group. First, from the preliminary discussion it has been brought out that each of the mover groups is reasonably diverse with respect to·household composition. Although the suburban movers were probably not as homogeneous as many would expect, with respect to race they are predominantly white. It was also brought out that racial and income characteristics are probably the two most evident ways of generalizing about the differences thus far between the city and the suburban movers. Thus, using the mover groups that were selected, it was possible to capture a cross section of the nation's ghettoes in the intraneighborhood city mover group. It can

be mentioned here also, that the suburban mover group arriving from other cities and towns within the SMSA probably includes fairly large portions of the middle class that is and has been fleeing the central cities, whereas the central city group arriving from other metropolitan areas or states, given its racial characteristics and economic level, probably includes a fairly heavy input of rural and semi-rural immigrants. Given the high level of incomes of the out-of-state and/or SMSA suburban movers, it is reasonable to surmise that this group can be characterized as upwardly mobile middle-income households who have moved to new metropolitan areas for reasons of economic advancement.

If the reasoning concerning these characteristics is basically correct, median socio-economic status scores should vary accordingly among the different groups. Table 35 shows, for example, that, as might have been expected, the lowest median score (14) is for the intraneighborhood city group. The out-of-state suburban movers, having a median score of 61 (the highest of any group), confirms this hypothesis, whereas a median score of 45 for suburban movers from other cities, towns, and suburban communities within the same SMSA is reasonably consistent with expectations. For central-city-destined households from other metropolitan areas or from out of state, a median score of 29 is a bit higher than might have been expected if the rural or semirural input to that group were as great as might have been thought.

To recapitulate, the median socio-economic scores of the ten mover groups, although more clearly dividing into parts the city and the suburban families, also serve to differentiate, to a large extent, member households of different groups within each of the two broad political subdivision classes.

TABLE 35

DUNCAN SOCIO-ECONOMIC STATUS SCORES BY MOVERS FOR 1960-1966

MOVER GROUP (ORIGIN AND DESTINATION)	SCORE (PERCENT)							MEDIAN SCORE
	0-9	10-19	20-29	30-39	40-59	60-69	70+	
Suburb to city (same SMSA)	8.3	16.7	8.3	25.0	16.7	16.7	8.3	26
Outside SMSA to city	10.9	32.6	6.5	8.7	21.7	19.6	—	29
New city households	11.5	11.5	11.5	15.4	26.9	15.4	7.7	39
Same city neighborhood (same SMSA)	18.2	43.5	3.9	7.8	12.3	10.4	3.9	14
Different city neighborhood (same SMSA)	11.3	36.6	11.3	12.9	13.4	10.2	4.3	25
Central city and suburb to suburb (same SMSA)	6.0	23.5	6.7	6.7	26.2	17.4	13.4	45
Outside SMSA to suburb	3.9	17.1	3.9	13.2	21.1	17.1	23.7	61
New suburban households	15.8	21.1	5.3	9.7	25.8	5.3	21.1	35
Same suburban neighborhood (same SMSA)	11.3	19.4	4.8	9.7	25.8	12.9	16.1	45
Different neighborhood, suburban (same suburban town)	2.8	29.2	11.1	9.7	15.3	13.1	13.9	36

OUTCOME OF HOUSING CHOICES BY MOVER GROUPS

Responses to the question "Were you satisfied with your previous house and/or neighborhood?" are of interest because it is reasonable to expect that previous experience and attitudes about prior living conditions will tend to influence future market choices, assuming that choice is possible. Table 36 presents the proportions of each mover group that were satisfied and dissatisfied with their previous accommodations and neighborhoods. The greatest level of dissatisfaction is concentrated in the intraneighborhood city group. Next in terms of the level of dissatisfaction is the freely moving city group.

The table indicates that city movers were not the only unhappy group regarding their previous dwelling units. Thirty-six percent of intraneighborhood suburban movers were dissatisfied with their previous circumstances, which is only 4 percentage points below the level of dissatisfaction in the intraneighborhood city groups. Also 33 percent of the freely moving suburban households were unhappy, which is only 2 percentage points lower than the level attributed to the freely moving city households.

In almost all of the relevant mover groups, households tended to think more highly of their previous neighborhoods than they did of their previous particular dwelling units. (It was found, too, that higher proportions of households tended to consider such problems as crime, congestion, air pollution, and bad housing to be of much more significant proportions in their metropolitan areas than they did in their own neighborhoods.) The only mover group which did not think more highly of their previous neighborhood is the suburban group that came from other communities and cities within the metropolitan area. If, as was hypothesized, this group contains a reasonable proportion of central city migrants, it is reasonable to believe that although many were quite content with their previous dwelling units, the problems of the city and changing nature of many neighborhoods encouraged them to move to the suburbs.

Reasons for Moving

As indicated earlier, one would expect on an *a priori* basis a greater proportion of intermetropolitan moves to have been influenced by changes in employment location of family heads, or at least influenced by economic and job considerations, than would be expected in such other mover categories as intraneighborhood changes in residence. This is verified in Table 37 for both out-of-state and/or metropolitan moves to central cities and suburban communities. Of the 45 households who moved for reasons of job change, a total of 39 are accounted for in these two mover groups. In the case of central city movers from outside the region of destination, 26 percent moved for reasons of change in employment, whereas for the suburban-destined families about 32 percent moved for reasons of job change. Consistent with the hypothesis stated earlier, it might be expected that many of these families, in moving to another metropolitan area which is not familiar to them, in which their personal contacts are probably minimal and their knowledge of the housing market sketchy, would behave

quite differently than would other families of similar socio-economic characteristics in other groups.

It is more difficult to summarize the reasons for moving provided by households in the remaining mover groups. If the intraneighborhood city movers are examined as a group, it is found that 14 percent moved because they were forced to move and not because they decided to seek other housing accommodations. In some cases, present housing was condemned by local authorities for purposes of renewal activities; in others, houses were destroyed by fire, leases terminated or moves were made for other reasons beyond the immediate control of the household. This particular group of households accounts for one third of all forced moves. An additional one third are accounted for by the freely moving city households, ten of which had to move for reasons beyond their control. Another 20 percent of the forced moves were contributed by city and suburban movers arriving from other cities and towns within the same metropolitan area of residence. Seven percent moved to the central core and 13 percent to suburban communities.

Among the intraneighborhood city movers, in addition to the 14 percent who moved because they had to, almost one third moved because they desired more space, 9 percent because they wanted to own rather than rent, 10 percent because they wanted to reduce their housing expenditures, and 7 percent because they wanted a better place.

TABLE 36

EACH MOVER GROUP SATISFIED OR DISSATISFIED WITH PREVIOUS ACCOMMODATIONS AND NEIGHBORHOOD

MOVER GROUP (ORIGIN AND DESTINATION)	FEELING TOWARD PREVIOUS ACCOMMODATION		FEELING TOWARD PREVIOUS NEIGHBORHOOD	
	LIKE (%)	DISLIKE (%)	LIKE (%)	DISLIKE (%)
Suburb to city (same SMSA)	73.3	26.7	80.0	20.0
Outside SMSA to city	71.4	28.6	79.6	20.4
New city households	0	0	0	0
Same city neighborhood (same SMSA)	59.6	40.4	0	0
Different city neighborhood (same SMSA)	64.6	35.4	68.6	31.4
Central city and suburb to suburb (same SMSA)	71.1	28.9	68.9	31.1
Outside SMSA to suburb	79.0	21.0	80.5	19.5
New suburb households	0	0	0	0
Same suburban neighborhood (same SMSA)	63.6	36.4	0	0
Different neighborhood, suburban (same suburban town)	67.1	32.9	71.2	28.8
All	67.0	33.0	72.0	28.0

TABLE 37

MAJOR REASONS FOR MOVING FOR HOUSEHOLDS IN EACH MOVER GROUP, 1960-1966

MOVER GROUPS (ORIGIN AND DESTINATION)	LESS EXTEN-SIVE PLACE (%)	LESS SPACE (%)	JOB CHANGE OR RETIRE-MENT (%)	MORE CON-VENIENT LOCATION TO JOB (%)	OWNED INSTEAD OF RENTED (%)	MORE SPACE (%)	FORCED MOVE (%)
Suburb to city (same SMSA)	27	6	0	33	0	0	7
Outside SMSA to city	8	0	26	12	4	5	0
New city households	NA	NA	NA	NA	NA	NA	NA
Same city neighborhood (same SMSA)	9	2	0	3	9	32	14
Different city neighborhood (same SMSA)	9	2	0	5	8	26	10
Central city and suburb to suburb (same SMSA)	3	2	0	11	16	20	6
Outside SMSA to suburb	4	2	32	14	4	9	0
New suburban households	NA	NA	NA	NA	NA	NA	NA
Same suburban neighborhood (same SMSA)	2	3	0	0	13	32	10
Different neighborhood, suburban (same suburban town)	4	0	0	6	8	27	8

This distribution can be contrasted to that which resulted in the out-of-region arrivals to the central cities, where it can be seen that in addition to the 26 percent who moved for reasons of job changes, 8 percent wanted to lower their housing expenditures, 4 percent wanted to own rather than rent, 5 percent moved for more housing space, and 12 percent moved to be closer to place of work.

A summary of the modal reasons for moving for each of the mover groups must thus bring out that immigrants from other cities and towns within the metropolitan area who moved to central cities desired less expensive houses; immigrants from outside the metropolitan area moved because of job changes; intraneighborhood city movers wanted more space, as did their freely moving counterparts. In the suburbs, the modal choices were more homogeneous. In all but one group the most often-cited reason for moving was the need for more space.

Previous Tenure

One's future market behavior is related to and influenced by those decisions made in the past and the degree to which one was satisfied or dissatisfied with particular combinations of land, building, commuting, amenity, quality, and other characteristics of a housing package. This statement is not made as a reason for minimizing the importance of income, for example, as a determinant or influential variable in the nature of the locational decisions made by families. Nor is it meant to minimize the importance of the life cycle and the progression of stages most families go through between the stages of household formation and ultimate dissolution. It is merely meant to indicate that some of the unexplained variation encountered in the analysis of such things as housing expenditure is probably because of differences in prior experience and different conceptions of

needs or different scales of value, which might be interpreted to mean different housing preferences, together with differences in immediate circumstances, which might dictate different reactions in the marketplace.

If previous housing experience should act to influence future housing choices, it can be assumed, for example, that the question of whether a household has owned a dwelling unit before deciding to move might have a significant bearing on the nature of the housing decision made. Present tenure might play a significant role in determining whether a household is going to enter the market, and the time that it will do so. About 10 percent of all the recent movers stated as their reasons for moving the desire to own rather than to rent. Whether the moving process actually resulted in the transition from rental tenure to owner occupancy for all the households involved is another matter. Existing tenure patterns are useful points of departure for analyzing possible future housing choices. Thus, it is relevant to determine whether families with similar socio-economic characteristics will behave differently because of unique factors associated with the mover groups into which they fall. Changes in the nature of tenure associated with the different mover groups are of concern. Therefore, the distribution of tenure changes within each of the mover groups is examined next.

Table 38 presents the distribution of member households within each mover group according to whether they owned or rented their previous dwelling unit. As expected, the five central city groups have higher proportions of renters than do the suburban groups. In three of the five suburban mover groups, more than 60 percent of the member households rented their previous dwelling units. This is another indication that the suburbs are not as narrowly defined with respect to their stock of housing as is commonly believed

to be the case. In the central city groups, the proportion of previous renters reaches a high of 81 percent for intraneighborhood families, and a low of 66 percent for those moving in from other parts of the metropolitan area.

The suburban mover group from outside the metropolitan area and/or state was among the more well-to-do groups whose members moved, in many cases, for reasons of employment changes. It is this group that had the lowest level of rental occupancy before the most recent move. Only 44 percent of these households were previously renters.

Previous vs Present Tenure

What might be expected with respect to changes in tenure within and among the different mover groups? It might be hypothesized that because of the concentration of low-income households in the intraneighborhood city group, the vast majority of households there maintained their current rental tenure. But taking into account the fact that 9 percent of the households in the group expressed a desire to own rather than rent, and an additional 31 percent gave as their reason for moving the need for additional living space, it is to be expected that some degree of tenure change would occur from previous renter to present owner occupancy. What would not be expected would be large numbers of households who previously owned purchasing other homes within the same neighborhood.

In Table 39, it is seen that a relatively large proportion of households in this group did indeed sell their homes and purchase other homes within their existing neighborhoods. One possible explanation for the 13 percent of the families so classified is that perhaps some of the households within this group are locked in and unable to move freely in the larger metropolitan housing market. Thus, they either upgraded to some extent or repurchased homes after having been forced out of their previous homes. Also, because this survey represents a cross section of metropolitan area residents, it is conceivable that the diversity of housing

opportunity is much greater in some areas than others and that the decision to upgrade one's housing position by selling one's present house and buying another within the same neighborhood is made with a reasonable degree of freedom of choice.

Concerning the intraneighborhood group in core areas, expectations are more closely borne out. Two thirds of the households in this group are previous and present renters. Also, 15 percent of the group have elected owner occupancy after having been renters. This is among the lowest proportion of renter-to-owner tenure change of any of the mover groups. In the freely moving city group, the renter-to-renter group consisted of 55 percent of the households, rental-to-owner 20 percent, and owner-to-owner 15 percent.

TABLE 38

DISTRIBUTION OF MEMBER HOUSEHOLDS WITHIN EACH MOVER GROUP BY PREVIOUS TENURE

MOVER GROUP (ORIGIN AND DESTINATION)	RENTED (%)	OWNED (%)
Suburb to city (same SMSA)	66	33
Outside SMSA to city	73	27
New city households	0	0
Same city neighborhood (same SMSA)	81	19
Different city neighborhood (same SMSA)	74	26
Central city and suburb to suburb (same SMSA)	62	38
Outside SMSA to suburb	44	56
New suburban households	0	0
Same suburban neighborhood (same SMSA)	68	32
Different neighborhood, suburban (same suburban town)	61	39

TABLE 39

CLASSIFICATION OF MEMBER HOUSEHOLDS BY TENURE CHANGE, 1960-66

MOVER GROUP (ORIGIN AND DESTINATION)	RENT RENT (%)	RENT OWN (%)	OWN RENT (%)	OWN OWN (%)	OTHER (%)
Suburb to city (same SMSA)	60	7	7	20	7
Outside SMSA to city	61	12	6	11	10
New city households	0	0	0	0	0
Same city neighborhood (same SMSA)	66	15	2	13	4
Different city neighborhood (same SMSA)	55	20	5	15	5
Central city and suburb to suburb (same SMSA)	21	42	3	33	
Outside SMSA to suburb	23	21	6	31	
New suburban households	0	0	0	0	
Same suburban neighborhood (same SMSA)	45	23	1	23	
Different neighborhood, suburban (same suburban town)	31	30	6	28	
All	43	22	5	19	6

For newcomers to the central city from other parts of the metropolitan area, rental tenancy still predominates, with 60 percent of the households maintaining their previous rental status. Also, 20 percent retained their original ownership tenure, whereas only a small fraction of the households in this group changed tenures.

In the suburban groups, there is a good deal more switching of tenure, with larger proportions of households moving from the rental roles to being their own landlords. One might expect the largest proportion of owners to be situated in the group that arrived from other metropolitan areas, but this is not the case. Although the most common previous form of tenure for this group was owner occupancy, many of the families moved for reasons of job change into an unfamiliar market. The extent to which the resident households of this group switched from ownership to rental occupancy confirms the belief that circumstances influence market decisions. Even though the group has the highest median income of any group, and the highest median socio-economic status index, 16 percent of the households elected rental occupancy after having previously owned their own homes. In no other mover group is such a phenomenon so apparent. It was found that 23 percent of the households remained in their previous rental status, 21 percent moved from rental to owner occupancy, and 31 percent remained homeowners.

The suburban group which reflected the greatest amount of tenure switching from rental to owner occupancy is that which arrived from other suburban communities and towns within the metropolitan area, including the central city of the SMSA. Here 42 percent became owners after having previously rented. Thus, fully 75 percent of the households in this group are currently homeowners, compared to 52 percent of those moving to the suburb from outside the region, 46 percent of intraneighborhood suburbanites, and 58 percent of the freely moving group. In the five city groups, owner occupancy is highest in the freely moving group, which has a level of 35 percent, whereas the intraneighborhood group contains only 28 percent

owners. The group with the lowest level of owner occupancy remains the immigrants from other parts of the metropolitan area, having only 28 percent owner occupancy. These figures exclude newly formed households who have not previously had a home. If these were included, 25 out of the 26 newly formed families in the city would be renters, while 11 out of the 19 in the suburbs rent their homes.

Change in Household Size as an Inducement to Move

Mover groups differ with respect to previous tenure distribution as well as with respect to changes in tenure occurring as a result of moving. It is generally considered that changes in the life cycle or stages of family growth play a major role in the decision to alter one's housing circumstances. It is useful to look at the relative distributions of households that increased, decreased, or remained constant in terms of the number of members in the household between the time each household moved into its previous home and the time it decided to move again. For example, the desire for more space was an important reason for moving for many households in several of the mover groups. Table 40 presents the respective distributions of changes in household size by mover groups. In all but one of the relevant groups, most households experienced no change in size during their tenure in their previous homes. This was not the case with the households moving to the suburbs from other parts of the metropolitan area, in which only 45 percent remained constant in size during their stay in their premove homes. In general, the differences within the central cities taken as a whole are relatively minor. The proportions remained constant in household size, varying from a high of 65 percent in the intraneighborhood group to a low of 60 percent in the group which came from other parts of the metropolitan area. In part, this latter figure can be accounted for by the fact that 20 percent of the households in the group are classified as broken families, implying that one spouse has left the home. It is not possible to determine directly whether the change in household size occurred during the pre-

TABLE 40

CHANGE IN HOUSEHOLD SIZE ASSOCIATED
WITH MOST RECENT MOVE BY MOVER GROUP 1960-66

MOVER GROUP (ORIGIN AND DESTINATION)	NO CHANGE (%)	+1 MEMBER (%)	−1 MEMBER (%)	OTHER (%)
Suburb to city (same SMSA)	60	0	20	20
Outside SMSA to city	63	12	20	5
New city households	0	0	0	0
Same city neighborhood (same SMSA)	65	15	10	10
Different city neighborhood (same SMSA)	60	17	7	16
Central city and suburb to suburb (same SMSA)	45	26	7	22
Outside SMSA to suburb	54	17	14	15
New suburban households	0	0	0	0
Same suburban neighborhood (same SMSA)	55	28	8	9
Different neighborhood, suburban (same suburban town)	51	19	15	15

vious residence of households in the group. But the fact that 26 percent of the households in the group lost people, which is the highest proportion of any group, does seem to confirm the belief that this had actually happened.

In general, the proportion of households who lost family members over their period of residence in their previous dwelling unit was relatively stable at about 15 percent. However, there are much wider variations in the relative number of households who increased in size during their previous residence For the central city groups, the proportion that increaseo in size varies from a low of 13 percent for the immigrants from other parts of the metropolitan area, to a high of 26 percent for the freely moving households. For the suburban groups, the range is from a low of 30 percent for out-of-state or metropolitan movers, to a high of 40 percent for suburban movers from other parts of the same metropolitan area, including the central city.

These distributions seem to fit a reasonable pattern. For example, if a large proportion of the out-of-state households moved for reasons of job change, it is less likely that increasing space needs brought about by growing households would be an important factor for members of this group. Similarly, it is hypothesized that many of the households moving to the suburbs from other parts of the metropolitan area probably came from central cities and that additional living space was one of their reasons for moving. Thus, it should come as no surprise to find that as a group these households experienced the greatest growth in family size during their previous periods of residence.

If these distributions are contrasted with those showing the proportion of households in each group that gained, lost, or remained the same in terms of the number of rooms obtained in their new housing, a reasonably consistent relationship would be expected. Table 41 does indicate that the direction of change is as it was anticipated, but that in every case the proportion of families that gained additional rooms in their new units is higher than those that increased in household size. For recent movers to the suburbs from other parts of the metropolitan area, it is to be noted that whereas 40 percent of the families increased in size during their stay in their premove homes, 51 percent increased their room count in the moving process. However, this is in contrast to the intraneighborhood suburban movers, 32 percent of whom increased their household size during their premove tenure whereas 59 percent of these families increased their room count as a result of the move. Similarly, in the case of the freely moving central core households, whereas only 26 percent gained members during their previous tenure stays, 60 percent gained additional rooms as a result of the move.

If what seems to be such an overconsumption of additional living space as a result of the move can be understood, it is necessary to refer back to the discussion of changes in tenure which occurred as a by-product of the moving process. It might be expected, for example, to find increased space consumption to be a function of change in tenure from rental to owner occupancy because owner-occupied dwelling units are, on the whole, larger than those units available in the rental stock. Although the hypothesis sounds interesting, it is not borne out by the earlier table detailing changes in tenure. Whereas 60 percent of the freely moving central city households gained additional rooms as a result of the move, only 25 percent changed their tenure from rental to owner-occupancy, and a total of 35 percent of the households in that group now own their own homes. Both the proportion who changed tenure and the proportion who own their own homes are well below those in several of the other groups. For example, 42 percent of recent suburban movers from other parts of the SMSA became owners after having rented their previous residences. It can be seen from Table 41 that only 51 percent of them increased their living space.

The two factors not considered in the explanation of changes in living space are those of lags between the

TABLE 41

HOUSEHOLDS WHICH GAINED, LOST, OR REMAINED THE SAME IN TERMS OF NUMBER OF ROOMS OBTAINED IN NEW DWELLING

MOVER GROUP (ORIGIN AND DESTINATION)	DISTRIBUTION (%) BY ROOMS IN NEW DWELLING								
	−4	−3	−2	−1	0	+1	+2	+3	+4
Suburb to city (same SMSA)	7	13	7	20	27	0	20	7	0
Outside SMSA to city	4	14	4	20	16	20	12	6	0
New city households	NA	NA	NA	NA	NA	NA	NA	NA	NA
Same city neighborhood (same SMSA)	0	3	6	1	27	23	19	11	2
Different city neighborhood (same SMSA)	1	2	5	7	25	29	12	10	2
Central city and suburb to suburb (same SMSA)	1	3	7	7	31	22	16	6	6
Outside SMSA to suburb	3	3	5	14	31	17	10	9	3
New suburban households	NA	NA	NA	NA	NA	NA	NA	NA	NA
Same suburban neighborhood (same SMSA)	0	3	3	8	28	30	20	5	2
Different neighborhood, suburban (same suburban town)	1	1	3	15	21	24	4	14	3

changes in household size and the changes in the quantity of living space obtained, and the economic level of the particular households in question. There is a strong likelihood, for example, that households of higher socio-economic status are less likely to experience extended periods of disequilibrium between the quantities of housing space versus quantities of living space needed. Thus, for example, a large number of households moving to the suburbs from other suburban areas and other towns, including the central city, increased their living space in the process of upgrading their housing circumstances. But it is probably the case that the additional living space they obtained was not directly related to the need for one more bedroom for a newborn child but rather the addition of a guest room, den or family room. In addition, since many of the families in this group are of reasonably high economic levels, the chances are that their previous dwelling units, although not completely satisfactory to them, were more apt to be of sufficient size than the previous accommodations of households of lower economic status.

Many families in the intraneighborhood city mover group, who are among the poorest of all the recent movers, experienced increases in their room count as a result of their move. Perhaps the reason why there is still not a direct relationship between increase in household size and increase in room count within this and other groups is that many of the poorer families in the central cities were not in any way in individual equilibrium condition with respect to rooms and family size during their previous periods of residency. The lag between change in household size and change in housing space is greater for the poorer households. Thus, such households might have chosen to move, or might have been forced to move, several times in the past. It is possible that they did so without increasing their living space, or without increasing it sufficiently to bring them into a reasonable equilibrium.

The immediate discussion has been concerned with the relative imbalances between increasing household size and increasing quantities of living space. Also, a relatively large number of families decreased their quantities of living space as a result of the move. This proportion is at its highest for central city movers from other parts of the SMSA, which included many households who decreased in size as a result of the splitting up of the family. Again, just as the proportion of households who gained living space as a result of the move was consistently higher than the proportion that increased in family size, the proportion that lost living space is greater than the proportion that decreased in size. Thus, for the above-mentioned core group from other parts of the SMSA, 47 percent lost rooms whereas only 26 percent lost people. The lag between one's need for living space and actually giving up a portion of that space should differ for different income groups and for different mover groups. It would be expected, for example, that the gap between the proportion who lost people and the proportion who lost living space would be smaller for higher income households, particularly for those in the suburbs.

Although it is not as clear as might have been desired, the narrowing of the gap does indeed occur on a continuum from the city to the suburbs and from the relatively poor to the relatively wealthy. For example, whereas 16 percent of the households moving into the cities from other metropolitan regions and/or states lost people, 43 percent lost rooms as a result of the move. Although the median income of this group is not very low, if many of the households did come from rural or semirural areas, it is likely that they had been able to obtain larger living quarters than they were able to obtain for the same money in the cities. In the suburbs, there is another group for which generalizations do not hold; only in this case it is easier to explain why this is so. For suburban movers from other regions, it is found that whereas only 16 percent of the households lost people, 29 percent lost living space as a result of the move. Also, the median income of the group as a whole is the highest of all the groups.

Changes in Housing Expenditure: Investment vs Disinvestment

It might be assumed that it is almost universally the case that the end product of the mobility process is a change in housing circumstances to conform more closely to housing needs that change over time. But it is too often the case that the end product of the process is assumed to represent an upgrading of housing circumstances. According to the national survey, this is not typically the case. It appears that households who move are as likely as not to disinvest in housing, as well as to increase their housing expenditure. Table 42 shows the proportion of households in each mover group that increased and decreased their investments as a result of their most recent housing decision. These included only previous and present renters

TABLE 42

HOUSEHOLDS WHO DECREASED
THEIR INVESTMENTS AS A RESULT
OF MOST RECENT HOUSING DECISION[a]

MOVER GROUP (ORIGIN AND DESTINATION)	RENTERS (%)	OWNERS (%)
Suburb to city (same SMSA)	63	33
Outside SMSA to city	47	[b]
New city households	NA	NA
Same city neighborhood (same SMSA)	50	[b]
Different city neighborhood (same SMSA)	42	22
Central city and suburb to suburb (same SMSA)	27	10
Outside SMSA to suburb	22	22
New suburban households	NA	NA
Same suburban neighborhood (same SMSA)	32	0
Different neighborhood, suburban (same suburban town)	35	0

[a] Including only previous and present renters and previous and present owners; those switching tenure not included.
[b] Less than 1 percent.

and previous and present owners; those switching tenure are not included in this table. For renters, the proportion who disinvested range from a high of 63 percent for city movers arriving from other parts of the SMSA to a low of 22 percent of suburban movers arriving from other states or regions. For central core households from ouside the metropolitan area, 47 percent decreased their housing expenditures as a result of the move and one half of the intraneighborhood city movers did the same. For intraneighborhood suburban households, 32 percent disinvested and for the freely moving suburbanites, 35 percent reduced their housing investment.

While the figures for previous and present owners are generally small in several groups, a fairly high level of disinvestment even occurred for these households. For out-of-state suburban movers, as might be expected, disinvestment was the highest, amounting to 22 percent of all households who previously owned their own homes and purchased homes in their new communities. For freely moving central city households, the proportion of families that disinvested in owner-occupied housing was similar.

Present Levels of Rents and Values

Of the 841 recent movers, 452 presently rent their homes. Within the central city mover groups, present median rents range from a low of $60 for intraneighborhood families, to a high of $75 for recent arrivals from outside the metropolitan area. Even though out-of-state and region arrivals have the highest median rents of all central city mover groups, almost one third pay monthly rents of less than $49. The median rent of newly formed core households is $68 and for freely moving households it is $70.

In the owner-occupied stock, median values are higher in the suburbs than they are in the central cities. In the central cores, the highest median value of owner-occupied homes is $12,000 for households from outside the metropolitan area of destination. This is consistent with the rental statistics. For intraneighborhood movers the median value is $$11,000, whereas for their suburban counterparts it is $12,600. The highest median value for any group, $16,900, is enjoyed by the freely moving suburban households, who are followed closely by suburban households from other parts of the metropolitan area. Also, suburban movers from other metropolitan areas who choose to purchase another house purchased, on the average, less expensive homes than their incomes might permit. For that group the median value is $14,200. (See Table 43.)

Housing Conditions

It has long been recognized that housing quality is difficult to measure objectively; quality is both an absolute and a relative concept. Yet, there is a need in an analysis of this kind for some indication of the relative physical, structural, and environmental characteristics associated with the dwelling unit each of the respondents secured in the market and to determine whether there are any particular patterns that will help to differentiate the respective mover groups. From what was indicated earlier, it would be expected that housing quality (measured by interviewers familiar with the areas in which they conducted their interviews) would be

TABLE 43
DISTRIBUTION OF RENTS AND VALUES BY MOVER GROUPS, 1960-66 (PERCENT)

MOVER GROUP (ORIGIN AND DESTINATION)	LEVELS OF RENTS ($)									LEVELS OF VALUES ($)								
	<49	49-64	65-79	80-94	95-109	110-129	130-149	150-174	175-199	<10,000	10,000-12,499	12,500-14,999	15,000-17,499	17,500-19,999	20,000-24,999	25,000-29,999	30,000-34,999	35,000+
Suburb to city (same SMSA)	20	20	20	30	0	10	0	0	0	0	50	0	0	0	25	0	0	25
Outside SMSA to city	11	24	22	16	16	8	3	0	0	36	18	9	18	0	9	0	0	9
New city households	24	24	22	0	20	4	0	8	0	100	0	0	0	0	0	0	0	0
Same city neighborhood (same SMSA)	30	22	20	14	6	8	1	0	0	44	15	15	7	9	4	6	0	0
Different city neighborhood (same SMSA)	16	24	19	28	4	8	1	0	0	43	12	13	4	13	10	2	3	0
Central city and suburb to suburb (same SMSA)	13	18	10	8	11	24	3	8	5	13	11	15	15	17	16	4	2	7
Outside SMSA to suburb	3	11	16	22	6	22	0	0	20	11	0	15	13	15	20	9	9	8
New suburban households	0	46	9	9	0	36	0	0	0	28	14	29	14	14	0	0	0	0
Same suburban neighborhood (same SMSA)	23	13	13	3	17	13	3	4	10	6	10	16	16	16	13	6	3	13
Different neighborhood, suburban (same suburban town)	7	26	18	19	0	26	4	0	0	18	9	11	16	9	16	7	5	9

on the whole lower in the central cities than in the suburbs. But also to be expected would be high levels of substandard housing in the suburbs, considering that many people often generalize about the newness of suburban communities. Further, it would be expected to find the greatest concentration of substandard housing among intraneighborhood city movers, and perhaps among recent arrivals to the core cities from other parts of the SMSA. Table 44 presents the data on housing condition by mover group.

It was found that almost one half of all central city recent movers moved into substandard housing and almost one third of the freely moving central city group did not secure standard housing in the marketplace. Also, 23 percent of city arrivals from other parts of the metropolitan area moved into substandard housing, but only 18 percent of those arriving from outside the metropolitan area did so. It appears from these figures that this particular group is composed of fairly well-off families who are probably recent arrivals from other metropolitan cores, as well as low-income households who come from a rural or semi-rural background, thus explaining the high median rent, but the large portion paying very low rents. Also, it might help explain the high median rent and median values of homes obtained and the fact that almost one fifth of the group moved into substandard housing.

For suburban movers, the degree of substandardness varies between a high of 20 percent for intraneighborhood movers, to a low of 5 percent for newly formed households. In all other groups, the proportion of substandard units varies between 8 and 14 percent. Without question, the problem of substandard housing is not a problem of central cities alone.

Satisfactions

It is often assumed that households who have recently moved and thus have most recently adjusted their housing accommodations to their housing needs and changes in household size, economic circumstances, taste and preferences, etc., are probably as close to being well satisfied as

possible. The nonmoving population, on the other hand, is the victim of lags between the time that last housing decisions were made and the array of changes that come about with the passage of time. Consequently, the relationship between living space and household size might be out of adjustment, as might that between housing and income, social aspirations and neighborhood, style, design, and layout with tastes and preferences.

Although such an assumption cannot be tested rigorously with these data, some interesting insights into this area can be gained in the course of examining the nature of attitudes of the members of the different mover groups. It is relevant to scan Table 45, which gives the number of units casually and seriously considered by members of each of the groups before a decision was made to obtain the housing unit that was finally chosen. The table indicates that more than 40 percent of intraneighborhood city and suburban households did not look even casually at more than one unit before moving.

For intermetropolitan city families 68 percent did not seriously consider any other dwelling unit than the one ultimately obtained, while 45 percent of their suburban counterparts failed to consider any alternative accommodations seriously. Sixty percent of all groups did not seriously consider more than one dwelling unit.

Most of the households said that they looked at most units that would suit them. Such a general response is indicative of the serious constraints that are operative on broad segments of the mobile population when they enter the housing market. There are, however, differences among the mover groups. Table 45 shows that a higher proportion of city movers believe they did not have an opportunity to look at a suitable number of housing alternatives that might have been appropriate. Understandably, the highest proportion is for the intermetropolitan city families who came into a strange community and market. Yet, almost one third of the intraneighborhood city movers believed that they too did not look at a sufficient number of units before making a housing choice.

TABLE 44

HOUSING CONDITION BY MOVER GROUP

MOVER GROUP (ORIGIN AND DESTINATION)	SUB-STANDARD (%)	WELL MAIN-TAINED (%)	AVERAGE (%)	(%)
Suburb to city (same SMSA)	7	60	33	0
Outside SMSA to city	18	39	41	2
New city households	30	19	35	15
Same city neighborhood (same SMSA)	46	16	34	4
Different city neighborhood (same SMSA)	32	32	31	5
Central city and suburb to suburb (same SMSA)	14	38	31	17
Outside SMSA to suburb	11	49	32	9
New suburban households	5	26	58	11
Same suburban neighborhood (same SMSA)	20	32	32	15
Different neighborhood, suburban (same suburban town)	8	45	33	14

TABLE 45

"DID YOU LOOK AT MOST UNITS THAT MIGHT SUIT YOU?"
BY MOVER GROUP

MOVER GROUP (ORIGIN AND DESTINATION)	NA (%)	YES (%)	NO (%)	NO. OF UNITS SERIOUSLY CONSIDERED				
				NA	NONE (%)	1 (%)	2 (%)	3+ (%)
Suburb to city (same SMSA)	1	67	27		60	40	—	—
Outside SMSA to city	0	61	39		68	20	12	—
New city households	3	61	27	8	57	8	23	4
Same city neighborhood (same SMSA)	5	65	31		73	19	5	3
Different city neighborhood (same SMSA)	1	60	36		60	22	10	8
Central city and suburb to suburb (same SMSA)	4	78	20	1	55	29	11	4
Outside SMSA to suburb	1	76	32		45	35	15	5
New suburban households	0	79	21		64	10	10	16
Same suburban neighborhood (same SMSA)	2	80	17		68	18	6	8
Different neighborhood, suburban (same suburban town)	2	75	23		60	23	14	3

In looking at the respondents' beliefs of whether they secured enough living space as a result of their most recent housing transaction, it becomes increasingly clear that the assumed equilibrium conditions of recent movers are more apparent than real. (See Table 46.) In each of the ten mover groups, no less than 20 percent believed that they secured fewer rooms than were needed for adequate accommodations. In general, city movers believed they had inadequate space to a much greater extent than did the suburban households, although there is great variation within both composite groups. Central city immigrants, those coming from outside the metropolitan area, felt the living space constraints the most, whereas newly formed households were next. In the latter group, 35 percent believed that they secured inadequate quantities of living space; in the former, 47 percent felt the space constraint. Why newly formed families were unable to secure an adequate supply of living space might be explained on the basis of a lack of real knowledge and experience with the housing market and the economic costs of buying and renting shelter. But an explanation of why the former group felt most constrained is not as simple. One reason, perhaps, that immigrants to the central cores from other metropolitan areas or states experienced such a high degree of space shortage might be attributed to the fact that some of them came from rural and semirural areas in which the unit cost of living space is lower than in the central cities of metropolitan areas.

For suburban movers, the group that felt most constrained in terms of quantities of living space obtained is the intermetropolitan or interstate families. This can be explained in part by the already acknowledged fact that many of these households secured rental housing in their new communities after having sold their own homes as a result of changes in employment location. Since most owner-occupied housing provides more living space than rental quarters, the fact that 28 percent of the group believed they obtained too little room should not be surprising.

Relative Satisfactions with Recently Obtained Housing

In general there were positive responses to the question concerning the degree to which households were satisfied with their recently obtained housing. But 20 percent of the intraneighborhood central city households responded

TABLE 46

MOVER GROUP HOUSEHOLDS EXPRESSIVE THAT THEY HAD OR HAD NOT ACQUIRED SUFFICIENT QUANTITY OF LIVING SPACE AS A RESULT OF MOST RECENT HOUSING TRANSACTION, 1960-66

MOVER GROUP (ORIGIN AND DESTINATION)	NEED MORE ROOM (%)	SATISFIED (%)	NEED LESS (%)
Suburb to city (same SMSA)	33.3	66.7	0
Outside SMSA to city	46.9	53.1	0
New city households	34.6	65.4	0
Same city neighborhood (same SMSA)	29.4	67.5	3.1
Different city neighborhood (same SMSA)	23.4	75.5	1.0
Central city and suburb to suburb (same SMSA)	26.5	71.5	2.0
Outside SMSA to suburb	28.4	67.9	3.7
New suburban households	26.3	73.7	0
Same suburban neighborhood (same SMSA)	26.6	68.8	4.7
Different neighborhood, suburban (same suburban town)	26.4	72.2	1.4

in the negative, another indication of the constraints confronting many households in this group. Conversely, only 8 percent of their suburban counterparts are dissatisfied with their new homes. Such a city-suburban division into groups seems to hold for newly formed households as well. Table 47 shows that while only 5 percent of the suburban households are not happy with their latest market choice, 19 percent of the city households are dissatisfied. Similarly, 14 percent of the freely moving city households who moved out of their old neighborhoods, but remained in the central city, are unhappy with their recently obtained housing. But only 6 percent of their suburban counterparts are dissatisfied with their new dwelling units.

With respect to the differences in the over-all environment of the new neighborhood as compared to the old, again suburban households fared better than those who moved within or to central cities. And those moving within the city or the suburbs fared better than those entering either for the first time. Table 47 shows that 27 percent of central city migrants coming from other cities and towns within the SMSA believed their previous neighborhoods were nicer than those in which their new homes were situated.

Dissatisfactions with Newly Acquired Housing

A series of 17 questions were asked of each respondent concerning his feelings about such particular aspects of his new environment as the reputation of his new neighborhood, the kind of people living there, the general condition of the housing, and the degree of traffic and congestion within it. Respondents were given five alternative choices for each question, ranging from entirely satisfied to dissatisfied. In this connection it may be noted that even though there are many indications in other parts of

the survey that large numbers of households are not very pleased with their new accommodations, not only do recent movers in the present series of questions appear to be quite pleased with their housing choices, but also for the total universe, including those whose last move was before 1960, more than 1,100 of the 1,476 households said they are either entirely satisfied or fairly satisfied with each of the 17 environmental dimensions included in the questionnaire.

Because the degree of positive response to most of the 17 aspects of the recent housing choice was so great, it seemed that the most reasonable approach to the analysis of response was to determine if, among the dissatisfieds recorded, there existed a hard-core group of households within any particular group that consistently responded that they were dissatisfied with their new housing. For the analysis, it was decided that rather than isolate dissatisfactions by the nature of the particular source (i.e., poor housing, too much traffic, etc.), the number of households in each mover group who were dissatisfied with some minimum number of environmental dimensions would be aggregated. Then an attempt would be made to define the particular sources of the dissatisfactions. It was found that a sharp break occurred between the number of households dissatisfied with five or fewer aspects of their housing choices and those dissatisfied with at least six elements. The existence of six or more dissatisfactions was chosen to define the dissatisfied households. Table 48 shows that a total of 87 out of 841 recent movers fall into this dissatisfied class.

The relative distribution of dissatisfied households is not at all even. There was a low of none in either the central city group from other parts of the metropolitan area, newly formed suburban households and freely moving suburban households, to a high of 19 percent dissatisfied in the group

TABLE 47

LEVEL OF SATISFACTION WITH RECENT HOUSING DECISION, BY MOVER GROUP

MOVER GROUP (ORIGIN AND DESTINATION)	RECENTLY OBTAINED HOUSING (%)		PRESENT NEIGHBORHOOD PREFERENCE (%)			
	SATISFIED	DISSATISFIED	NICER	SAME	NOT AS NICE	NA
Suburb to city (same SMSA)	93.3	6.7	47.0	26.0	27.0	
Outside SMSA to city	87.8	12.2	32.0	42.0	26.0	
New city households	80.8	19.2	NA	NA	NA	100
Same city neighborhood (same SMSA)	79.5	20.5	NA	NA	NA	100
Different city neighborhood (same SMSA)	86.2	13.8	53.0	29.0	17.0	1
Central city and suburb to suburb (same SMSA)	91.4	8.6	62.0	28.0	9.0	1
Outside SMSA to suburb	90.2	9.8	52.0	NA	16	32
New suburban households	94.7	5.3	NA	NA	NA	100
Same suburban neighborhood (same SMSA)	92.2	5.6	NA	NA	NA	100
Different neighborhood, suburban (same suburban town)	94.4	5.6	68.0	29.0	1.0	2

of newly formed households who set up their initial home in the central cities. Only a slightly lower level of dissatisfaction is apparent in the intraneighborhood city group, where 17 percent of the households are so classified, and in the freely moving city group, where 16 percent of the recent movers are unhappy with their recent housing decisions.

In the suburbs there is a conspicuous absence of extreme levels of dissatisfaction, with the intraneighborhood movers being most unhappy but only 5 percent of the households so classified. The percentage falls slightly to 4 percent for households that moved from outside the metropolitan area.

It is not unreasonable to assume that a high degree of dissatisfaction with one's most recent housing decision might heavily influence one's future market activity, both with respect to housing and neighborhood preferences and the timing of the next move. Thus, following the tabulation and analysis of the attitudinal responses, the question concerning whether the respondent families would remain or move out of their present housing if given a choice was tabulated. It was anticipated that a strong degree of association would be found between the responses to this question and to those discussed. Obviously, many households do not have complete freedom of choice and, hence, the desire to move might not be simply equated with an expected change of residence in the near future. Yet it is useful to assess the degree to which recent movers feel compelled to admit a desire to move even if such a desire cannot be translated into action. Table 48 shows that there is fairly strong association between the level of dissatisfactions enumerated previously and the degree to which households would move if given a choice.

Of the five suburban groups, the desire to remain in recently secured housing predominates, but not exclusively. Those most willing to remain are the freely moving suburban households; but even within this group 20 percent would like to change their housing. Intraneighborhood suburban households are somewhere in the middle, with 30 percent wanting to move, while the greatest desire to change housing is concentrated in the newly-formed household group, where 37 percent would move if given the choice.

To determine the degree to which the unfettered desire to move if given a choice. Also, it was found that 35 per-actual plans to move in the immediate future, each household was asked whether a change of residence would occur within a year. One would expect the proportion of households expecting to move to be lower than those who would opt to move if given a free choice. The level of family income and other constraints alter the degree to which desire can be equated with a plan of action, but consistency between the answers to the two questions is reasonable to expect.

Sixty-nine percent of central city new households would move if given a choice. Also, it was found that 35 percent plan to move within a year. Similarly, whereas 49 percent of intraneighborhood city households would like to move, only 30 percent actually plan to move within the next twelve months. Table 48 gives the distribution of potential movers by mover group and indicates that in every case at least 11 percent of the member families do not think that they will remain in their present housing for more than an additional year.

TABLE 48

INDICATORS OF POTENTIAL MOBILITY BY MOVER GROUPS

MOVER GROUP (ORIGIN AND DESTINATION)	MOVERS DISSATISFIED WITH 6 OR MORE DIMENSIONS OF NEW HOUSING (%)	MOVER HOUSEHOLDS WHO WOULD MOVE AGAIN IF GIVEN CHOICE (%)			DISTRIBUTION OF POTENTIAL MOVERS, "DOES YOUR FAMILY PLAN TO MOVE NEXT YEAR?" (%)			
		MOVE	STAY	DON'T KNOW	NA	YES	NO	DON'T KNOW
Suburb to city (same SMSA)	0	13.3	80.0	6.7	0	0	100.0	0
Outside SMSA to city	12.0	61.2	38.8	0	0	37.0	59.0	4.0
New city households	19.0	69.2	30.8	0	0	35.0	50.0	15.0
Same city neighborhood (same SMSA)	17.0	49.1	49.1	1.8	0	30.0	62.0	8.0
Different city neighborhood (same SMSA)	16.0	41.0	54.9	4.1	0	22.0	72.0	6.0
Central city and suburb to suburb (same SMSA)	4.0	32.0	66.7	1.3	0	11.0	84.0	5.0
Outside SMSA to suburb	4.0	26.8	68.3	4.9	0	13.0	78.0	9.0
New suburban households	0	36.8	63.2	0	0	11.0	78.0	11.0
Same suburban neighborhood (same SMSA)	5.0	30.3	65.2	4.5	0	15.0	80.0	5.0
Different neighborhood, suburban (same suburban town)	0	20.5	78.1	1.4	0	10.0	86.0	4.0

Extent of the Suburban Bias

It is generally considered that the image surrounding the American suburban community has captured the minds and hearts of metropolitan populations. In order to ascertain how members of the different mover groups feel about the suburban myth (or reality) each respondent was asked whether he agreed or disagreed or had no strong feelings toward a series of statements, each of which contained some reference to the way of life, or status implications of suburban living. If, for example, a particular respondent agreed with such statements as "living in the suburbs gives you more freedom than living in the city," "the suburbs are more attractive than the city," and "it is better to live in the suburbs than the city because there is less delinquency there," one might define such a household as suburban-directed.

To determine how the several mover groups differed with respect to the degree to which they are suburban-biased, the proportion of households within each group that expressed agreement with at least eight out of the eleven suburban-related statements were recorded as possessing a suburban bias. Table 49 gives the results by mover group.

ACCESSIBILITY TO WORK AND OTHER ACTIVITIES

The relationship between place of work and place of residence of recent movers was explored in some detail because of the obvious importance of this relationship in several of the better known residential location models. In addition to relating the places of employment of chief wage earners to their recently acquired homes, this study also obtained information on access characteristics of recent movers' housing as to such activities, services and functions as parks and recreational facilities, shopping facilities for food and other goods and services, medical facilities, doctors and hospitals, churches, schools, and the homes of the respondents' best friends. It was intended to determine whether any major differences in the patterns of access existed with respect to the several mover groups, and to determine how important the journey to work was in the decision to locate in a particular neighborhood.

A decade ago, perhaps, one might have expected to find the vast majority of central city and suburban households working in the central cities of metropolitan America. Such is no longer the case. Of the five suburban mover groups, none contains a majority of households whose chief wage earners are employed in the central cities of the SMSA's of residence. Table 50 indicates that of the newly formed suburban households only 29 percent work in central cores, whereas 12 percent are employed in metropolitan areas other than those in which they live. For central city movers, as high as 85 percent of new households work in their cities of residence, whereas only 62 percent of the newcomers to the city from other metropolitan areas work in their central cities of residence. In this latter group, 18 percent are employed in other metropolitan areas.

The Journey to Work: Time-Distance as Measured by the Respondents

Before data are examined concerning the residential locations of recent movers as compared with different activity centers within the metropolitan areas of residence, it should be pointed out that the accessibility measures used are time-distance measures cited by the respondents themselves. Thus, the possibility exists that any objective measure of time-distance between place of residence and, for example, place of work might vary from the subjectively derived measure of how households perceive relative and actual distances.

If a frequency distribution showing time-distance to work for households in each of the mover groups is examined, it can be seen that 30 percent of all households are less than 10 min away from their jobs, another 30 percent between 10 and 20 min away, and another 20 percent between 20 and 30 min from their workplace. For white households in each mover group the median time-distance to place of work ranges from a low of approximately 8 min for central city households from outside the metropolitan area to about 18 min for suburban households from other parts of the SMSA. Table 50 shows the remaining median time-distance for white households in each of the mover groups, which cluster around a range between 13 and 15 min.

For the two mover groups that contain sizable proportions of nonwhite households (intraneighborhood city movers and the freely moving city households), median journey-to-work times are substantially higher than they are for similarly situated white household heads. For the intraneighborhood nonwhite households the median travel time is approximately 26 min, as compared to 13 min for the white households. For the freely moving nonwhite households, the approximate median travel time is 18 min, as compared with 13 min for comparable white households. In fact, for the former group of nonwhite movers more than 31 percent journey longer than 46 min to work, and 17 percent travel for a period greater than 1½ hr. For similarly situated white households, the respective figures are less than 3 percent and 6 percent. It should be noted that these time-distance measures are based on the mode of

TABLE 49

MOVER GROUPS INDICATING A SUBURBAN BIAS

MOVER GROUP (ORIGIN AND DESTINATION)	PERCENT
Suburb to city (same SMSA)	20
Outside SMSA to city	22
New city households	19
Same city neighborhood (same SMSA)	37
Different city neighborhood (same SMSA)	29
Central city and suburb to suburb (same SMSA)	31
Outside SMSA to suburb	33
New suburban households	58
Same suburban neighborhood (same SMSA)	36
Different neighborhood, suburban (same suburban town)	21

TABLE 50

PLACES OF AND DISTANCES TO EMPLOYMENT BY MOVER GROUPS

MOVER GROUP (ORIGIN AND DESTINATION)	WORK PLACE OF CHIEF WAGE EARNER (%)			MEDIAN TIME DISTANCE TO WORK BY RACE (MIN)	
	CENTRAL CITY	SUBURB	NOT IN SAME SMSA	WHITE	NON-WHITE
Suburb to city (same SMSA)	80.0	20.0	0	11.5	5.0
Outside SMSA to city	61.5	20.5	17.9	8.0	17.5
New city households	84.6	3.8	11.5	12.5	23.5
Same city neighborhood (same SMSA)	81.3	10.9	7.8	13.0	26.0
Different city neighborhood (same SMSA)	78.4	14.8	6.8	13.0	18.0
Central city and suburb to suburb (same SMSA)	42.4	44.4	13.2	18.0	17.5
Outside SMSA to suburb	38.0	36.6	25.4	17.5	46.5
New suburban households	29.4	58.8	11.8	12.5	2.5
Same suburban neighborhood (same SMSA)	39.3	55.4	5.4	15.0	25.0
Different neighborhood, suburban (same suburban town)	40.9	48.5	10.6	14.0	17.5

transportation customarily used; thus, some of the variation observed is a function of travel mode as well as residential and employment location.

Time-Distances to Other Activities

There is no striking difference between mover groups or between households in central cities and suburbs in the distribution of mean journey times to other activities of importance to them. Without reviewing mean time-distances for each activity for every mover group, a small number of activities can be used to illustrate the ranges of the time-distance values. For time-distance to a grocery store the range is between 5 min for newcomers to the central cities from other parts of the metropolitan area and 8.3 min for freely moving city households. For schools, newly-formed suburban households are closest with mean journeys of 5.8 min, while suburban families from other parts of the metropolitan area have the longest journeys, which average slightly more than 8 min. For parks, the shortest mean trip is also made by newly formed households in the suburbs, which is 5.7 min, while the longest journeys are made by newcomers to the central cities from other parts of the SMSA. Finally, the mean distance to downtown varies from a low of 15 min for the newcomers to the central cities from other parts of the SMSA and is longest for suburban households from other parts of the SMSA. The latter group's average time-distance to downtown is about 25 min.

The most interesting finding concerns the range of average time-distance measures to the central business district of the different mover groups. Thus, for example, for newly formed city households, intraneighborhood city households, and their freely moving counterparts, the mean travel times to downtown were 22.7 min, 19.8 min, and 19.7 min, respectively. On the other hand, in the suburban household category, the new arrivals from outside the metropolitan area, newly-formed families, and freely moving families all have lower mean travel times to the central business district than do the central city households. For the latter three groups, the respective mean travel times are 17, 18.7, and 18.7 min. Therefore, the time-distance measures are not only dependent upon the perception of travel time on the part of the individual respondents, but also on the mode of travel used to get to the central business district and a function, as well, of the quality of the transportation system, and the degree to which there is congestion when the respondents go downtown.

SUMMARY AND CONCLUSIONS FOR MODEL BUILDING

Throughout this chapter the necessity of knowing more about the housing consumer than his socio-economic characteristics has been emphasized as a requisite in developing a meaningful model of residential location. One meaningful method of learning more about the consumer is to attempt to determine where he came from, where he went, why he went there, and the nature of the constraints that influenced his pattern of behavior. In stressing this point it is acknowledged that some satisfactory manner must be devised to test the proposition that households in similar circumstances but in different mover groups will behave differently in the housing market; that is, show differences that could not be attributed to variations in income, household size or other socio-economic characteristics usually considered in analyses of this kind. The size of the sample has precluded the possibility of adequately testing this hypothesis, but data were organized in a manner so as to shed light on this proposition. In today's large metropolitan complexes, activities are sufficiently decentralized and sufficient transportation is available to permit households to live on the outskirts of the central cities and yet be closer, in terms of distance, to most im-

portant activity centers than those who locate in the central city. Such a finding, of course, must be further investigated before it can be taken into account in the development of any model of residential location.

The hypothesis that the different mover groups can be characterized by different patterns of market behavior controlling for particular socio-economic characteristics cannot be fully tested at this point, but it is possible to generalize about the members of the different groups. One can, for example, confidently assert that a large proportion of intraneighborhood city movers are representative of nonwhite households in the ghettoes. A very high degree of poverty was found among them. A relatively large number of them were displaced for one reason or another and acquired other living accommodations in their same neighborhoods. The mean journey to work of the nonwhite households in the group was found to be disproportionately high. It has been established that, as a group, these households exhibited a strong suburban bias, which is probably a blend of myth and reality about the suburbs within which many of them will never reside.

It is not possible to characterize each mover group in any shorthand way, while controlling for basic differences in the population composition of the groups themselves. A selective investigation of relationships between particular kinds of households and the housing they secured was undertaken. Although such a selective investigation leaves much to be desired, it can provide an indication of the potentialities of this approach and whether it ought to be pursued further. This is done by expressing the relationships between households and housing in terms of joint probability statements. These distributions are indicative of the probabilities of particular households obtaining particular kinds of housing rather than representing actual probabilities themselves.

Table 51 refers to two city and one suburban mover groups. The two city groups are intraneighborhood movers and freely moving families. The suburban group is made up of newcomers from other cities and towns within the metropolitan area. If income is held constant, the probability is given that a household in each of the income groups will be a married couple with children (or a married couple with no children, or a single-person household. The table also gives the probability of the household as a previous and present renter, a previous owner and present renter, or a previous and present owner.

About 52 pecent of the families whose current earnings are below $4,000 per year in the intraneighborhood city mover group are found to be married couples with children. If 100 who recently moved were selected at random from this pool of low-income families, about one-half would turn out to be married couples with children who are renting their new housing, and who had also rented previous housing. Also, about 3 out of the 100 families would be married couples with children who were currently owners of the housing into which they recently moved, and had previously been renters. Another 41 of the households would be married couples without children or single-person households who are currently renters and were previously renters. Finally, about 6 out of the 100 households would

be childless couples or single individuals; two would be previous renters and currently rent their new homes; two would be previous owners but who currently rent their housing; and two would be owners and currently own their own homes.

A random sample of 100 households in the freely moving city group, all of whom were members of the lowest income group, would show a similar distribution of household types but a different distribution of tenure patterns. Instead of finding 50 of the households categorized as married couples with children who rented their previous homes and currently rent their homes, only 34 would be so classified. Also, instead of 3 households with children being classified as previous renters and present owners, 6 would be found. In addition, whereas none of the intraneighborhood mover households in this lowest income group could be classified as couples with children who were previously owners and who purchased their new housing, 3 of the 100 households in the freely moving group would be. With respect to the remaining probabilities, only 32 out of 100 households in the freely moving group would be childless or single individuals who were previous renters and who are currently renters, as compared with 41 out of 100 in the intraneighborhood group. Whereas only 2 of the families chosen at random in the intraneighborhood group were single persons or childless couples who were previous owners and current renters, 9 such households would be selected in the freely moving group.

For the second income group, the range of which is $4,000 to $6,749, the two groups that can be compared are the freely moving city families and the suburban movers who came from other parts of the metropolitan area. Again, the reason these two groups are discussed is simply that the distributions of the two household classes within this particular income group are similar. This allows a comparison of the probabilities without controlling, in a strict sense, for household type. The greatest difference in terms of changes in tenure between the two mover groups is that rent-rent households predominate in the city group, whereas rent-own families predominate in the suburban group. The probability of selecting a married couple with children in the rent-rent category in each of the two groups, would be 60 chances out of 100, but for the suburban group it would only occur in 21 chances out of 100. Similarly, whereas the probability of selecting a married couple with children in the city group that could be classified as a previous and present owner would be virtually zero, about 21 out of the 100 families chosen in the suburban group would be precisely of that family type and tenure combination.

For the $6,750—$8,749 group, there are also significant differences in combinations of tenure experience in comparing intraneighborhood city households and the freely moving city group. Whereas the probability of picking a married couple with children that rented and currently rents is 0.24 in the intraneighborhood group, it is 0.34 in the freely moving category. Also, whereas virtually none of the intraneighborhood group are both married couples and previous owners and present renters, 3 of 100 households in the latter group can be so considered.

For the $8,750—$12,499 income group, the appropriate mover groups to compare are the same freely moving city group and the suburban movers from other parts of the metropolitan area. Here the greatest differences in probabilities are found in the rent-rent categories, in which the city group predominates. For example, whereas 25 of 100 households in the city group would be classified as married couples with children and previous renters who are presently renters as well, only 6 out of 100 in the suburban group would be chosen in a random selection of 100 households. Also, only 23 of 100 households would be couples with children who have become owners after having rented their previous homes in the city, whereas one half of the 100 households in the suburban group would be so classified. Also, a larger proportion of the sample selected at random in the city group were married couples with children who previously owned their homes and who currently own their recently acquired housing in the suburbs. For the former group, 29 out of 100 households are so classified, whereas only 21 of the 100 households in the latter group fit this description.

TABLE 51

PROBABILITIES OF TENURE CHANGE WITHIN INCOME GROUPS BY HOUSEHOLD TYPE, FOR SELECTED MOVER GROUPS

| | INTRACITY NEIGHBORHOOD MOVERS | | |
INCOME GROUPS AND TENURE STATUS	SAME CITY NEIGHBORHOOD	DIFFERENT CITY NEIGHBORHOOD	CENTRAL CITY AND SUBURB-TO-SUBURB
INCOME LESS THAN $4,000:			
Married Couples with Children			
Rent-Rent	0.496	0.341	
Rent-Own	0.025	0.059	
Own-Rent	—	0.059	
Own-Own	—	0.030	
Married Couples No Children or Single-Person Household			
Rent-Rent	0.414	0.324	
Rent-Own	0.022	—	
Own-Rent	0.022	0.089	
Own-Own	0.022	0.059	
INCOME $4,000—6,749:			
Married Couples with Children			
Rent-Rent		0.604	0.213
Rent-Own		0.129	0.366
Own-Rent		0.022	0.031
Own-Own		—	0.213
Married Couples No Children or Single-Person Household			
Rent-Rent		0.200	0.117
Rent-Own		0.022	0.029
Own-Rent		—	—
Own-Own		0.022	0.029
INCOME $6,750—8,749:			
Married Couples with Children			
Rent-Rent	0.239	0.339	
Rent-Own	0.334	0.339	
Own-Rent	—	0.034	
Own-Own	0.191	0.136	
Married Couples No Children or Single-Person Household			
Rent-Rent	0.095	0.071	
Rent-Own	0.095	0.030	
Own-Rent	—	—	
Own-Own	0.048	0.030	
INCOME $8,750—12,499:			
Married Couples with Children			
Rent-Rent		0.258	0.053
Rent-Own		0.226	0.504
Own-Rent		—	—
Own-Own		0.290	0.212
Married Couples No Children or Single-Person Household			
Rent-Rent		0.129	0.058
Rent-Own		0.065	0.087
Own-Rent		0.032	—
Own-Own		—	0.087

FINDINGS—PROSPECTIVE RESIDENTIAL MOBILITY

The original focus of this research was on individual preferences and choices of alternative housing types and environments. However, as the research problem was further explicated, it appeared that further specification was necessary. Although it is assumed that almost everyone can describe his housing and environmental choices, these preferences become more meaningful if they are associated with population redistribution. To build a model which reproduces the real world in detail is probably impossible; however, a model can be constructed that will interrelate the residential mobility behavior of individuals and households with dwelling and environment choices. It was decided that before a model incorporating significant choice factors and their relative weights could be constructed, residential movements needed to be analyzed in respect to their determinants.

Previous residential-mobility research has used several different perspectives involving several key decisions. One of the first decisions is whether to focus on retrospective moves—that is, residential changes that took place prior to the point of the researcher's intrusion—or to focus on future or prospective movements. Retrospective research focuses on previous moves—generally the last move—and the data have been derived primarily from the decennial census and the Current Population Survey (3). Prospective studies ordinarily stress potential mobility as indicated by choices or plans of spatial movement in the near or not too distant future (4, 5, 6). In several other instances, researchers have built upon potential mobility by reinterviewing a sample of respondents after a period of time has elapsed to determine the accuracy of predictions in regard to actual geographic mobility (7, 8, 9). Of course, the essential question here is which criterion measure is best suited for the researcher to make an accurate prediction of future population redistribution (10).

Once the dependent variable of residential movement is selected, the next major task is to delineate independent variables. Previous studies have diverged in their emphasis. Some stress structural or organizational aspects, some stress environmental conditions, and others are more concerned with social-psychological factors. Included under the structural frame of reference are such factors as family type, age, sex, income, occupation, and social participation. Environmental studies have focused more on location of and respondents' evaluation of housing and neighborhood. In most instances, social-psychological studies utilize the counterparts of structural variables. For example, the counterpart of the structural dimension of family type would be the social-psychological variable of familism, or the counterpart of housing location would be housing satisfaction and/or aspirations.

In general, regardless of the criterion measure chosen,

independent variables have been rather consistently selected. That is, there emerges from the literature a number of dimensions that appear to be crucial in explaining intra-metropolitan residential moves. Rossi (8), in the first major work devoted to residential mobility within a metropolitan area, hypothesized that there are a number of converging variables which help explain the phenomenon. Rossi stressed the life cycle, as well as dissatisfaction with housing and the social-psychological determinants of desires and plans for moving. A number of investigators have stressed social mobility, life styles, quest for community, familism, or social-mobility commitment. Others have assumed that there may be a variety of reasons for moving and that a convergence of several factors results in spatial mobility.

For some variables there are contradictory hypotheses. As an example, Whyte (11) and Hobbs (12) stressed the importance of occupational advancement as the important independent variable. In addition, Leslie and Richardson, focusing on the attitudinal level, hypothesized a strong relationship between residential mobility and social mobility commitment (5). On the other hand, Bell (13) and Butler, Sabagh, and Van Arsdol (4) in separate studies hypothesized a weak relationship between social-mobility commitment and residential moves. Partridge reported no association (14). One of the problems to date is that these studies have focused only on several subareas within a metropolitan area or on one metropolitan complex.

So far, few studies have brought together the structural and social-psychological elements in a systematic fashion. Most previous studies have stressed the salience of one type of variable to the exclusion of others. There are several notable exceptions to this statement. For example, Leslie and Richardson constructed a model that utilized the stage of the family life cycle and career pattern as a combined independent variable, with housing dissatisfaction as an intervening variable resulting in residential mobilty (5). Sabagh, Van Arsdol, and Butler also have stressed the importance of both structural and social-psychological variables (9). So far, however, analyses have been bivariate, or at the most simultaneously concerned with three variables.

In the remainder of this chapter, several approaches are used. After the criterion measure of residential mobility is established, a bivariate analysis testing specific hypotheses suggested by previous researchers is presented. Second, some of the interrelationships of these same variables controlling for age are examined. Third, propositions are presented which take cognizance of and summarize previously cited literature, as well as this analysis.

CRITERION MEASURES OF RESIDENTIAL MOBILITY

Almost the entire population has lived elsewhere than their

current residence at some time during their lifetime (*15*). This means that they were at one time or another retrospective movers. Residential mobility rates increase as the retrospective "period of mobility" is lengthened (*15*). A retrospective analysis of residential mobility, no matter what the time period, results in a minimum of two classifications—movers and nonmovers. In an analysis of prospective residential mobility emphasis is placed on potential or actual residential moves rather than past ones.

The arrows shown in Figure 6 account for alternatives of classification that may take place between retrospective and prospective analyses of residential mobility. Prior research has demonstrated that small segments of the population contribute to mobility rates through repeated moves (*16*). Therefore, the expectation is that some of the suggested alternatives are more likely to be expected than are others.

Previous prospective residential mobility research primarily has been concerned with the criterion measures of choice and plans. A third criterion measure, of course, is whether the household actually moves in the future; utilization of this criterion has been relatively rare and has not been completed for this research. Research under way will accomplish this objective in the near future (*17*). Accordingly, there are the two criterion measures of choice and plans of mobility available. Analyses carried out for this report and previous research suggest that all of the prospective criterion measures are positively interrelated (*10*). Even so, there are some differences, inasmuch as more persons report a choice to move than plan to move. When compared to actual residential mobility behavior, there are more expressions of both choice and plans. In predicting actual mobility, plans are a better indicator than choice (*10*). In the analyses that follow, plans are used as the primary indicator of prospective residential mobility.

In addition to retrospective and prospective dimensions of residential moves, further specification can be made in regard to the distance of move. Most demographic literature has focused on migration or long-distance mobility. Migration is generally defined as a move across some political boundary, such as a county line or standard metropolitan statistical area (SMSA) boundary. On the other hand, analyses of moves within metropolitan areas have been relatively few, even though they make up the bulk of the total movement of a population (*18*). In this regard then, residential moves can be divided into intrametropolitan elements or local and long-distance mobility (migration).

PROSPECTIVE RESIDENTIAL MOBILITY

In the following analyses focus is on prospective plans for residential mobility. No distinction is made between plans for local or long-distance mobility. However, it should be noted that different kinds of variables may be necessary to explain adequately retrospective as opposed to prospective moves and that previous research has demonstrated that different factors come into play in local and long-distance mobility (*19*). The analyses are divided into broad sections under the following:

1. Background factors.—Household composition, age of head of household, family type, income, occupation, employment status, length of residence in SMSA, some data about previous residential locations, tenure status, and housing value are some of the factors.

2. Current environmental conditions.—This includes condition of dwelling unit and neighborhood, type of dwelling unit, the social character of the neighborhood, etc., as reported by respondents and interviewers.

3. Accessibility opportunities to work, shopping, and various other community activity centers, transportation facilities available and utilized, and minutes to various facilities.

Retrospective Residential Mobility	Time of Interview	Prospective Residential Mobility
t_{1-n} · · · · · · · · · · · · · · · · · · t_{1-}	t_1	t_1 · · · · · · · · · · · · · · · · t_{1+n}
←——— Time ———		——— Time ———→

Actual Movers:

    a. Different House: Same Standard Metropolitan Statistical Area, Local Movers

    b. Different House: Outside Standard Metropolitan Statistical Area, Long-Distance Movers

Nonmovers:

Same House

In Residence Choice Plans

Actual Movers:

    a. Different House: Same Standard Metropolitan Statistical Area, Local Movers

    b. Different House: Outside Standard Metropolitan Statistical Area, Long-Distance Movers

Nonmovers:

Same House

Figure 6. Schematic presentation of retrospective and prospective spatial mobility: Local and long-distance moves.

4. Livability expectations and preferences, focusing on desires and preferences of household members in regard to physical qualities of house and neighborhood, as well as some attitudinal dimensions such as prestige and suburban and urban locations and desired distances to various services and amenities.

Background Factors

In one of the earliest reports concerned with population redistribution, Thomas suggested that most moves are related to important events in an individual's life history (20). As noted later, many major events of a person's life are changes in the life cycle, such as completing an education, obtaining or losing a job, being promoted, getting married or divorced, the birth of children, or of children reaching school age, or the departure of children upon reaching maturity (9). Given this general consideration, specifically higher rates of residential mobility should be recorded when life-cycle changes are occurring. Other background characteristics should loom as important factors. Beshers suggests that the main constraints in migration are the same as those of fertility; that is, the husband's job and household characteristics (21). The association of planned prospective residential mobility with the background factors indicated earlier is systematically examined as follows. Most of these factors fall under what has generally been called life-cycle changes, or the major constraints as hypothesized by Beshers. The relationships of background factors to planned residential mobility are summarized in Table 52.

Age of Head of Household.—Invariably, residential mobility studies stress that the age of head of household is associated with residential moves, with residential movement hypothesized as decreasing as age increases (4, 5, 8, 22). The argument is that mobility constraints are weaker during the younger years, hence the number of moves tends to be greater for younger persons. In addition, Glick suggested that in general the middle-aged years are the stable years insofar as occupations are concerned and that residential moves should be fewer then than at younger years and possibly in the retired years (23). For these reasons, and perhaps others, previous studies have shown quite consistently an inverse relationship between age and residential moves. Accordingly, the hypothesis here is that head of household's age is inversely related to moving plans.

As can be seen in Table 52, age of head of household is significantly related to whether a household plans to move within the next year or remain in the current dwelling unit. As in previous research and as hypothesized, households with younger heads are those most likely to have plans to move.

Size of Household.—Although there has not been extensive discussion of the relationship of size of household to residential movement, it appears that there is a general expectation that single persons are more likely to move than other household types, which suggests at least some relationship between household size and plans for moving. However, at least two different but related studies of residential movement conducted in the Los Angeles metropolitan area reported conflicting hypotheses regarding size of household —loosely classified. The first study was of two separate subareas: an urban and a suburban area. In this study, no difference was found in respect to household size; that is, comparing single-person households with households with more than one person (4). On the other hand, a follow-up study of a probability sample of the entire Los Angeles

TABLE 52

RESIDENTIAL MOBILITY BACKGROUND FACTORS

VARIABLE DESCRIPTION	χ^2	DF	SIGNIFI-CANCE LEVEL	DIRECTIONALITY
1. Age of head of household	56.26	1	0.001	Younger heads—movers
2. Size of household	15.10	6	0.02	Large households (with the exception of five persons)—of three or more movers
3. Full range of family types	58.14	8	0.001	Full families with an eldest child six and under, broken families, and a miscellaneous category—movers
4. Full families only: age of child ≤ 6 and ≥ 7	17.60	1	0.001	Full families with an eldest child six and under—movers
5. Race	23.67	1	0.001	Nonwhites—movers
6. SES index			NS	
7. Expectations of staying on current job	5.35	1	0.05	No—movers
8. Location of head's work place			NS	
9. Year moved into current place of residence	33.10	7	0.001	More recent inmovers—movers
10. Location of household before last move—all moves	18.51	4	0.01	Outside state and no previous home—movers
11. Location of household before last move—if move within same place			NS	
12. Tenure of current housing unit	151.06	3	0.001	Renters—movers
13. Price of current housing (owners and buyers)			NS	

SMSA suggested that single persons were more likely to move than households with more than one person (10). Each of these studies dichotomized household size and a great deal of information may have been lost as a result. Accordingly, it is hypothesized that household size is significantly related to whether a household plans to stay in or move from its current place of residence.

As given in Table 52, there are some differences in plans to move by household size. However, the findings are in contrast to both of the Los Angeles studies. For this sample, smaller households (that is, households with one or two persons) were less likely to have plans to move within the year following the interview (with the exception of households with five persons).

Family Type.—While age, size of household, and family type all are somewhat interrelated, each of these factors has been considered separately in respect to predicting residential movement. Previous writings suggest that family type is a determinant of residential moves. High rates of residential mobility typically are found in the period immediately following marriage and during initial stages of child rearing and when children leave the family. Within this context, it has already been reported that families with younger heads are more likely to be movers than families with older heads, and, of course, age is related to family type. In the following analysis, family type is considered separately from age in every instance except in the case of full families. Full families have been classified into two subtypes—those with an eldest child seven years and older and those with an eldest child six years of age or younger. This classification is based on the notion that if a family is going to move, it is more likely to do so prior to the child entering the school system. Accordingly it is hypothesized that full families with an eldest child six and under are more likely to have plans to move than full families with an eldest child seven or over. No hypothesis is made for the full range of family types (8, 24).

The results of the analysis are given in Table 52. It appears that full families with an eldest child six or under (one out of every three), broken families (three out of ten), and a residual category of families labeled miscellaneous (six out of ten), were most likely to have plans to move within the next year. In contrast, about one of five extended families, and less than one in four for all other family categories (such as married couples, single persons, pseudo-families, and full families with an eldest child seven or over) had plans to move.

When full-family subcategories only were contrasted, this study's hypothesis was borne out, with full families with an eldest child six or under being more likely to have plans to move than their counterparts with an eldest child seven or more.

Race.—No studies that the present researchers were aware of have specifically reported racial differences in respect to residential mobility. Accordingly, no specific hypothesis is presented here concerning the interrelationship. As shown in Table 52, however, racial differences are significant. Nonwhites—primarily Negroes—were more likely to be planning to move from their current place of residence than were whites. Obviously, follow-up data will indicate whether nonwhites have been able to actualize their plans. Plans may be laid, but to carry them out requires an available housing supply and economic resources. Whether nonwhites can find housing is one question; if they can find suitable housing, can they muster the resources to make the move?

Head of Household's SES and Occupationally Related Dimensions.—There is a conflict over the relationship of SES to residential movement. Some popular literature and research not devoted primarily to an analysis of population movement suggest that upper SES persons are more likely to move than are lower SES persons. Tarver has supported the hypothesis that at least some upper SES persons are extremely mobile. As a result of his analysis of United States census data, he has reported that professional, technical, and kindred workers are the most mobile groups in the population (25). On the other hand, he further reported that sedentary persons were appointive and elective officials, craftsmen, and operatives. His data, then, suggest that there may be variation within SES as well as variation between SES.

Others have suggested a contrary relationship between rank of neighborhood and the desire to move to another part of town. The higher social ranks overwhelmingly did not want to move (26). In addition, Blizzard has suggested that the suburban movement is best characterized as a middle-class movement (27).

Butler, however, reported no rate differences in regard to occupational SES and residential mobility. Rate differences were so small as to indicate that occupational SES is not an important factor in whether or not a household is planning to move or stay in their current residence (18). Accordingly, it is hypothesized here that there will be no statistically significant differences in residential mobility plans by head of household's occupational SES.

As shown in Table 52, the hypothesis of no differences was not substantiated. Although differences were not significant, there was a general trend of lower SES persons being more likely than upper SES persons to have plans to move within the next year, which is contrary to the hypothesis most often advanced. The largest difference, however, was noted for those households for which SES information is not available; only 12 percent of them had plans for moving. On the other hand, the SES category of 60-69, or the one that contains the lower-level professionals, managers, etc., had the highest percentage of planned residential movement—about 27 percent. The over-all conclusion is that SES *per se* is not a strong predictor of prospective residential movement. It may be occupational classification *per se* rather than prestige level that is related to residential mobility.

Another occupationally related aspect of residential movement is whether the head of the household expects to stay on his present job. As suggested in Table 52, there are major differences in residential mobility intentions by whether the head expects to remain on his current job. As might be expected, intended movers were more likely than intended stayers to be considering a job change. On the other hand, there was no relationship between location of head's place of work and plans to move within the next

year. Given the differences noted in the expectation of being on another job in the future, which is related to moving intentions whereas current location of workplace is not, one might hypothesize that many heads who are thinking of changing jobs have a long-distance or migration move in mind rather than a local or intrametropolitan move. (This notion, of course, would be consistent with the migration or opportunities literature which suggests that occupational and/or job changes are the primary reasons for long-distance moves.) This may be a consideration, especially in the light of the fact that location of workplace is not related to moving intentions, which suggests that one may move about within the metropolitan region and yet maintain the same job at the same workplace. A follow-up of the respondents should clarify the hypothesized relationship.

Length of Residence.—As suggested earlier, small population segments have been reported as contributing to mobility rates through repeated moves. Consequently, residential movement taking place at any one time period has sometimes been reported as a function of the number of past moves. The number of past moves is not considered here; rather, the length of residence in the current place of residence is related to potential mobility. The hypothesis is that more recent retrospective movers are more likely than recent nonmovers to be planning to move in the next year.

As reported in Table 52, the most recent inmovers (i.e., during the year 1966) are those most likely to be planning to move within the next year. Furthermore, there is only a slight drop in percentage of planned movers among persons whose last move was in 1961-1965. The major difference is for families who moved into their current place of residence in 1960 or earlier with those who moved in 1961 or later; the most recent inmovers are the ones who are most likely to have plans for residential movement within the following year.

Location of Household Before Last Move—All Moves.—Anderson (*28*) has implied that movers into metropolitan areas from outside are likely to make an adjustment move or moves within the SMSA in the next few years. Accordingly, it is of concern here to examine the location of the household prior to its last move, and in this connection it is hypothesized that households moving into the metropolitan area would more likely have moving intentions for the near future than would intrametropolitan movers.

Tenure Status.—While few researchers have made explicit the relationship between tenure status and residential movement, almost every study indicates the need to consider tenure status in the explanation of residential movement. The implicitly held hypothesis is that renters are more likely to be movers than owners or buyers. As suggested in Table 52, current planned movers were less likely to be buyers or owners than renters or others who were more likely to be planned movers.

Price of Housing.—Earlier, the hypothesis of no relationship between planned residential movement and occupational SES was tested; a similar hypothesis was formulated in regard to housing value as reflected in price paid for current place of residence. Table 52 shows that, as was the case in regard to occupational SES, there is no difference in moving intentions by price paid for current housing.

Summary.—This analysis confirms what was reported in most earlier studies, a rather consistent relationship between residential mobility intentions and some background factors. The most consistently reported relationship has been that of life cycle indicators (i.e., age and family type) to residential movement. This study, as others, notes the influence of these factors and concurs that they are extremely important dimensions to be considered in any explanation of population movement. On the other hand, an alternative hypothesis is suggested insofar as size of household is concerned. Smaller households (i.e., one or two persons) were less likely to be intending to move, whereas larger households were more likely to have plans to move within the year following the interview.

No previous study of residential movement specifically considered race; however, this study found that nonwhites were more likely to have moving intentions than were whites. It is suggested, however, that whether nonwhites are able to actualize their moving intentions may depend upon an available housing supply that they may move into, and, of course, having sufficient resources. A follow-up interview to determine subsequent movement would be invaluable in determining whether nonwhites can actualize their intentions at the same rate as whites. The hypothesis is that they will not be able to do so.

One of the major conclusions of many past studies, albeit those not specifically studying residential mobility, but reporting on it, suggests that one should expect differences in residential mobility rates by socio-economic status. However, the findings here show no major differences in this regard. There was no evident relationship between head of household's workplace and moving intentions. However, the households in which the head did not expect to stay on the current job were more likely to have moving intentions than were households whose head expected to maintain job stability. The combination of these two findings suggests the hypothesis that heads who expect to change jobs are more likely to be planning a long-distance or migratory move than an intrametropolitan move. This hypothesis will be tested with follow-up data gathered in a subsequent interview.

It was found that more recent movers were more likely than long-duration residents to be planning to move away from their current place of residence. Also, it was found that those persons whose location was within the same town or SMSA and outside the SMSA, but from the same state, were less likely to be planned movers than were the migrants from out of state, or those households who did not have their own home originally.

Finally, present results were consistent with previous research in suggesting that tenure status was systematically related to residential mobility intentions, but no relationship was recorded for price of current housing unit.

Current Environmental Conditions

Environmental conditions as reflected in housing and neighborhood attitudes previously have been investigated by Bell (*13*), Branch (*29*), Dewey (*30*), Munson (*31*), and Wattell (*32*). Unfortunately, none of these investigators related housing and neighborhood environment to anticipated or

completed residential mobility. However, Butler, Sabagh, and Van Arsdol (4), and Rossi (8), interrelated these dimensions with anticipated residential mobility to differentiate movers from nonmovers. These previous research endeavors suggest that an inverse relationship exists between residential moves and housing and neighborhood satisfaction.

Housing and neighborhood attitudes, of course, are a characteristic of the family or individual householder. Other more objectively determined environmental aspects of residential moves have been neglected for the most part. However, some census-based research suggests that there may be urban-suburban differentials in spatial mobility (3), but no one has dealt with other more detailed aspects of the immediate environment as objectively measured (33).

The following analysis takes into account both approaches, as has been indicated. First, respondent attitudes about housing and neighborhood are reported, and second, some objective measures of the housing and neighborhood environment as reported by interviewers are considered in relationship to the criterion measure used for residential mobility.

Housing and Neighborhood Attitudes.—Housing and neighborhood satisfactions are summarized in Table 53.

It appears that over-all housing and neighborhood satisfactions, as well as satisfactions with sufficiency of number of rooms, of bedrooms, and of bathrooms, each differentiate movers from nonmovers. Also, satisfaction with accessibility differentiates planned movers from planned stayers.

In summary, it appears that housing and neighborhood character, as reported by respondents and by interviewers, is consistently related to whether a household has plans for moving or staying in the current place of residence. In every instance, a negative evaluation of some aspect of housing and/or neighborhood character was associated with plans for residential movement. The traffic pattern and SMSA size were the only current environmental factors considered not related to planned residential movement.

Accessibility Opportunities

Accessibility of needed services ordinarily is thought of as being associated with a pull into a neighborhood. The converse of this notion, of course, is that one would expect an association between poor accessibility to services and planned residential mobility.

Accessibility to services and various amenities by minutes, and plans for prospective residential movement, are given in Table 54. No differences were noted between planned movers and stayers in regard to accessibility in minutes of

TABLE 53

RESIDENTIAL MOBILITY AND CURRENT ENVIRONMENTAL CONDITIONS (MOVERS)

VARIABLE DESCRIPTION	χ^2	DF	SIGNIFICANCE LEVEL	DIRECTION-ALITY
Respondent's evaluations:				
1. Housing evaluation	198.42	1	0.001	Dissatisfied
2. Neighborhood evaluation	180.39	1	0.001	Dissatisfied
3. Sufficiency of rooms	70.98	2	0.001	Dissatisfied
4. Sufficiency of bedrooms	108.22	2	0.001	Dissatisfied
5. Sufficiency of bathrooms	10.77	1	0.01	Dissatisfied
6. Accessibility satisfaction	43.86	2	0.001	Dissatisfied
Interviewers' evaluations:				
7. Rating of interior appearance of dwelling unit	37.23	3	0.001	Poor rating
8. Rating of exterior appearance of dwelling unit	107.20	4	0.001	Poor rating
9. Rating of state of repair of dwelling unit	77.59	4	0.001	Poor rating
10. Rating of state of repair of dwelling units on respondent's street	66.83	4	0.001	Poor rating
11. General rating of respondent's street	70.46	4	0.001	Poor rating
12. Rating of character of respondent's street	31.59	2	0.001	Poor rating
13. Type of traffic carried on respondent's street			NS	
14. Noise level in respondent's neighborhood	61.83	2	0.001	Poor rating
Census classifications:				
15. Region	8.45	3	0.05	Northeast
16. SMSA size			NS	
17. Central city or suburban location	43.89	1	0.001	Central city

TABLE 54

RESIDENTIAL MOBILITY AND ACCESSIBILITY OPPORTUNITIES

VARIABLE DESCRIPTION (ACCESSIBILITY)	χ^2	DF	SIGNIFICANCE LEVEL	DIRECTIONALITY
1. Of grocery shopping			NS	
2. Of downtown			NS	
3. To a shopping center			NS	
4. To a doctor's office			NS	
5. To a hospital/clinic			NS	
6. To parks/playgrounds			NS	
7. To elementary school			NS	
8. To church			NS	
9. Of head's work place	38.24	6	0.001	40 min and beyond and 10-19 min—movers
10. Of friend(s)	16.76	5	0.01	Peculiar fluctuation with respondents in the categories of 6-9 and over 20 min as being the most likely to have plans for moving

such services as grocery shopping, downtown, a shopping center, a doctor's office, or a hospital or clinic. Also, no differences were noted in regard to such amenities as parks or playgrounds, or an elementary school.

On the other hand, accessibility of head's workplace emerged as being significant in whether a household had plans to move within the following year or stay in the current place of residence. Households whose head lived 40 or more minutes away from his workplace were more likely to be movers than were those with heads who lived less than 40 min away from work, except for those in the 10- to 19-min category, who were intermediate in their residential movement plans. Distance from friends was the only other accessibility variable that was associated with plans for residential movement.

Livability Expectations and Preferences

This section focuses on the living qualities and preferences expressed by households in the selection of a place of residence and its surrounding neighborhood. The analysis is conducted much as that in previous sections, with planned movers and stayers compared. It is assumed here that potential movers' expectations and preferences are more likely to be carried out than those of planned stayers; this means that the tastes of the household with respect to the dwelling unit, its internal character, and surrounding social and physical environment expectations and preferences potentially may be actualized in the planned move. The results of the analysis are summarized in Table 55.

Desired Distance of Accessibility.—In the last section it was reported that only actual minutes from head's work place and minutes from friend(s) differentiated planned movers from nonmovers. The analysis presented in this section is concerned with desired distance, as indicated by respondents indicating whether they would rather be closer, about the same, or farther away.

As in actual minutes from head's work place, desired distance differentiated movers from nonmovers. In actual minutes, households at or beyond the 40-min time period

were more likely to have plans for moving than those living closer to work, except for persons in the 10- to 19-min zone, who also were more likely to have plans for a residential move. Desired distance from head's work place was consistent with this, in that planned movers were more likely to want to be closer to or farther away from head's work. Movers also were more likely than nonmovers to prefer living closer to friends.

The desired distance to an elementary school, a shopping center, and parks/playgrounds was closer/about the same for planned movers as opposed to planned stayers. On the other hand, movers were more likely than nonmovers to have a desire to live closer or farther away from downtown. Desired distance from church was closer/about the same, or doesn't matter, insofar as movers were concerned; in contrast, stayers were overrepresented in the desire to live farther away from the church than they currently do.

For desired distance to grocery shopping, doctor's office, or hospital/clinics, no significant differences were noted between movers and nonmovers.

Housing and Neighborhood Preferences.—Preferences in architectural style, age of housing, age of neighborhood, or number of children in neighborhood did not differentiate movers from nonmovers. On the other hand, planned movers were more likely than nonmovers to prefer split-level homes, as contrasted to one-floor or two-floor homes, and to prefer large lots as opposed to smaller ones.

Neighborhood Preferences.—Neighborhood preferences were assumed to be expressed in the stated importance of certain factors in choosing a neighborhood. When the neighborhood preferences of potential movers are compared to stayers, the school system, and friendliness of neighbors loom as the most important factors. However, the importance of recreational facilities and the neighborhood's reputation also differentiate planned movers from nonmovers. No major differences were found in respect to the importance of the general appearance of the neighborhood, availability of public services, light traffic, or similarity of neighbors in differentiating movers from nonmovers.

Trade-Offs.—In a further attempt to obtain an idea of the importance of housing and neighborhood in the process of selecting a place to live, movers and nonmovers were compared in what aspects of house and neighborhood they would trade for other aspects. Movers were more likely than nonmovers to trade off a desirable neighborhood for a good house. On the other hand, no differences were noted in regard to location vs good neighborhood, outside vs inside appearance of the place, or good schools vs higher taxes.

Summary.—In summary it appears that movers are more likely than nonmovers to have a desire to live closer or farther away from head's workplace and downtown; to be closer to best friend(s); to be closer/about the same to elementary schools and shopping centers; and to desire to be closer/about the same, or really not care how close they are to church.

In expressed preferences related to house and neighborhood, planned movers were more likely to prefer split-level homes and a large lot than were nonmovers. Important factors in choosing a neighborhood to the movers were the school system and friendliness of the neighbors; in addition,

movers were more likely than nonmovers to rate recreational facilities and reputation of neighborhood as important factors in choosing a neighborhood. In trade-offs, movers were more likely than nonmovers to trade off a desirable neighborhood for a good house. All other comparisons resulted in relatively small differences.

Attitudinal Scales

Previous studies have emphasized structural and social-psychological (i.e., attitudinal dimensions) in the study of residential mobility. In this section the relationship between the criterion measure of prospective residential mobility and some social-psychological dimensions as measured by a number of questionnaire items is described. A few of the individual items incorporated in this scale analysis were used as single-item variables in the earlier sections of this chapter. Others are introduced here for the first time.

In scale analysis, individual items are interrelated with other items to determine if they form scales, which in turn are used to differentiate movers from nonmovers. However, before these items could be interrelated with the criterion measure it was first necessary to determine if the

TABLE 55

RESIDENTIAL MOBILITY AND LIVABILITY EXPECTATIONS AND PREFERENCES OF MOVER

VARIABLE DESCRIPTION	χ^2	DF	SIGNIFI-CANCE LEVEL	DIRECTIONALITY
Desired distance from:				
1. Grocery shopping			NS	
2. Best friend(s)	15.95	3	0.01	Closer
3. Elementary school	20.00	3	0.001	Closer/about the same
4. Downtown	15.00	3	0.01	Closer or farther
5. Shopping center	10.47	2	0.01	Closer/about the same
6. Parks/playgrounds	6.17	2	0.05	Closer/about the same
7. Doctor's office			NS	
8. Hospital/clinic			NS	
9. Head's work place	9.70	2	0.01	Closer or farther
10. Church	8.88	2	0.02	Closer/about the same or doesn't matter
Preference of:				
11. Vertical floor arrangement	11.58	3	0.01	Split level
12. Architectural style in house			NS	
13. Age of housing			NS	
14. Age of neighborhood			NS	
15. Number of children in neighborhood			NS	
16. Size of lot	17.38	2	0.001	Large lot
Importance of . . . in choosing a neighborhood:				
17. School system	15.77	2	0.001	Very important
18. General appearance of neighborhood			NS	
19. Availability of public services			NS	
20. Recreational facilities	11.80	2	0.01	Very important
21. Light traffic			NS	
22. Neighborhood's reputation	9.68	1	0.01	Not important
23. Similarity of neighbors			NS	
24. Friendliness of neighbors	18.04	2	0.001	Not important, don't know
Trade-off:				
25. Good house vs desirable neighborhood	19.82	2	0.001	Good house or don't know
26. Location vs good neighborhood			NS	
27. Outside vs inside appearance			NS	
28. Good schools vs higher taxes	8.50		0.02	Good schools

items clustered or clung together and were measuring one attitude; or, in terms of scaling analysis, were they unidimensional. The procedure followed in analyzing the items is called latent structure analysis (34, 35, 36). Latent structure analysis uses responses to individual items (manifest responses) and carries out a specified statistical process to determine if there is a common underlying structure (latent dimension) that accounts for the pattern of reported responses. The process is useful in defining concepts; for example, social mobility commitment or mental well-being. The analysis technique makes it possible to use a large array of questions thought to be measuring a factor and to determine if the items are interrelated and to determine if in fact they do form one dimension and to delineate categories (classes) along the dimension. This process may be thought of as the formation of concepts. These concepts in turn are interrelated with other concepts in propositions and/or hypotheses—in this case, residential mobility.

Tables 62 through 81, as a group dealing generally with latent structure analysis with regard to attitudinal scales, are appended to this chapter. They are not specifically referred to in the text.

The results of the analysis interrelating the derived scales with planned residential mobility are given in Table 56.

Familism and Consumption Styles.—The items that make up the familism scale were formed around notions derived from a perusal of various books on the family. Items included in the questionnaire primarily are related to full-family (husband, wife, and child or children) as opposed to an extended-family orientation (a three-generational

family). Other possible familistic, or non-familistic orientations were not included. The relationship expected was that movers would be more likely than non-movers to have a full-family orientation as opposed to having an extended-family orientation. This expectation is based on the notion that most moves will result in a longer physical and time separation between family units, making it more difficult to carry out extended-family relationships (6). Analysis results are given in Table 56. Contrary to expectations there is no systematic relationship between familistic orientation and residential mobility.

The consumption scale is concerned with measuring the importance of different styles of consumership. It was expected in construction of the items and the resultant scaling process that consumers oriented outside of the family (for example, entertaining friends and people who could help one get ahead) would be one class and that family-oriented consumers would be a second class. However, the two classes that emerged from the data analysis appeared to describe high and low consumer styles, regardless of what was to be consumed. That is, one class agreed to consumption at all levels while the other class tended to reject consumption at all levels. The high-consumption households were more likely to have plans for movement than low-consumption households.

Social Mobility Orientations.—Two dimensions of social mobility were included in the analyses. First, the extent of sacrifice that families would make in order to get ahead in life was elicited by items concerned with social mobility commitment (4, 9, 37). This scale determined if the family was willing to see less of close relatives and friends, to keep quiet about political preferences, sacrifice job security, and

TABLE 56

RESIDENTIAL MOBILITY AND ATTITUDINAL SCALES (MOVERS)

VARIABLE DESCRIPTION	χ^2	DF	SIGNIFICANCE LEVEL	DIRECTIONALITY
1. Familism			NS	
2. Consumption styles	5.12	1	0.05	High consumption
3. Social mobility commitment	16.98	1	0.001	High SMC
4. Neighborhood and social mobility			NS	
5. Urban and suburban orientation			NS	
6. Mental well-being			NS	
7. Neighboring	6.80	1	0.01	Low neighboring
8. Neighbors and neighborhood reputation			NS	
9. Housing evaluations	133.85	2	0.001	Dissatisfied
10. Evaluation of sufficiency of rooms	158.60	2	0.001	Dissatisfied
11. Over-all neighborhood evaluations	115.23	2	0.001	Dissatisfied
12. Neighborhood and services evaluations	95.26	2	0.001	Dissatisfied
13. Services evaluation	24.56	2	0.001	Dissatisfied
14. Subscale—neighborhood evaluation	67.97	1	0.001	Dissatisfied
15. Subscale—neighbors evaluation	118.72	1	0.001	Dissatisfied
16. Important factors in choosing a neighborhood			NS	
17. Important housing and neighborhood factors in choosing current place	11.34	2	0.01	House and cost only
18. Important housing characteristics in selection of current place			NS	
19. Housing and neighborhood preferences			NS	
20. Desired accessibility	10.89	2	0.001	Change

to move from the present neighborhood in order to get ahead. Slightly more than three fourths of the households were considered as having a high social mobility commitment while the remaining one fourth was considered as having a low social mobility commitment. The expectation was that households with a high social mobility commitment would be more likely to have plans for a prospective move than would households with a low social mobility commitment. As given in Table 56, the analysis suggests that this indeed is the case with the national sample of respondents.

The second social mobility dimension considered in this research was that of neighborhood location as it is perceived as influencing social mobility. Three classes emerged from the analysis; the largest class of slightly more than half of the households rejected the notion that neighborhood of residence influences social mobility. The next largest class of slightly more than 40 percent of the sample indicated that they believed that neighborhood of residence in fact did affect social mobility chances. A third and very small class of households indicated that the neighborhood a person lives in should reflect how much money he has, and if a man has an important job he should be very careful as to the kind of neighborhood he lives in. The expectation was that households that perceived the neighborhood as influencing social mobility chances would more likely be movers than those who did not; however, the analysis resulted in minor and insignificant differences between movers and nonmovers and these classes.

Urban and Suburban Orientations.—Items used to measure the urban or suburban orientation contrasted the suburbs and the urban center; the scale analysis resulted in three classes. The largest class (70.2 percent) agreed that the suburbs were more desirable than the urban area. A second category, including 9.9 percent of the households, agreed that the suburbs were better for raising children than the city and that suburbs were more attractive than the city, but rejected a negative evaluation of the city on other items. The third group (19.9 percent of households) rejected the notion that suburbs were more desirable than the city and can be considered as city- or urban-oriented. The expectation was that movers would be more likely than nonmovers to have a suburban orientation; however, the results reported in Table 56 show no significant differences in residential mobility plans by suburban-urban orientations.

Mental Well-Being.—There is an abundant literature concerned with possible relationships between mental well-being and residential mobility. Accordingly, a number of items were included to tap this dimension. These items were derived from other studies primarily concerned with mental illness in urban centers (38). The latent structure analysis resulted in two classes, which have been labeled the well and the suspect; the well were 59.3 percent of the sample, while the remaining 40.7 percent were placed in the suspect category. The hypothesis was that movers were more likely than nonmovers to be in the suspect category. The analysis, however, resulted in a lack of significant findings in regard to mental well-being.

Neighboring and Neighbors.—A neighboring scale was included in this research because it was felt that households who had strong ties in a neighborhood would be quite likely to have positive notions about neighboring. Furthermore, it was assumed that households planning a residential move would be families who were not positively oriented toward neighboring. Two classes of neighboring emerged from the analysis, with the positive or high neighboring class making up 22 percent of the sample and the low or negative neighboring category consisting of 78 percent of the families. The expectation was fulfilled, with movers more likely than nonmovers to express negative neighboring attitudes.

A second scale measured the dimension labeled *neighbors and reputation of neighborhood.* Here, also, the analysis resulted in two categories. The largest class (63.4 percent of the sample) was made up of households who considered neighborhood reputation and kind of people living there as important. It should be noted here that this does not conflict with the neighboring notion. One may not desire to visit with neighbors, yet want to live in a neighborhood with a good reputation and one that contains certain kinds of people. The second category (36.6 percent) generally did not consider the neighborhood or people who lived there as important as the first class; however, they did express almost the same concern about the neighborhood's reputation for trouble. The hypothesis was that movers would be more likely than nonmovers to consider neighbors and reputation of neighborhood important. The analysis results indicate that there are no statistically significant differences in residential mobility plans and neighbors and reputation of neighborhood, contrary to expectations.

Housing and Place Evaluations.—Two scales concerned with current housing evaluations were included in this research. These scales measured housing satisfaction and satisfaction with sufficiency of rooms. The housing scales were included on the basis of previous research, which has demonstrated the importance of housing satisfactions in residential mobility. The expectation was that movers would more likely be dissatisfied with their housing or sufficiency of rooms in their current place of residence than would nonmovers. As given in Table 56, movers were more likely than nonmovers to be dissatisfied with their housing or with the sufficiency in number of rooms. This relationship certainly has been a consistent one throughout all residential mobility research and it would have been surprising if this relationship had not been found in the national sample.

Neighborhood Evaluations.—In this section the concern is with a number of scales and subscales that elicited responses concerned with a variety of neighborhood satisfaction components as suggested in previous residential mobility research. A number of scales and subscales were utilized because previous studies have consistently shown the importance of housing satisfaction in regard to residential mobility but rather inconsistent hypotheses have been gleaned in respect to the neighborhood and neighborhood satisfaction and its relation to residential moves. Notwithstanding these previous studies, it is apparent that neighborhood evaluations should be more important than they have been demonstrated to be in the past. Bell (*13*), Branch (*29*), Dewey, (*30*), and Munson (*31*) have presented an abundance of information concerning likes and dislikes in neighborhoods. None of these studies, however, interre-

lated neighborhood satisfactions or dissatisfactions with completed or anticipated residential mobility. In each case there was an inference that neighborhood dissatisfaction was positively related to residential mobility plans. Rossi studied neighborhood satisfaction and combined it with housing satisfaction, and reported that the index had some utility in differentiating movers from nonmovers (8). Accordingly, the hypothesis is that movers are more likely than nonmovers to be dissatisfied with their neighborhood surroundings. As shown in Table 56, the hypothesis was borne out for over-all neighborhood satisfaction, neighborhood satisfaction, and services satisfaction, and for each of several other subscales related to neighborhood character.

Important Factors in Selection of Current Place.—Several scales were constructed which did not attempt to evaluate current satisfactions with house or neighborhood, but rather were concerned with the important factors in house and neighborhood as respondents perceived them. The notion was that differentially evaluated house and neighborhood characteristics could be interrelated with current house and neighborhood characteristics to determine the extent of congruence; and also that factors considered important and desired should give some indication of the kind of housing and neighborhood the moving families will select in the future. Insofar as the importance of certain kinds of characteristics were concerned, no specific hypotheses concerning prospective residential moves were formulated. However, an hypothesis was made that movers would be more likely than nonmovers to desire different accessibilities than they now had. As indicated in Table 56, the findings were mixed. The importance of the characteristics of the dwelling in selection of the current place of residence had no significant relation with prospective mobility plans. On the other hand, movers were more likely than nonmovers to emphasize the dwelling unit itself and its cost instead of other aspects, such as the lot or grounds, location, neighbors, and individual characteristics of the unit such as basement, garage, etc.

Desired accessibility pattern was related to prospective residential mobility, as indicated in Table 56. There were three classes; two classes had desired accessibilities that were almost identical with the accessibility they now had; the only variation in these classes was related to desired distance from head's work place. In one instance the desired distance to head's work place was farther away, and in the other closer. However, movers were more likely than nonmovers to be in the third class, which desired to change most of their accessibilities to the various amenities, including services and head's work place (except for accessibility to elementary schools and parks/playgrounds). This last class accounted for 4.9 percent of the sample; about one third of this group had prospective mobility plans.

Summary.—In this section a number of attitudinal or social-psychological dimensions were interrelated with the residential mobility criterion measure.

Two scales were derived which related to what was labeled familism and consumption style. The familism scale measured basic- and extended-family orientations. The expectation that movers would be more likely than nonmovers to have a basic-family orientation was not

verified. However, movers were more likely than nonmovers to have a high consumption pattern.

Scales to measure social mobility commitment and the neighborhood location as influencing social mobility were included in the research because these social psychological dimensions were expected to be systematically linked to residential moves. The expectation was met in regard to social mobility commitment, with movers being more likely than nonmovers to have a high social mobility commitment. On the other hand, no significant difference was noted between movers and nonmovers insofar as plans for residential movement were concerned and the scale measuring the perception of the neighborhood as it influences mobility.

The expectation that movers would be more likely than nonmovers to have a suburban orientation as opposed to an urban orientation was not verified. Also, the hypothesis that movers would be more likely than nonmovers to be mentally ill or suspect was not verified.

Contrary to expectations, movers were no different from nonmovers in their response to the attitudinal scale concerned with neighbors and neighborhood reputation. Actually, movers were more likely than nonmovers to have a low or negative attitude toward neighboring.

Movers were more likely than nonmovers to be dissatisfied both with housing and neighborhood, as measured by a number of scales and components of the larger scales. Several scales concerned with important factors in the selection of the current place of residence were differentially responded to by movers and nonmovers.

PROSPECTIVE RESIDENTIAL MOBILITY WITH AGE OF HEAD OF HOUSEHOLD CONTROLLED

In this section, further analysis of planned residential mobility is dealt with. Age of the head of the household is controlled and used as a test variable (39). By controlling for certain factors (such as age) that appear to be systematically associated with residential mobility, one can determine if other variables are related to planned movement as a result of being tied to age or if they make an independent contribution. That is, if age is controlled, does a former relationship between mobility and the variable disappear. If the original relationship does not disappear when age is used as a test or control variable, it is not age that makes the difference but the other variable.

Controls for Age of Head of Household

As suggested earlier, previous studies of residential movement have stressed the importance of age. A strong association between age of head and planned residential movement was also found in this study. The relationship has so consistently emerged that in this section age is controlled to determine if some of the relations reported in earlier sections are age influences. Age is controlled and residential movement within age categories is then related to background characteristics, current environmental conditions, accessibility opportunities, and livability expectations and preferences. Age is divided into classes of 34 and under and 35 and over.

Background Characteristics.—The relationship between

residential mobility plans and background characteristics with age controlled is summarized in Table 57. Earlier, size of household was reported as being related to residential mobility plans; however, when age was controlled the relationship disappeared. This means essentially that in households with younger heads, 34 and under, planned mobility was not related to size of household. Also, household size made no difference in households with older heads; the earlier reported relationship then is a function of age, with younger households also having larger families, and also being more likely to have plans to move.

When year moved into current place of residence and potential residential movement were interrelated, more recent inmovers were more likely to have plans for future moves than earlier inmovers. However, when age of head of household was controlled this relationship disappeared, suggesting that age is the key variable and that potential moves are more a function of age than length of residence. A similar conclusion was made in regard to expectations to staying on current job when the relationship was found to disappear when age was controlled.

When age was controlled and race was interrelated with planned residential mobility, similar relationships were found in both age categories. The implication here is that controlling for age does not alter the earlier conclusion that nonwhites are more likely to have plans to move than are whites; this holds true for both age categories. Similarly, controlling for age did not alter the earlier conclusions that location of household before last move and tenure of current housing unit was interrelated with plans for moving.

In the bivariate analysis, location of head's workplace was not associated with whether the household had plans for moving. When age controls were applied, a similar lack of relationship was found for the younger age category. However, in the older age category, the least likely to have plans for moving were heads whose workplace was in the central city; while heads whose workplace was in the suburbs had plans to move intermediate to central city locations, and heads whose workplace was not in the SMSA were most likely to move.

Location of household before last move was associated with plans for moving; inmigrants (that is, persons moving into the metropolitan area from outside the state), and persons who had no previous home, such as newly married couples, were more likely to have plans to move than persons who formerly resided somewhere within the SMSA or within the same state. The suggestion is one of adjustment moves after a long-distance move, or for new households looking for different housing—probably renters looking to buy (28).

A somewhat different relationship emerged when age was controlled. Younger households who had moved within the same city or town in the SMSA and those who established a residence for the first time were more likely to have plans for a future move than past movers from one place to another within the metropolitan area and movers from outside the SMSA, whether from in-state or out-of-state. When within same city or town and/or neighborhood past movers were compared, no significant relationship was found. When age was controlled, a similar lack of relation-

TABLE 57

RESIDENTIAL MOBILITY AND BACKGROUND FACTORS WITH AGE CONTROLLED

VARIABLE DESCRIPTION	SIGNIFICANCE LEVELS		
	TOTAL SAMPLE	AGE CATEGORIES	
		≤34	≥35
Background factors:			
1. Size of household	0.02	NS	NS
2. Full range—family types	0.001	0.001	0.01
3. Full families and age of children			
4. Race	0.001	0.001	0.001
5. SES	NS	NS	NS
6. Expectations of staying on current job	0.05	NS	NS
7. Location of head's work place	NS	NS	0.05
8. Year moved into current place of residence	0.001	NS	NS
9. Location of household before last move: all movers	0.01	0.05	0.05
10. Location of household before last move: within same place movers only	NS	0.05	NS
11. Tenure of current housing unit	0.001	0.001	0.001
12. Price of current housing (owners and buyers)	NS	NS	NS

ship was found for older families. However, in younger families an association was noted, with past same neighborhood movers being more likely to have plans for a future move than past within-same-city or town movers. Given other studies, it is suggested that this relationship may be related to SES, with within-neighborhood movers having a low SES; it is expected that these movers will continue to carry out additional intraneighborhood movements in the future.

Tenure of current housing unit was significantly related to planned residential movement—renters were more likely than others to have plans for residential movement. When age controls were applied, the relationship remained significant, although for the younger age group both renters and persons who were classified into a residual category of tenure—others—were more likely than owners and buyers to have plans for moving. On the other hand, in the older age group, renters were more likely than owners, buyers, and others to have plans for moving. The difference in the residual category (others) may be related to temporary doubling up by younger families, whereas the residual category in the older age group may reflect housing arrangements for which some residents are dependent upon others for support.

Earlier it was noted that plans for a future move were not related to price of current housing (owners and buyers only), or to SES. A similar lack of relationship was noted when age was controlled.

In summary, age controls did not alter the apparent association between race, location of household before last move, tenure of current dwelling unit, and plans for residential mobility. Also, controls for age did not appear to influence the relationship between residential mobility plans and socio-economic status and price of current housing. On the other hand, age controls eliminated the relationship between size of household and year moved into current place of residence to residential mobility. For the total sample no apparent relationship was found between residential mobility plans and location of head's workplace and location of household before last move if the last move was within the same place; however, age controls suggest that a relationship was being masked and within-age category differences were noted.

Current Environmental Conditions.—When age controls were applied to the variables used to measure current environmental conditions, rather consistent relations were noted, with age controls evidently not influencing the basic relationships reported earlier, except in the few instances which are noted. The relations are summarized in Table 58.

Negative evaluation of some aspect of the environment, as reflected in housing and neighborhood evaluations by respondents, in each instance resulted in significant differences between planned movers and planned stayers. When age controls were applied, the only exception to the relationship between negative evaluation of housing or neighborhood and planned residential movement was in enough bathrooms. For younger households the number of bathrooms did not differentiate movers from stayers.

Utilizing interviewer ratings of housing and neighborhood, rather than respondents, a similar relationship between negative evaluations and planned residential movement was found. In each instance similar results were obtained when age was controlled—the relationship remained. The only variable not significantly related to potential residential movement was the type of traffic carried on the street, and this lack of relationship remained consistent when age was controlled.

In a larger environmental context, regional differences were noted in respect to plans for residential mobility, with residents of the Northeastern United States census division more likely to have plans for moving than residents of

TABLE 58

RESIDENTIAL MOBILITY AND CURRENT ENVIRONMENTAL
CONDITIONS WITH AGE CONTROLLED

| | SIGNIFICANCE LEVELS | | |
| | | AGE CATEGORIES | |
VARIABLE DESCRIPTION	TOTAL SAMPLE	≤34	≥35
Respondent's evaluations:			
1. Housing evaluation	0.001	0.001	0.001
2. Neighborhood evaluation	0.001	0.001	0.001
3. Sufficiency of rooms	0.001	0.001	0.001
4. Sufficiency of bedrooms	0.001	0.001	0.001
5. Sufficiency of bathrooms	0.01	NS	0.001
6. Accessibility satisfaction	0.001	0.01	0.001
Interviewer's evaluations:			
7. Rating of interior appearance of dwelling unit	0.001	0.01	0.001
8. Rating of exterior appearance of dwelling unit	0.001	0.001	0.001
9. Rating of state of repair of respondent's dwelling unit	0.001	0.001	0.001
10. Rating of state of repair of dwelling units on respondent's street	0.001	0.001	0.001
11. General rating of respondent's street	0.001	0.001	0.001
12. Rating of character of respondent's street	0.001	0.01	0.05
13. Type of traffic carried on respondent's street	NS	NS	NS
14. Noise level in respondent's neighborhood	0.001	0.001	0.001
Census classifications:			
15. Region	0.05	0.05	0.001
16. SMSA size	NS	0.05	NS
17. Central city-suburban location	0.001	0.001	0.001

other divisions. However, when age was controlled, different relationships were noted for each age group. In the South and West, households in the younger age group were more likely than households in the older age group to have plans for a move; in the older age group, households of the Northeastern division were most likely to have plans for moving. The range of differences was large in the older age group, accounting for the over-all difference noted earlier without age controls.

In the bivariate analysis, no significant relationship was noted between SMSA size of residence and mobility plans. When age was controlled, a similar lack of relationship was noted in the older age category. However, households with a younger head who resided in SMSA's of an intermediate size, that is 250,000-1,000,000, were more likely to have plans to move than households of larger and smaller SMSA's. The relationship between central city and suburban residence and plans to move held when age was controlled. That is, central city households were about twice as likely as suburban households in each instance to have plans to move.

In summary, when age controls were applied to the variables used to measure current environmental conditions, consistent relationships were noted, with age evidently not influencing the basic relationship of negative evaluations of the environment, as expressed by both respondent and interviewer ratings, and residential mobility intentions. In a larger environmental context, several regional differences were noted in respect to planned mobility. Without age controls Northeastern households were more likely than households of other areas to have plans for mobility. On the other hand, when age controls were applied, younger households in the South and West were more likely than persons in other areas to have plans for moving. Also, when age controls were applied, younger households in the intermediate size SMSA's were more likely to have plans to move than households of larger and smaller SMSA's. Regardless of whether age controls were applied, households of central cities were more likely than households of suburbs to have moving intentions.

Accessibility Opportunities.—The relations between residential mobility and accessibility opportunities with age controlled are indicated in Table 59. Also summarized in this table are earlier reported relationships using the entire sample. For the entire sample, only current accessibility in minutes to head's workplace and friends distinguished between planned movers and stayers. On the other hand, when age controls were applied, only current accessibility of head's workplace differentiated both younger and older potential movers from nonmovers, suggesting that this is a dimension independent of age influences. On the other hand, the differences noted in accessibility to friends were eliminated for the younger age group but remained for the older age group. In the younger age group, only distance from shopping center differentiated movers from nonmovers. This difference was considered as a whole.

In summary, it appears that accessibility, in minutes, to head's workplace is independent of age influences and differentiates potential movers from nonmovers. On the other hand, when age controls are applied it appears that an

over-all relationship between potential mobility and accessibility to friends is an older-age-related phenomenon. Distance from shopping center, which did not appear to be related to potential mobility in an over-all analysis, did differentiate movers from nonmovers in the younger age group.

Livability Expectations and Preferences.—The relations between residential mobility plans and livability expectations and preferences with age controlled are given in Table 60.

Desired Distance of Accessibility.—In an earlier section current accessibility was related, in terms of actual minutes currently away from various services, etc., with age controlled. In this section the concern is with desired distances in relationship to potential residential mobility with age controlled. For the total sample, the most significant relations were noted between desired distance from elementary school, head's workplace, best friend(s), downtown, and a shopping center.

When age was controlled, the relationship between plans for a move and desired distance from an elementary school disappeared, suggesting this is an age-influence phenomenon. Within the younger age group, the relationship of moving plans and desired distance from head's workplace disappeared. However, the relationship held in the older age category, with movers more likely than nonmovers to have a desire to be closer. A similar result was found for desired distance from downtown and best friend(s), with former significant relationships disappearing in the younger age group when age was controlled. In the older age group, movers were more likely than nonmovers to have a desire to be closer to downtown. Also, in the older age group, those who had moving plans were more likely than nonmovers to have a desire to be closer, farther away, or state that it didn't matter to friend(s) than nonmovers, who desired to be about the same distance. The only over-all significant relationship that remained relatively the

TABLE 59

RESIDENTIAL MOBILITY AND ACCESSIBILITY
OPPORTUNITIES WITH AGE CONTROLLED

| | SIGNIFICANCE LEVELS | | |
| | | AGE CATEGORIES | |
VARIABLE DESCRIPTION	TOTAL SAMPLE	≤ 34	≥ 35
Accessibility to:			
1. Grocery shopping	NS	NS	NS
2. Downtown	NS	NS	NS
3. Shopping center	NS	0.05	NS
4. Doctor's office	NS	NS	NS
5. Hospital/clinic	NS	NS	NS
6. Parks/playgrounds	0.01	NS	NS
7. Elementary school	NS	NS	NS
8. Church	NS	NS	NS
9. Head's work place	0.001	0.01	0.001
10. Friend(s)	0.01	NS	0.01

same when age was controlled was the desired distance from a shopping center; movers were more likely than nonmovers to have a desire to be closer.

An over-all significant relationship was recorded for desired distance from church and parks/playgrounds and planned residential mobility. When age was controlled, a similar relation was found in the younger age category, but not in the older one—movers were more likely than nonmovers to have a desire to be closer to church.

A lack of relationship between mobility plans and desired distance from grocery shopping, parks/playgrounds, doctor's office, and a hospital/clinic was noted earlier. When age was controlled, no significant differences were found in the younger age category; however, in the older age group, movers were more likely than nonmovers to have a desire to be closer to a doctor's office and a hospital/clinic.

In summary, although in an over-all analysis (that is, using the total sample) a number of significant relations appeared between desired distances and plans for residential movement, when age was controlled most of these significant differences disappeared—at least for one age category or another. In short, it appeared that many of these relations were influenced by age, and therefore were spurious relations. For the younger age category, only desired distance from a shopping center and church were related to plans for a residential move. On the other hand, desired distance from head's workplace, doctor's office, downtown, and best friend(s) differentiated movers from nonmovers in the older age category. It also should be observed that controlling for age brought to light some of these relations that were masked in an analysis utilizing the total sample as one group.

Preferences.—The relationships of housing and neighborhood preferences to moving plans are reexamined in this

TABLE 60

RESIDENTIAL MOBILITY AND LIVABILITY EXPECTATIONS
AND PREFERENCES WITH AGE CONTROLLED

| | SIGNIFICANCE LEVELS | | |
| | TOTAL SAMPLE | AGE CATEGORIES | |
VARIABLE DESCRIPTION		≤ 34	≥ 35
Desired distance from:			
1. Grocery shopping	NS	NS	NS
2. Best friend(s)	0.01	NS	0.05
3. Elementary school	0.001	NS	NS
4. Downtown	0.01	NS	0.05
5. Shopping center	0.01	0.05	NS
6. Parks/playgrounds	0.05	NS	NS
7. Doctor's office	NS	NS	0.01
8. Hospital/clinic	NS	NS	0.05
9. Head's work place	0.01	NS	0.001
10. Church	0.02	0.02	NS
Preference of:			
11. Vertical floor arrangement	0.01	NS	NS
12. Architectural style in house	NS	0.02	NS
13. Age of housing	NS	NS	NS
14. Age of neighborhood	NS	NS	NS
15. Number of children in neighborhood	NS	NS	NS
16. Size of lot	0.001	NS	0.01
Importance of . . . in choosing a neighborhood:			
17. School system	0.001	NS	0.05
18. General appearance of neighborhood	NS	NS	NS
19. Availability of public services	NS	NS	NS
20. Recreational facilities	0.01	0.05	NS
21. Light traffic	NS	NS	NS
22. Neighborhood's reputation	0.01	NS	0.01
23. Similarity of neighbors	NS	NS	NS
24. Friendliness of neighbors	0.001	NS	0.001
Trade-offs:			
25. Good house vs desirable neighborhood	0.001	0.001	NS
26. Location vs good neighborhood	NS	0.02	NS
27. Outside vs inside appearance	NS	0.05	NS
28. Good schools vs higher taxes	0.02	NS	NS

section with age controlled. In the total sample, only vertical floor preference and size of lot differentiated movers from nonmovers in this array of variables. When age controls were applied, only architectural style of house preference differentiated movers from nonmovers in the younger age classification. This difference was masked by using the total sample without age controls. Also, young movers were more likely than nonmovers to prefer modern or state no preference in contrast to traditional styling. In the older age group, the only significant difference noted was for movers to be more likely than nonmovers to express no preference of lot size or to prefer a large lot.

It appears that the housing and neighborhood preferences expressed by the respondents along the specified dimensions are not clearly and consistently related to potential residential mobility. It remains, of course, to be demonstrated whether those who do move in the future will actualize their preferences as expressed herein.

Importance of . . . in Choosing a Neighborhood.—For the total sample, the relative importance attached to the school system, recreational facilities, neighborhood's reputation, and friendliness of neighbors differentiated movers from nonmovers. When age was controlled, it appeared that differential choices by the two age categories was responsible for these over-all significant relations.

In the younger age category, only the importance attached to recreational facilities differentiated movers from nonmovers; other factors did not. For older persons, the school system, neighborhood's reputation, and friendliness of neighbors were differentially evaluated by potential movers and nonmovers.

In summary, it appears that the over-all differences noted between movers and nonmovers were a result of differential contributions by persons in two different age groups. In the younger age category, the only important factor differentiating movers from nonmovers was recreational facilities, whereas in the older age group the importance attached to the school system, neighborhood's reputation, and friendliness of neighbors was important.

Trade-Offs.—For the total sample, the trade-offs of a good house vs a desirable neighborhood and good schools vs higher taxes differentiate potential movers from nonmovers. When age controls were applied, these relations changed markedly. No significant relationships were recorded for the older age category.

In the younger age group, the good house vs desirable neighborhood trade-off difference remained. Movers were more likely than nonmovers to trade off a less desirable neighborhood for a good house or express no preference between the two than were nonmovers. The original relation between good schools vs higher taxes trade-off disappeared when age was controlled. Whereas in the total sample no difference was noted in regard to trade-offs between location vs good neighborhood and outside vs inside appearance, when age was controlled differential choices were noted between movers and nonmovers. Young movers were more likely than nonmovers to choose location or not know which they preferred; also they were more likely to choose inside appearance or don't know over outside appearance.

In summary, for the over-all sample movers were more likely than nonmovers to trade off a good house for a less desirable neighborhood and good schools for higher taxes, or not express a choice between the two alternatives presented. When age controls were applied, no significant differences were noted in the older age category. In the younger age group, movers were more likely than nonmovers to trade off a less desirable neighborhood for a good house, location vs a good neighborhood, and good schools for higher taxes, or not to express a choice between the two possible trade-off alternatives.

Attitudinal Scales.—Relations between residential mobility plans and the social-psychological or attitudinal scales with age controlled are given in Table 61.

In comparisons involving the total sample, significant relations were reported for a number of attitudinal scales that were interrelated with residential mobility plans. Consistent relations were reported between plans and current neighborhood and housing evaluations. Other important relationships were noted between residential mobility plans, consumption styles, social mobility commitment, neighboring, desired accessibilities, and for the scale that reported upon important housing and neighborhood factors that the respondent utilized in choosing the current place of residence.

When age was controlled, the relationship between prospective residential mobility and evaluations of current neighborhood and housing remained, suggesting that these evaluations are not age-linked phenomena. That is to say, in both age groups movers were more likely than nonmovers to be dissatisfied with neighborhood and/or housing.

The relation which was found for the remaining scales when the total sample was considered appeared to be age-linked. That is to say, when age was controlled, there were different relationships noted within the age categories. The relations between residential mobility and services satisfaction, consumption style, social mobility commitment, neighboring, and neighbors and neighborhood reputation disappeared for the younger age group but held for the older age category. In the older age category, movers were more likely than nonmovers to have a high consumption style, high social mobility commitment, low neighboring, and evaluate neighbors and neighborhood reputation as being important. Opposite results were noted for desired accessibilities and the scale that assesses the important housing and neighborhood factors in choosing the current place of residence. In these instances, younger movers were more likely than older movers to desire a change in accessibility and to emphasize the cost of the unit and emphasize other specific aspects of the housing unit. Also, although neighbors and neighborhood reputation were not important for the over-all sample or for the younger age category, movers in the older age classification were more likely than nonmovers to consider the neighbors and neighborhood reputation as being important.

No significant relationships for the total sample, or when age controls were applied, were found for familism, neighborhood perception as influencing social mobility, urban-suburban orientation, mental well-being, and for most of the scales concerned with factors important in the selection of the current place lived in.

These data tend to suggest that differential current housing and neighborhood evaluations play a major role in residential mobility for all age groups. Also, it appears that at the younger age level, accessibilities and specific housing factors such as costs, family room availability, etc., are important features. At the older age level, emphasis is upon consumption styles, social mobility commitment, and neighbor and neighborhood reputation factors rather than costs or accessibilities.

A PROPOSITIONAL INVENTORY OF PROSPECTIVE RESIDENTIAL MOBILITY

In this section propositions are presented that can be thought of as summarizing the research findings given earlier. Propositions are divided into general and specific. The general propositions suggest hypotheses for further investigation. They are presented because it is believed that the literature search and empirical analysis have resulted in formulations that can be generalized beyond the specific variables (indicators) used in the analysis and beyond the national sample. That is, the variables used may be thought of as a sample of all possible variables under the more general concepts used. It is assumed that if other similar variables had been used and these were considered as coming from the same total universe of indicators (that is, a sample) the research results would have been similar

to those reported herein. In addition, specific propositions have been derived relative to the actual indicators used in this research. In this regard, then, one may reject the general propositions, but still utilize the specific propositions as leads for further research and for modeling efforts.

Specific propositions are divided into those that apply to (1) all ages, (2) younger households only, and (3) older households only.

The major qualification that should be noted when evaluating the propositions is that each proposition should be preceded by the statement "at a given point in time." After the planned follow-up interviews have been conducted, this qualifying phrase may be removed for many of the propositions. It also should be reemphasized, as pointed out earlier, that the concern here is with prospective residential mobility plans. Most of the explanatory variables were selected with this criterion measure in mind. However, the analysis stressing livability expectations and preferences also hints as to what kind of housing and neighborhood environment potential movers may select at their next opportunity.

Background Characteristics

A. General Propositions
  1. Social and demographic (background) characteristics are differentially related to residential mobility.

TABLE 61

RESIDENTIAL MOBILITY AND ATTITUDINAL
SCALES WITH AGE CONTROLLED

	SIGNIFICANCE LEVELS		
	TOTAL SAMPLE	AGE CATEGORIES	
VARIABLE DESCRIPTION		≤ 34	≥ 35
1. Familism	NS	NS	NS
2. Consumption styles	0.05	NS	0.05
3. Social mobility commitment	0.001	NS	0.001
4. Neighborhood perception and social mobility	NS	NS	NS
5. Urban-suburban orientation	NS	NS	NS
6. Mental well-being	NS	NS	NS
7. Neighboring	0.01	NS	0.05
8. Neighbors and neighborhood reputation	NS	NS	0.05
9. Housing evaluation	0.001	0.001	0.001
10. Evaluation of sufficiency of rooms	0.001	0.001	0.001
11. Overall neighborhood evaluation	0.001	0.001	0.001
12. Neighborhood and services evaluation	0.001	0.001	0.001
13. Services evaluation	0.001	NS	0.001
14. Subscale—neighborhood satisfaction	0.001	0.001	0.001
15. Subscale—neighbor evaluation	0.001	0.001	0.001
16. Important factors in choosing a neighborhood	NS	NS	NS
17. Important housing and neighborhood factors in choosing current place	0.01	0.05	NS
18. Important housing characteristics in selection of current place	NS	NS	NS
19. Housing and neighborhood preferences	NS	NS	NS
20. Desired accessibility	0.01	0.05	NS

2. Households with younger heads are more likely to be residentially mobile than are households with older heads.

B. Specific Propositions
   1. All ages
      (a) Nonwhite households are more likely than white households to be residentially mobile.
      (b) The location of households before the last move is related to subsequent residential moves, with out-of-state migrants and newly formed households more likely than in-state and intrametropolitan movers to be residentially mobile.
      (c) Households that own or are buying their own homes are less likely to be residentially mobile than are renters.
      (d) Socio-economic status is not related to residential mobility.
      (e) Price of current housing (owners and renters) is not related to residential mobility.
      (f) Under age restrictions, there is no relationship between residential mobility and the following:
         (1) Size of household
         (2) Expectations of staying on current job
         (3) Year moved into current place of residence (length of residence)
   2. Younger ages
      Past movers within the same city or town in an SMSA and newly established households are more likely than others to be residentially mobile.
   3. Older ages
      Households whose head's workplace is in the suburbs are more likely to be residentially mobile than those whose head's workplace is within the central city.

Current Environmental Conditions

A. General Propositions
   1. Households who are dissatisfied with their current environmental conditions are more likely to be residentially mobile than satisfied households.
   2. Households who live under current environmental conditions rated poor or undesirable by outside evaluators are more likely to be residentially mobile than those who live under conditions rated good or desirable by outside evaluators.

B. Specific Propositions
   1. All ages
      (a) Households with housing dissatisfaction are more likely to be residentially mobile than are those who are satisfied with their housing.
      (b) Households with neighborhood dissatisfaction are more likely to be residentially mobile than are those who are satisfied with their neighborhood.
      (c) Households dissatisfied with the number of rooms are more likely to be movers than those who are satisfied.

      (d) Households dissatisfied with the number of bedrooms are more likely to be movers than those who are satisfied.
      (e) Households dissatisfied with the number of bathrooms are more likely to be movers than those who are satisfied.
      (f) Households who are dissatisfied with their accessibility to services, amenities, etc., are more likely to be movers than those who are satisfied.
      (g) Households who live in dwelling units judged to have a poor interior appearance are more likely to be movers than those who live in better appearing housing.
      (h) Households who live in dwelling units judged to have a poor exterior appearance are more likely to be movers than those who live in better appearing housing.
      (i) Households who live in dwelling units judged to be in a poor state of repair are more likely to be movers than those who live in good conditioned housing units.
      (j) Households who live on a street judged to have homes in a poor state of repair are more likely to be residentially mobile than those who live on a street in which the surrounding homes are in a good state of repair.
      (k) Households who live on a street judged to have an over-all poor rating are more likely to be residentially mobile than those who live on a street judged to be over-all desirable.
      (l) Households who live on a street judged to be mainly a mix of commercial and industrial are more likely to be residentially mobile than those who live on streets with other types of mix (i.e., residential or residential and commercial).
      (m) Households who live in neighborhoods with a high noise level are more likely to be residentially mobile than those who live on streets with an average or very low amount of noise.
      (n) Households who live in the central city are more likely than other metropolitan households to be residentially mobile.
   2. Younger ages
      (a) Households who live in intermediate size metropolitan regions are more likely to be residentially mobile than those residing in small and large metropolitan regions.
      (b) Households who reside in the South and West are more likely to be residentially mobile than households of other regions.
   3. Older ages
      Households who reside in the Northeastern region are more likely to be residentially mobile than households of other regions.

Accessibility Opportunities

A. General Propositions
   In general, current accessibility opportunities are rela-

tively unimportant in differentiating movers from non-movers.

B. Specific Propositions
  1. All ages
     (a) Households who currently live some distance from head's workplace are more likely to be movers than those who live close to head's workplace.
     (b) There is no relationship between residential mobility and the following current accessibility opportunities:
        (1) Grocery shopping
        (2) Downtown
        (3) Shopping center
        (4) Doctor's office
        (5) Hospital/clinic
        (6) Parks/playgrounds
        (8) Church
  2. Younger ages
     Households who live some distance from a shopping center are more likely to be residentially mobile than are those who live close to a shopping center.
  3. Older ages
     Households who live some distance from their best friends are more likely to be residentially mobile than are those who live close to friends.

Livability Expectations and Preferences

A. General Propositions
  1. Livability expectations and preferences are age-linked.
  2. Desired distances or accessibility of various services and amenities differentiate movers from non-movers, although most of these desires are age-related in that in younger and older age categories different variables distinguish movers from non-movers.
  3. In general, specific housing and neighborhood preferences do not distinguish the residentially mobile from the residentially stable.
  4. In general, importance of specific aspects of the neighborhood in choosing a neighborhood does not differentiate movers from nonmovers.
  5. Some expectations and preferences are more highly valued than others and are traded off; some of these trade-offs distinguish the residentially mobile from the residentially stable.

B. Specific Propositions
  1. All ages
     (a) There is no relationship between residential mobility and the following livability expectations and preferences:
        (1) Desired distance from grocery shopping, doctor's office, hospital/clinic
        (2) Preference in age of housing
        (3) Preference in age of neighborhood
        (4) Preference in number of children in neighborhood
        (5) Importance of general appearance of neighborhood in choosing a neighborhood
        (6) Importance of availability of public services in choosing a neighborhood
        (7) Importance of light traffic in choosing a neighborhood
        (8) Importance of similarity of neighbors in choosing a neighborhood
     (b) Under age restrictions, there is no relationship between residential mobility and the following:
        (1) Desired distance from elementary school
        (2) Desired distance from parks/playgrounds
        (3) Preference in number of floors in the housing unit
  2. Younger ages
     (a) Households who would like to be closer to a shopping center (see Accessibility Opportunities, B, 2) are more likely to be residentially mobile than are those who express some other desired distance.
     (b) Households who would like to be closer to church are more likely to be residentially mobile than are those who express another desired distance.
     (c) Households who prefer a modern architectural style in their housing are more likely to be residentially mobile than are those who express another choice of architectural style.
     (d) Households who stress the importance of recreational facilities in choosing a neighborhood are more likely to be residentially mobile than are those who do not stress their importance.
     (e) Households who are willing to trade off a desirable neighborhood for a good house are more likely to be residentially mobile than are those who would not.
     (f) Households who are willing to trade off a good location for a good neighborhood are more likely to be residentially mobile than those who would not.
     (g) Households who are willing to trade off a poor outside vs good inside appearance are more likely to be residentially mobile than those who would not.
  3. Older ages
     (a) Households who would like to be closer to best friends (see Accessibility Opportunities, B, 3) are more likely to be residentially mobile than are those who express some other desired distance.
     (b) Households who would like to be closer to downtown are more likely to be residentially mobile than are those who express some other desired distance.
     (c) Households who would like to be closer to a

shopping center are more likely to be residentially mobile than are those who express some other desired distance.

(d) Households who like to be closer to a doctor's office are more likely to be residentially mobile than are those who express some other desired distance.

(e) Households who like to be closer to a hospital/clinic are more likely to be residentially mobile than are those who express some other desired distance.

(f) Households who would like to be closer to head's workplace are more likely to be residentially mobile than are those who express some other desired distance.

(g) Households who prefer a large lot are more likely to be residentially mobile than are those who express a preference for a small lot.

(h) Households who stress the importance of a school system in choosing a neighborhood are more likely to be residentially mobile than those who do not stress its importance.

(i) Households who stress the importance of the neighborhood's reputation in choosing a neighborhood are more likely to be residentially mobile than are those who do not stress its importance.

(j) Households who stress the importance of friendliness of neighbors in choosing a neighborhood are more likely to be residentially mobile than are those who do not stress its importance.

Attitudinal Scales

A. General Propositions

1. Households who are are dissatisfied with their current environmental conditions are more likely to be residentially mobile than satisfied households.

2. In general, specific attitudinal factors, other than current environmental evaluations do not differentiate movers from nonmovers.

B. Specific Propositions

1. All ages
   (a) Households who are dissatisfied with their current environmental conditions are more likely to be residentially mobile than those who are satisfied. (See Current Environmental Conditions, B, 1, a.)

(b) Households who are dissatisfied with the sufficiency in the number of rooms are more likely to be residentially mobile than those who are satisfied. (See Current Environmental Conditions, B, 1, c, d, and e.)

(c) Households who are dissatisfied with their neighborhood are more likely to be residentially mobile than those who are satisfied with their neighborhood. (See Current Environmental Conditions, B, 1, b.)

(d) There is no relationship between residential mobility and the following attitudinal scales:
   (1) Familism
   (2) Neighborhood perception and social mobility
   (3) Urban-suburban orientation
   (4) Mental well-being
   (5) Important factors in choosing a neighborhood
   (6) Housing and neighborhood preferences
   (7) Important housing characteristics in selection of current place of residence

2. Younger ages
   (a) Households who do not define important factors in choosing a neighborhood are more likely to be residentially mobile than those who do define important factors.

(b) Households who desire to change their accessibility to services and amenities are more likely to be residentially mobile than those who do not desire to change their accessibility.

3. Older ages
   (a) Households who have a familistic consumer's attitude are more likely to be residentially mobile than those who have a nonfamilistic attitude.

(b) Households who have a high social mobility commitment are more likely to be residentially mobile than those who have a low social mobility commitment.

(c) Households who are not neighboring conscious are more likely to be residentially mobile than are those who are neighboring conscious.

(d) Households who do not stress the importance of neighbors are more likely to be residentially mobile than those who stress the importance of neighbors.

(e) Households who are dissatisfied with public services are more likely to be residentially mobile than those who are satisfied with them.

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TABLE 62

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES
AND PROPORTIONS FOR SCALE ON CONSUMPTION: NATIONAL SAMPLE

QUESTION	AGREE/ DON'T KNOW (%)	LATENT CLASS PROPORTIONS	
		I	II
Do you agree or disagree that . . .			
105. It is more important to spend money entertaining friends rather than buying extra things for oneself.	20.6	0.212	0.017
106. It is more important to spend money helping one's parents or close relatives rather than buying extra things for oneself.	81.0	0.906	0.466
107. It is more important to spend money buying things for the children rather than buying extra things for oneself.	92.1	0.999	0.647
108. It is more important to spend money entertaining people who can help you get ahead rather than buying extra things for oneself.	35.6	0.392	0.076
Class size		0.837	0.163

TABLE 63

PERCENT OF RESPONDENTS WITH WILLINGNESS RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON SOCIAL MOBILITY COMMITMENT [a]

QUESTION	NO. RESPONSES	WILLING (%)	LATENT CLASS PROPORTIONS	
			I	II
109. Sacrificed job security	587	39.77	0.462	0.184
110. Keep quiet about political preference	747	50.61	0.580	0.262
111. To move from present neighborhood	1156	78.32	0.901	0.392
112. To see less of friends	1073	72.70	0.920	0.090
113. To see less of close relatives	982	66.53	0.852	0.046
Class size			0.765	0.235

[a] Willingness to know responses.) in order to get ahead. (Willing category also includes don't

TABLE 64

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON HOUSING SATISFACTION: NATIONAL SAMPLE [a]

QUESTION	SATISFIED (%)	LATENT CLASS PROPORTIONS		
		I	II	III
190. The way the rooms are arranged	83.3	0.274	0.948	0.704
191. The heating equipment	80.4	0.602	0.912	0.460
192. The size of the rooms	79.8	0.102	0.909	0.776
193. The inside appearance of this place	81.2	0.529	0.963	0.327
194. The age of this place	84.8	0.552	0.989	0.417
195. The outside appearance of this place	76.8	0.573	0.929	0.185
196. The size of the yard or grounds	82.0	0.511	0.921	0.598
197. The storage space	66.9	0.063	0.808	0.457
198. The amount of privacy you have	87.1	0.439	0.960	0.767
Class size		0.102	0.741	0.157

[a] Please tell me whether you are satisfied or dissatisfied with each of these things in this (house/apartment). Are you satisfied or dissatisfied with

TABLE 65

PERCENT OF RESPONDENTS WITH ENTIRELY SATISFIED RESPONSES AND LATENT CLASS PROPORTIONS FOR SCALE ON NEIGHBORHOOD SATISFACTION [a]

QUESTION	NO. RESPONSES	ENTIRELY SATISFIED (%)	LATENT CLASS PROPORTIONS		
			I	II	III
244. Privacy	1004	68.02	0.947	0.263	0.370
245. Quietness	907	61.45	0.911	0.219	0.226
246. Friendliness of neighbors	991	67.14	0.913	0.280	0.438
247. Reputation	1001	67.82	1.000	0.189	0.342
248. Kind of people	956	64.77	0.971	0.151	0.298
249. Cleanliness	889	60.23	0.922	0.012	0.273
250. Condition of streets	826	55.96	0.794	0.012	0.385
251. Condition of houses and apartments	872	59.08	0.911	0.001	0.279
252. Spaciousness of yard or grounds	884	59.89	0.877	0.115	0.333
253. Amount of traffic on street	715	48.44	0.708	0.089	0.251
254. Quality of education available	848	57.45	0.920	0.077	0.575
255. Water system	1141	77.30	0.861	0.114	0.963
256. Sewage disposal	1126	76.29	0.867	0.084	0.946
257. Fire protection	1198		0.921	0.158	1.000
258. Police protection	1073	81.17	0.877	0.029	0.877
259. Parks, open space	841	56.98	0.777	0.000	0.599
260. Accessibility of present location	1173	79.47	0.898	0.315	0.856
Class size			0.570	0.132	0.298

[a] Satisfaction with .. . .

TABLE 66

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES AND LATENT CLASS PROPORTIONS FOR SCALE ON PERCEPTION OF NEIGHBORHOOD IN RELATION TO SOCIAL MOBILITY: NATIONAL SAMPLE

QUESTION	AGREE/ DON'T KNOW (%)	LATENT CLASS PROPORTIONS		
		I	II	III
Do you agree or disagree with the following statements?				
261. Living in the right kind of neighborhood helps one to get a better job.	41.8	0.118	0.891	0.100
262. Living in the right kind of neighborhood one gets to know people that can help one get ahead.	57.7	0.267	1.000	0.235
263. In the long run, living in the right kind of neighborhood helps one to make more money.	41.6	0.072	0.867	0.125
264. The neighborhood in which a person lives should show how much money he has.	22.6	0.000	0.395	0.817
265. If a man has an important job he should be very careful as to the kind of neighborhood in which he lives.	62.1	0.329	0.890	1.000
Class size		0.512	0.421	0.067

TABLE 67

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES AND LATENT CLASS
PROPORTIONS FOR SCALE ON URBAN-SUBURBAN ORIENTATION:
NATIONAL SAMPLE

QUESTION	AGREE (%)	LATENT CLASS PROPORTIONS		
		I	II	III
Do you agree with or disagree with each statement?				
266. It is better to live in the suburb than the city because there is less delinquency there.	48.3	0.078	0.741	0.000
267. Living in the suburbs gives one more freedom than living in the city.	67.5	0.254	0.927	0.229
268. The suburbs are more attractive than the city.	82.2	0.325	0.952	1.000
269. It is worthwhile to live in a suburban area even though the breadwinner of the family has a long drive to work each day.	57.2	0.000	0.806	0.365
270. The suburbs are better for raising children than the city.	79.6	0.269	1.000	0.702
271. In the suburbs, the people are friendlier than they are in the city.	51.6	0.252	0.788	0.000
Class size		0.199	0.702	0.099

TABLE 68

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES AND LATENT CLASS
PROPORTIONS FOR SCALE ON NEIGHBORING: NATIONAL SAMPLE

QUESTION	AGREE (%)	LATENT CLASS PROPORTIONS	
		I	II
Do you agree or disagree that . . .			
327. It is a good idea to loan household equipment, garden tools, or food to neighbors.	46.7	0.379	0.766
328. Neighbors should frequently entertain each other in their homes.	36.2	0.226	0.822
329. Neighbors should feel free to drop in on you whenever they want.	46.3	0.314	0.966
330. One should always become very friendly with neighbors.	40.4	0.256	0.905
Class size		0.780	0.220

TABLE 69

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES AND LATENT CLASS
PROPORTIONS FOR SCALE ON FAMILISM: NATIONAL SAMPLE

QUESTION	AGREE (%)	LATENT CLASS PROPORTIONS	
		I	II
Do you agree or disagree that . . .			
331. People should always get together with relatives on holidays and other important special occasions.	78.8	0.506	0.906
332. Children should be included in all of the activities of a family.	61.4	0.275	0.757
333. A father should take care of the children when the mother wants some time to herself.	94.4	0.852	0.984
334. Having children is the most important thing that a married woman can do.	85.5	0.606	0.960
Class size		0.206	0.794

TABLE 70

PERCENT OF RESPONDENTS WITH POSITIVE RESPONSES AND LATENT CLASS PROPORTIONS FOR SCALE ON MENTAL WELL-BEING: NATIONAL SAMPLE

QUESTION	OFTEN/ SOMETIMES [a] (%)	LATENT CLASS PROPORTIONS	
		I	II
Do you often, sometimes, or rarely . . .			
343. Feel weak all over.	30.1	0.558	0.123
344. Feel restless so that you can't sit long in a chair.	36.4	0.619	0.188
345. Have trouble making up your mind.	33.3	0.617	0.137
346. Worry.	60.6	0.920	0.392
347. Have trouble getting going.	33.4	0.607	0.147
348. Feel you have to be on guard with other people.	22.3	0.394	0.105
349. Feel people are against you.	9.1	0.214	0.007
350. Feel low in spirits.	38.4	0.720	0.151
351. Have personal worries that get you down physically.	19.2	0.446	0.017
Class size		0.407	0.593

[a] Contrasting categories were: rarely and never.

TABLE 71

PERCENT OF RESPONDENTS WITH VERY IMPORTANT RESPONSES AND LATENT CLASS PROPORTIONS FOR SCALE ON IMPORTANT FACTORS IN SELECTION OF PRESENT HOUSING UNIT [a]

QUESTION	NO. RESPONSES	VERY IMPORTANT (%)	LATENT CLASS PROPORTIONS		
			I	II	III
169. Dwelling unit itself	950	64.36	0.502	0.840	0.724
170. Lot or grounds	645	43.70	0.217	0.606	0.574
171. Immediate neighbors	334	22.63	0.090	0.532	0.203
172. General location	946	64.09	0.400	0.996	0.722
173. Cost	1019	69.04	0.528	1.000	0.703
183. Separate dining room	551	37.33	0.264	0.098	0.585
185. Family or recreation room	627	42.48	0.228	0.214	0.696
187. Garage or carport	944	63.96	0.368	0.520	0.964
189. Basement	729	49.39	0.278	0.323	0.783
Class size			0.382	0.146	0.473

[a] Importance of . . . in the decision to accept present housing unit. Very important category for items 183, 185, 187, and 189 is *important* only; the very important category was not included in possible responses to these questions.

TABLE 72

PERCENT OF RESPONDENTS WITH IMPORTANT RESPONSES AND LATENT CLASS PROPORTIONS FOR SCALE ON HOUSING ATTRIBUTED IN SELECTING PRESENT HOUSING UNIT [a]

QUESTION	NO. RESPONSES	IMPORTANT (%)	LATENT CLASS PROPORTIONS	
			I	II
169. Dwelling unit itself	950	64.36	0.560	0.703
183. Separate dining room	551	37.33	0.072	0.497
185. Family or recreation room	627	42.48	0.041	0.586
187. Carport or garage	944	63.96	0.243	0.811
189. Basement	729	49.39	0.126	0.650
Class size			0.340	0.660

[a] Importance of having . . . Important category for item 169 is *very important* only; the important category was not included as a possible response to this question.

TABLE 73

PERCENT OF RESPONDENTS WITH VERY IMPORTANT RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE ON IMPORTANCE
OF VARIOUS FACTORS IN CHOOSING A NEIGHBORHOOD [a]

QUESTION	NO. RESPONSES	VERY IMPORTANT (%)	LATENT CLASS PROPORTIONS	
			I	II
171. Neighbors	334	22.63	0.237	0.182
308. School system	847	57.38	0.627	0.378
309. General appearance	1000	67.75	0.809	0.188
310. Availability of public services	1277	86.52	0.952	0.553
311. Recreation facilities	685	46.41	0.557	0.125
312. Light traffic	942	63.82	0.750	0.227
313. Neighborhood's reputation for trouble	1333	90.31	0.990	0.598
314. Similarity of neighbors	505	34.21	0.392	0.124
315. Friendliness of neighbors	914	61.92	0.662	0.425
Class size			0.784	0.216

[a] Importance of . . . in choosing a neighborhood; except for item 171 which was importance in accepting present housing unit.

TABLE 74

PERCENT OF RESPONDENTS WITH VERY IMPORTANT RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE ON NEIGHBORS
AND REPUTATION OF NEIGHBORHOOD [a]

QUESTION	NO. RESPONSES	VERY IMPORTANT (%)	LATENT CLASS PROPORTIONS	
			I	II
171. Immediate neighbors	334	22.63	0.332	0.113
313. Neighborhood's reputation for trouble	1333	90.31	0.973	0.829
314. Similarity of neighbors	505	34.21	0.618	0.030
315. Friendliness of neighbors	914	61.92	0.910	0.292
Class size			0.634	0.366

[a] Importance of . . . in choosing a neighborhood; except for item 171 which was importance in accepting present housing unit.

TABLE 75

PERCENT OF RESPONDENTS EXPRESSING PREFERENCES AND LATENT CLASS
PROPORTIONS FOR SCALE ON HOUSING AND NEIGHBORHOOD
PREFERENCES [a]

QUESTION	NO. RESPONSES	CHARACTER (%)	LATENT CLASS PROPORTIONS		
			I	II	III
302. Vertical floor arrangement	1012	68.56- one floor	0.461	0.721	1.000
303. Architectural style	671	45.46- modern	0.706	0.273	0.733
304. Age of housing	557	37.74- new	0.668	0.059	0.670
305. Age of neighborhood	260	17.62- new	0.456	0.000	0.278
306. Number of children in neighborhood	260	17.62- many	0.435	0.312	0.069
307. Size of lot	922	62.47- large	1.000	0.582	0.490
Class size			0.205	0.490	0.305

[a] Preference of . . .

TABLE 76

PERCENT OF RESPONDENTS WITH ENTIRELY SATISFIED RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON NEIGHBORHOOD SATISFACTION SUBSCALE [a]

QUESTION	NO. RESPONSES	ENTIRELY SATISFIED (%)	LATENT CLASS PROPORTIONS	
			I	II
244. Privacy	1004	68.02	0.181	0.887
245. Quietness	907	61.45	0.085	0.833
246. Friendliness of neighbors	991	67.14	0.232	0.872
247. Reputation of neighborhood	1001	67.82	0.130	0.932
248. Kind of people	956	64.77	0.064	0.904
Class size			0.281	0.719

[a] Satisfaction with . . . of present neighborhood.

TABLE 77

PERCENT OF RESPONDENTS WITH ENTIRELY SATISFIED RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE ON
NEIGHBORHOOD SATISFACTION SUBSCALE [a]

QUESTION	NO. RESPONSES	ENTIRELY SATISFIED (%)	LATENT CLASS PROPORTIONS	
			I	II
249. Cleanliness	889	60.23	0.147	0.921
250. Condition of streets	826	55.96	0.190	0.822
251. Condition of houses and apartments	872	59.08	0.117	0.932
252. Spaciousness of yards or grounds	884	59.89	0.226	0.878
253. Amount of traffic on street	715	48.44	0.174	0.705
Class size			0.404	0.569

[a] Satisfaction with . . . of present neighborhood.

TABLE 78

PERCENT OF RESPONDENTS WITH ENTIRELY SATISFIED RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON NEIGHBORHOOD SATISFACTION SUBSCALE [a]

QUESTION	NO. RESPONSES	ENTIRELY SATISFIED (%)	LATENT CLASS PROPORTIONS		
			I	II	III
254. Quality of education available	848	57.45	0.830	0.154	0.735
255. Water system	1141	77.30	1.000	0.202	0.528
256. Sewage disposal	1126	76.29	0.985	0.167	0.582
257. Fire protection	1198	81.17	0.967	0.209	0.968
258. Police protection	1073	72.70	0.866	0.050	0.999
259. Parks and open space	841	56.98	0.710	0.005	0.810
Class size			0.708	0.159	0.132

[a] Satisfaction with . . . of present neighborhood.

TABLE 79

PERCENT OF RESPONDENTS WITH SATISFACTORY RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON HOUSING SATISFACTION [a]

QUESTION	SATISFIED (%)	LATENT CLASS PROPORTIONS		
		I	II	III
177. Rooms	69.4	0.086	0.902	0.133
179. Bedrooms	73.6	0.159	0.946	0.136
181. Bathrooms	75.3	0.490	0.842	0.664
190. Room arrangement	83.3	0.799	0.854	0.731
191. Heating equipment	80.4	0.887	0.838	0.435
192. Size of rooms	79.8	0.633	0.833	0.868
193. Inside appearance	81.2	0.996	0.829	0.228
194. Age of dwelling unit	84.8	0.988	0.870	0.473
195. Outside appearance	76.8	0.959	0.784	0.206
196. Size of yard/grounds	82.0	0.800	0.840	0.846
197. Storage space	66.9	0.542	0.713	0.565
198. Privacy	87.1	0.760	0.893	0.936
Class size		0.115	0.715	0.170

[a] Satisfaction with:
Items 177, 179, and 181: Sufficiency of number of . . .
Items 190-198: Satisfaction with . . .

TABLE 80

PERCENT OF RESPONDENTS WITH SATISFACTORY RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON ACCESSIBILITY PREFERENCES [a]

QUESTION	THE SAME/ DOESN'T MATTER (%)	LATENT CLASS PROPORTIONS		
		I	II	III
202. Grocery shopping	88.1	0.268	0.857	0.976
206. Best friend(s)	85.6	0.438	0.840	1.000
210. Elementary school	94.0	0.592	0.992	0.879
214. Downtown	87.6	0.450	0.883	0.942
218. Shopping center	87.9	0.249	0.914	0.960
222. Park/playground	84.9	0.546	1.000	0.853
226. Doctor's office	83.5	0.000	0.930	0.922
230. Hospital/clinic	86.4	0.037	0.984	0.903
234. Head's work place	59.6	0.344	0.241	0.017
239. Church	76.0	0.359	0.805	1.000
Class size		0.049	0.289	0.662

[a] Desired distance from . . .
It should be noted that there is a "relative" lack of variation in responses to questions included in this scale.

TABLE 81

PERCENT OF RESPONDENTS WITH ENTIRELY SATISFIED RESPONSES
AND LATENT CLASS PROPORTIONS FOR SCALE
ON NEIGHBORHOOD SATISFACTION [a]

QUESTIONS	ENTIRELY SATISFIED (%)	LATENT CLASS PROPORTIONS		
		I	II	III
244. Privacy	68.0	0.906	0.273	0.307
245. Quietness	61.4	0.854	0.152	0.321
246. Friendliness of neighbors	67.1	0.878	0.398	0.129
247. Reputation	67.8	0.890	0.281	0.585
248. Kind of people	64.8	0.853	0.278	0.400
249. Cleanliness	60.2	0.826	0.032	0.801
250. Condition of streets	56.0	0.751	0.084	0.715
251. Condition of houses and apartments	59.1	0.828	0.000	0.830
252. Spaciousness of yard or grounds	59.9	0.840	0.112	0.517
253. Amount of traffic on street	48.4	0.700	0.031	0.416
254. Quality of education available	57.4	0.908	0.291	0.424
255. Water system	77.3	0.934	0.591	0.184
256. Sewage disposal	76.3	0.935	0.548	0.252
257. Fire protection	81.2	0.978	0.600	0.541
258. Police protection	81.2	0.912	0.450	0.508
259. Parks, open space	57.0	0.803	0.258	0.262
Class size		0.049	0.289	0.662

[a] Satisfaction with . . .

CHAPTER FIVE

FINDINGS—AN EXPLANATION OF RESIDENTIAL CHOICE

The previous chapter focused on explaining the household's entry into the mobility process; this chapter focuses on the outcome of that process. From a look at "which families move" and "why families move," the analysis shifts to an examination of households who have made the decision to move—to the question of what families choose in housing accommodations and neighborhood environs.

This chapter is organized so that a preliminary conceptualization of the variables and relationships involved in explaining the outcome of residential mobility is presented first. Secondly, a series of statistical analyses is presented through which specific hypotheses suggested by previous researchers are tested in the framework of the conceptual schema and at the same time the conceptual schema is refined and simplified. The third and last section summarizes the results of the empirical analysis.

PRELIMINARY CONCEPTUAL SCHEMA

The conceptual schema used as a framework for the empirical analysis consists of three sets of variables and the

relationships between them. The first set includes the pre-move background factors which describe the social background characteristics and attitudinal characteristics of the household, and its immediate residential accommodations. These are hypothesized to be the basic predictors of the outcome of the move. The second set comprises the move-related factors, consisting of type of move and general location in the metropolitan area. These are considered as the intermediate outcomes of the move, dependent on the first predictor set of pre-move background factors and at the same time considered to help predict the third set of variables. The third set of variables describes the outcome of the move in terms of housing accommodations and accessibility. In their most general form, the relationships are represented in Figure 7. The objective is to "explain" the final outcome of a household's move by referring to the status of a household's pre-move background factors and intermediate move-related factors.

This simplistic conceptual schema can be given more meaning by a brief description of the variables included in each of the three sets of factors. A more thorough discus-

sion of the individual relationships between predictors and outcome is deferred until the analysis of those relationships is taken up in the next section.

Pre-move background factors include twelve variables in three categories:

Social Background Factors

1. Income (at the time of the move)
2. Race
3. Household size (at the time of the move)
4. Age of head of the household (at the time of the move)

Attitudinal Factors

5. Familism
6. Consumerism style
7. Social mobility commitment
8. Neighborhood contribution to social mobility
9. Urban-suburban orientation

Immediately Previous Residential Character

10. Tenure and dwelling unit type combination
11. Rent level (if rental tenure) or value of dwelling unit (if ownership tenure)
12. Number of rooms

The four social background characteristics of income, race, household size, and age of the head of the household have been identified in previous research to have a bearing on residential mobility and mobility outcomes. These four are hypothesized as the most relevant to the household's selection of the new place as opposed to its decision to move. Income and race may be thought of as the major constraints in the selection of a new place, just as they were in the decision to move. Household size and age of head of household are closely related to the life-cycle concept, which has been hypothesized to provide the basic impetus to mobility. Similarly, they provide the basis for specifications regarding the selection of a new place (8, 40, 41).

In adidtion to social background factors, certain attitudinal factors of the household have also been suggested by some to affect residential mobility. Though most studies emphasize their relation to the decision to move, five attitudinal indicators have been selected for their promise in supplementing household size and age as indicators of specifications for the new place being sought. The five are familism, an index of respondent's value of basic- or extended-family orientation; consumerism style, an index of consumption patterns; social mobility commitment, an index of the sacrifice one would make to "get ahead in life"; and its residential correlate, the respondent's view on the importance of one's neighborhood as a contribution to "getting ahead" and as a symbol of status; and, finally, urban vs suburban orientation, an index of the respondent's bias toward urban vs suburban living (13, 42).

A third category of background variables describing the household's immediately past residential experience is also suggested to be important in the selection of the new housing unit, just as it was in the decision to move (8, 43, 44). Three properties of the former residence are used in parts of the analysis: tenure and dwelling unit type combination, where dwelling unit type refers to whether the structure was

single-family, apartment, or other; housing costs or values measured as monthly rent level (if rental tenure) or as value of the place (if single-family and ownership tenure); and number of rooms, as an indication of the size of the dwelling unit being moved out of.

Move-Related Factors.—In addition to the three types of background variables the analysis also utilizes as predictors a set of variables related to the move itself. These are included as intermediate outcomes and intermediate predictors, on the assumption that even though they describe some aspect of the move they also tend to influence other aspects of the move outcome. That is, it is hypothesized that households having similar background factors tend to have different mobility outcomes if they have significantly different intermediate outcomes. The three move-related variables include the reasons for moving, type of move, and location in the metropolitan area:

1. Reasons for Moving.—Job change; forced move or household formation; location oriented—convenience or neighborhood quality; tenure-dwelling unit type desires— e.g., wanted to own or wanted single-family houses; dwelling unit desires—mainly "space" or "better place."

2. Type of Move.—Within neighborhood; within the metropolitan area but not within the neighborhood; moved in from outside the metropolitan area.

3. Location in the Metropolitan Area.—Central city; outside of central city.

Reasons for moving are most often discussed as explanations for decision to move and are hypothesized to be a result of background social attitudinal and residential characteristics. At the same time they may be important clues to the household's set of specifications for the new place. This is especially true for moves made for reasons of desired change in the dwelling unit, neighborhood, or location.

Some moves result from nonhousing decisions, such as getting married or changing a job, or from events such as a serious fire, eviction, urban renewal, and so on. Such moves may be in response to the attractiveness of another place or in response to dissatisfaction with the present residence, rather than any strong positive pulling attraction of another place. In such cases, specifications for the new place might be expected to be closely related to ameliorating complaints associated with the reason for wanting to move (8, 43).

The type of move refers to whether the move is made within the neighborhood, or not within the neighborhood but within the metropolitan area, or from outside the metropolitan area. This intermediate outcome of the move is hypothesized to be associated with background factors and the reason for moving. At the same time a recent study has suggested that type of move will affect the outcome location in the metropolitan area and the characteristics of the specific housing unit moved into (43).

A third category of intermediate outcome is the extent to which predictor variables help anticipate the tendency for the move to result in a central city location or a location outside the central city, and the extent to which this intermediate locational outcome influences the more specific accessibility and housing characteristics of the outcome.

Admittedly a crude description of location—central city vs suburban location—it is nevertheless an important one for land use and transportation planning.

Accessibility and Dwelling Unit Outcome.—The two previously discussed sets of factors shown in Figure 7 will serve as predictor variables in the analysis for the third set of variables. These refer to the more specific outcome of the move and consist of four variables in two categories:

Accessibility

Average time-distance to workplace of head of the household, downtown, shopping center, elementary school

Dwelling Unit

Tenure-dwelling unit type: the categories used in the analysis are ownership (single-family unit), rental (single-family unit), rental (apartment unit), rental (other)

Housing Costs

Rental (less than $50/mo., 50-79, 80-109, 110+), value of unit if ownership (under $10,000, 10-14,999, 15-19,999, 20,000+)

Size of dwelling unit in number of rooms

The accessibility variable is a composite index of accessibility to work, downtown, shopping center, and elementary school. The second category of outcomes consists of the characteristics of the specific dwelling unit moved into: tenure-dwelling unit type combination, housing costs being monthly rental or value of the dwelling unit if ownership tenure, and size of the dwelling unit in number of rooms.

The primary emphasis in the analysis, which is reconceptualized in Figure 8, will be on the relationships between pre-move variables and both sets of outcome variables. This relationship appears to be the most important building block toward a residential modeling capability. The influence of the move-related intermediate outcome variables on the accessibility and housing characteristics is examined in the analysis. But they are considered an intervening set of factors that may add to the more fundamental relationship between background variables and outcome, but not replace it. Indeed, it is hypothesized that the more related characteristics themselves are partially a function of the background variables. Thus, there is a two-step hierarchy to the predictor variables in which the pre-move background variables are emphasized as the more fundamental of the two levels.

The set of outcome variables can also be thought of as having a hierarchical order or a sequence of occurrence. The length of move is the first aspect of outcome to be explained in the analysis, followed by location, and finally by accessibility, and the characteristics of the specific dwelling unit itself. The reasoning is that each of the first two of these outcomes has an effect on the remaining outcome categories. For example, the length of the move is hypothesized to have an effect on location outcome. And both of these outcomes are hypothesized to have an effect on the characteristic of the specific dwelling unit outcome. In other words, the higher-order outcome is utilized in the analysis as a kind of intervening variable which will have

an effect on following lower-order outcomes over and above the effect of the basic pre-move predictor variables.

EMPIRICAL FINDINGS

The relationships reported in this section are derived within the preceding framework and are analyzed with simple bivariate statistical measures of χ^2 and Kendall's τ_c. They are measured between individual predictor variables and individual outcome variables. The stronger of these is then controlled for other strong predictors in order to determine the independent power of each predictor. The attempt is made to build up a pattern of relationships out of the sequence of simple statistics as the analysis proceeds. The last section then attempts to summarize that pattern and its implications.

The empirical analysis was performed on the subsample of 841 households who had moved at least once since January 1960, and not performed on the entire sample of 1,476 households. The behavior of this subsample of more recent movers is more adequately measured by the survey instrument and more relevant to present and future situations.

The General Pattern

Table 82 gives the preliminary indications of the pattern of uncontrolled associations between each of the predictor variables and each of the outcome variables uncontrolled for intermediate variables. Social background variables, and particularly income and race, are consistently strong predictors, as is previous residential experience and, intermittently, the move-related factors.

There are readily apparent differences in explaining the decision to move and the outcome of the move. The variables related to family cycle, such as age and the attitudinal variables, which were shown in the previous chapter to be among the strongest predictors of the decision to move, appear to be the weakest predictors of the outcome of the move.

With this preliminary indication of the pattern of relationships, it is now proposed to examine each outcome column of Table 82 separately. The effect of the predictor variables on length of move is first examined; then the effect they have on the resulting location (i.e., in the central
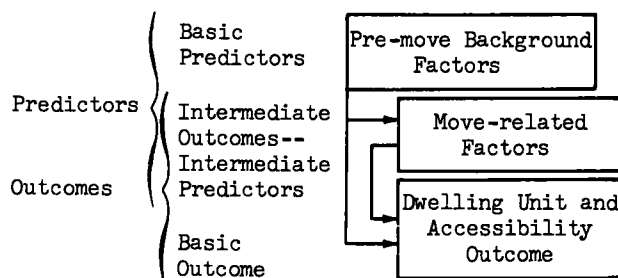

Figure 7. Conceptual schema.

city or outside); then their effect on accessibility; and, finally, their influence on characteristics of the dwelling unit itself. In the process of this more detailed examination, the findings are related to previous research, and control variables are introduced to distinguish the more basic relations from those that merely tend to be spurious reflections of these more basic relations.

Type of Move

Not only is the type of move of general interest to scholars and policy makers concerned with residential mobility, it is also of particular utility for residential modeling efforts if two kinds of relationships can be established. The first is between the predictors and length of move, because with these relationships clarified, a model can isolate intra-metropolitan moves which must be allocated in a model from intraneighborhood moves which may not need to be allocated. In this connection the model could be considered an open system, with the impact of the inmigrants and outmigrants on the housing market being assessed as interaction with the system's environment. The second useful

and necessary relationship would be between the type of move and subsequent residential selection of location, the accessibility of this location, and the dwelling unit characteristics. Substantial differences between the varying types (lengths) of move would further support the importance of this intermediate prediction as a more accurate means to allocate households to the housing supply.

In this section the first of these two necessary linkages—the ability to predict type (length) of move—is discussed. About 28 percent of the most recent moves made since 1960 were within the neighborhood, another 58 percent were within the same metropolitan area but not in the same neighborhood, and 14 percent moved into their present metropolitan area from outside. These findings are consistent with other research (45).

Previous studies are not very specific in suggesting hypotheses about type of move. In this study it is hypothesized that lower, nonwhite, single, and rental households are more likely to move within the neighborhood; that younger, middle income, full families, and households seeking ownership are much more likely to be represented in

PRE-MOVE BACKGROUND FACTORS (PREDICTORS)		MOVE-RELATED FACTORS (INTERMEDIATE OUTCOMES AND PREDICTORS)

A. Social Background
 	
   1. Income
   2. Race
   3. Household size
   4. Age of head of the
      household
 	
B. Attitudinal Factors
 	
   5. Familism
   6. Consumerism style
   7. Social mobility commitment
   8. Neighborhood contribution
      to social mobility
   9. Urban-suburban orientation
	C. Immediately Previous
	     Residential Character
	
	  10. Tenure and dwelling
	       unit type combination
	  11. Rent level (if rental
	       tenure) or value of
	       dwelling unit (if
	       ownership tenure)
	  12. Number of rooms
		1. Reasons for moving
		2. Type of move
		3. Location in the
		   metropolitan area

OUTCOME OF MOVE

A. Accessibility

   1. Average time-distance to work place of head of
      the household, downtown, shopping center,
      elementary school.

B. Dwelling Unit

   2. Tenure-dwelling unit type: the categories used
      in the analysis are ownership (single-family unit
      unit), rental (single-family unit), rental
      (apartment unit), rental (other)
   3. Housing Costs - rental (less than $50/mo., 50-79,
      80-109, 110), value of unit if ownership (under
      $10,000, 10-14,999, 15-19,999, 20,000+)
   4. Size of dwelling unit in number of rooms

Figure 8. Conceptualization of variables utilized in analysis of the outcome of the moving process.

TABLE 82

SUMMARY OF TABLE OF KENDALL'S τ_c INDICES OF ASSOCIATION BETWEEN BACKGROUND CHARACTERISTICS AND THE MOVING OUTCOME

		OUTCOMES				HOUSING COSTS	
PREDICTORS	TYPE OF MOVE: INTRA-NEIGHBORHOOD, INTRA-METRO, FROM OUTSIDE METRO	LOCATION: CENTRAL CITY OR NOT	ACCESSIBILITY	TENURE AND HOUSING UNIT TYPE	NO. OF ROOMS IN HOUSING UNIT	RENT	VALUE OF HOUSING UNIT
Social Background							
Income	0.18	0.40	0.05 [a]	0.31	0.36	0.45	0.44
Race	0.12	0.28	0.16	0.18	0.15	0.24	0.13
Household size	NS	NS	0.11	0.22	0.36	0.12	NS
Age of head of the household	0.04 [a]	NS	0.05 [a]	0.07	NS	0.10	NS
Attitudinal							
Familism	0.11	0.06	0.07	NS	NS	NS	NS
Consumerism style	0.04 [a]	NS	0.08	NS	NS	NS	NS
Social mobility commitment	0.04 [a]	NS	NS	NS	NS	NS	NS
Neighborhood contribution to social mobility	0.08	NS	NS	0.05 [a]	NS	0.10	0.13
Urban-suburban orientation	0.05 [a]	0.16	NS	NS	NS	NS	0.11
Immediately Previous Residential Character							
Tenure and dwelling unit type	0.13	0.27	NS	0.36	0.25	0.08	0.16
Previous rent	—	—	—	—	—	0.48	0.44
Value of previous place	—	—	—	—	—	—	0.42
Number of rooms	—	—	—	—	0.33	—	—
Move-Related							
Reasons for moving	0.001	0.001	NS	0.001	0.001	0.05	0.05
Type of move [b]	—	0.25	0.04 [a]	0.11	0.09	0.17	0.12
Location in the metropolitan area	—	—	0.06	0.37	0.22	0.27	0.36

[a] Significance level 0.05 only; all others, 0.01 or less.
[b] The figures in this row are significance levels for χ^2 since Kendall's τ_c is not applicable to this nominal measurement.

out-of-neighborhood moves and moves from outside the metropolitan area. Reference to Table 83 indicates that the hypotheses about income, race and previous tenure are supported but those about age and household size are not. The strongest predictor appears to be income; race and previous tenure appear next in importance. Job change as a reason for moving is strongly related to migratory moves in the metropolitan area; 90 percent of job change moves came into the metropolitan area from outside. Attitudinal characteristics appear relatively unimportant, although it is interesting to note that this is the only aspect of the outcome in which these characteristics appear to matter at all.

When controlled for race and previous tenure, as in Table 98, income retains its importance for whites and previous renters but is not significant for nonwhites and previous owners. Race loses significance for households with incomes over $4,000 (Table 99). Previous tenure loses significance as a predictor of length of move when controlled for income, but not quite as much when controlled for race (Table 100). That is, especially for nonwhite households, previous tenure is still a fairly good predictor of length of move. Familism, the strongest attitudinal predictor, loses much of its significance when controlled for income (Table 101). "Reasons for moving" retains its strength even when controlled for income and race (Table 102).

Summary of Findings on Type of Move.—This analysis suggests that income, race, and previous tenure are the most important predictors of type (length) of move. Higher-income households, white households, households who previously owned, and those moving because of a job change, are more likely to move across metropolitan boundaries. Nonwhite, low-income and rental households are the ones most likely to move within the same neighborhood. By reference to the basic tables from which the statistics were calculated, Table 84 can be created to suggest a possible three-way classification of race, income, and previous tenure for prediction of the type of a move. The percentages entered in the table serve as a practical indication of the probability of miscalculating the outcome of any single move if one were to choose on the basis of the most likely move for that type of household.

Locational Outcome: Inside or Outside the Central City

Especially for those families who move out of the neighborhood and for those who move into the metropolitan area

TABLE 83

PREDICTORS AND TYPE OF MOVE: MOVED WITHIN NEIGHBORHOOD, MOVED WITHIN METROPOLITAN AREA, MIGRATED FROM OUTSIDE METROPOLITAN AREA

| | INDICES OF ASSOCIATION | | | DIRECTIONALITY: "Moves from outside metro area more likely made by households who . . ." |
| | KENDALL'S τ_c | | | |
PREDICTOR VARIABLE	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIG-NIFICANCE LEVEL	
Social Background				
Income	0.18	0.001	0.001	Have higher income
Race	—0.12	0.001	0.001	Are white
Household size	—	NS	0.05	—
Age of head of household	—0.04	0.05	NS	—
Attitudinal				
Familism	0.11	0.001	0.001	Have low familism attitude
Consumerism style	0.04	0.05	0.05	Have low family consumerism
Social mobility commitment	—0.04	0.05	NS	Have high commitment
Neighborhood contribution to social mobility	—0.08	0.001	NS	Have low neighborhood evaluation
Urban-suburban orientation	0.05	0.05	NS	Have suburban or mixed orientation
Immediately Previous Residential Character				
Tenure and dwelling unit type	0.13	0.001	0.01	Have owned previous place
Move-Related				
Reasons for moving	Not applicable		0.001	Had job change or location-oriented move

TABLE 84

COMBINATIONS OF RACE, INCOME, AND PREVIOUS TENURE AS PREDICTORS OF TYPE OF MOVE

	PREDICTOR CLASSIFICATION SCHEME			PREDICTION: PERCENTAGE IN EACH TYPE OF MOVE			
CATEGORY NO.	RACE	INCOME	PREVIOUS TENURE	INTERNEIGH-BORHOOD	INTERMETRO-POLITAN (BUT NOT INTRA-NEIGHBOR-HOOD)	MIGRATE FROM OUTSIDE METROPOLITAN AREA	NO. OF OBSER-VATIONS PRE-DICTOR CATEGORY
1	Nonwhite	<$4,000	Any	44.8	51.0	4.2	96
2	Nonwhite	≧$4,000	Any	32.9	58.5	8.5	82
3	White	<$4,000	Rental	47.5	39.6	12.9	101
4	White	$4,000-$6,749	Rental	28.3	60.4	11.3	159
5	White	≧$6,750	Rental	16.2	67.6	16.2	148
6	White	any	Ownership	22.4	56.8	20.8	183
Total			No.	218	442	109	769
			Percentage	28.3	57.5	14.2	100.0

from the outside, it is of interest to determine where in the metropolitan area they are likely to settle—in the central city or not in the central city. Approximately 53 percent of most recent moves of the 841 households moving since 1960 located in the central city, whereas 47 percent located outside the central city.

The hypotheses strongly suggested by previous research and writing are that households of lower socio-economic status (income, education, occupation), nonwhite house-holds, the young and the old, the renters, single persons or those who place lower values on familism and social mobility, are more likely to locate in the central city than are the white, middle- and upper-income households, families with children, households of size three or more, households with familistic values and a social mobility commitment, and those who have owned (13, 46). These hypotheses are especially applicable if location outside of the central city is thought of as being primarily suburban.

The statistical results in Table 85 support all of these hypotheses with the exception of household size, age, and social mobility commitment, which have no significant rela-tion with location as measured here. Though not hypothe-sized, movers from outside the metropolitan area are more likely to locate in the suburbs.

Race, income, and previous tenure dwelling unit types are the strongest predictors of whether the move results in a central city location. Furthermore, each remains a fairly strong predictor even when controlled for length of move, and each other. (See Tables 103, 104, and 105.) Interven-ing variables are not without some effect, however. The effect of income on locational outcome tends to be less for moves from outside the metropolitan area and for non-whites. The effect of race is also reduced on moves from outside the metropolitan area; in fact, as indicated in Ta-ble 85, type of move has a significant impact on the loca-tional outcome of the move (movers from outside the metropolitan area are more likely to locate in the suburbs), which provides support for the hypothesis concerning the

effect of the "type of move" on location and dwelling unit characteristics aspects of outcome. However, reason for moving loses much of its significance when controlled for income, race, or type of move. (See Table 106).

Locational Outcome Summary. Lower income house-holds, nonwhite households, and those who previously rented are most likely to locate in the central city, es-pecially the "within neighborhood" movers, but not quite so likely if they are moving in from outside the metropoli-tan area. A classification system which combines race, income, and tenure is suggested in Table 86, together with the proportions in each category locating in the central city.

Accessibility Outcome

Given the general parameters of type of move and general location in the metropolitan area, the characteristics of specific residential selection become important to fill out the description of the move's outcome. One of the most im-portant aspects of the selection is its accessibility to activity places likely to be used by the household. This is of particular interest in locational models, especially trans-portation-oriented locational models. This section examines the effects of premove background and move-related factors on average time-distance to work, downtown, shopping center, and elementary school. These four were picked out from the list of ten for which measures were taken in the study because fewer households thought them "not applicable" and "doesn't matter" when asked if they wanted to be closer or farther next time.

Neither survey-oriented literature nor model theory-oriented literature nets sufficient nonconflicting suggestions for hypotheses concerning accessibility and the predictor variables. Hence, the results are presented as descriptive findings rather than as tests of hypotheses.

For discussion of the relative importance of accessibility in locational decisions, sometimes with respect to household characteristics, see Hamburg et al. (47) and Armiger (43).

TABLE 85

BACKGROUND CHARACTERISTICS AND LOCATION: CENTRAL CITY OR
NOT IN CENTRAL CITY

| | INDICES OF ASSOCIATION | | | DIRECTIONALITY: |
| | KENDALL'S τ_c | | | |
PREDICTOR VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIG-NIFICANCE LEVEL	Central city location mobility for house-holds who . . .
Social Background Characteristics				
Income	0.40	0.001	0.001	Have lower income
Race	—0.28	0.001	0.001	Are nonwhite
Household size	—	NS	NS	
Age of head of household	—	NS	NS	
Attitudinal				
Familism	0.06	0.01	0.05	
Consumerism style	—	NS	NS	
Social mobility commitment	—	NS	NS	
Neighborhood contribution to social mobility	—	NS	0.05	
Urban-suburban orientation	0.16	0.001	0.001	Have urban orienta-tion
Immediately Previous Residential Character				
Tenure and dwelling unit type	0.27	0.001	0.001	Were previous renters
Move Related				
Reasons for moving	Not applicable		0.001	Formed new house-hold, forced move & d.u. related com-plaints
Type of move	0.25	0.001	0.001	Moved within neighborhood

TABLE 86

COMBINATIONS OF RACE, INCOME, AND TENURE AS A PREDICTOR OF
LOCATION: CENTRAL CITY OR NOT CENTRAL CITY

| PREDICTOR CLASSIFICATION SCHEME | | | | PREDICTOR PERCENTAGE IN EACH LOCATION | | |
CAT. NO.	RACE	INCOME	TENURE	CENTRAL CITY (%)	NOT IN CENTRAL CITY (%)	NO. OF OBSER. IN PREDICTOR CATEGORY
1	Nonwhite	Any	Any	86.6	13.4	179
2	White	<$4,000	Rent-apt.	87.5	12.5	48
3	White	<$4,000	Rent-other	68.6	31.4	51
4	White	<$4,000	Ownership	48.3	51.7	21
5	White	$4,000-$6,749	Rent-apt.	61.3	38.7	62
6	White	$4,000-$6,749	Rent-other	42.3	57.6	36
7	White	$4,000-$6,749	Ownership	33.3	67.7	36
8	White	$6,750-$12,499	Rent-apt.	41.5	58.5	53
9	White	$6,750-$12,499	Rent-other	27.9	72.1	68
10	White	$6,750-$12,499	Ownership	29.1	70.9	79
11	White	$12,500 & over	Any	16.9	83.1	59
		All	No.	411	354	765
			Percentage	53.7	46.3	100.0

Most of the well-known residential allocation models place great emphasis on accessibility, but few relate it to household characteristics, previous residential experience, and attitudinal or move-related factors. However Hill (48) separates blue-collar from white-collar households, and Robinson et al. (49) classifies households by size, stage in family cycle, race, and income, but deemphasizes accessibility. The Penn-Jersey model (50) classified households by income and consumption preferences.

The more theoretical literature of residential location also stresses accessibility. Essentially based on economic theory, this body of literature suggests that the type of household which can most successfully exploit the locational attributes of a site will probably occupy it. Wingo (51), Alonso (52), and Richards (53) also suggest that household characteristics which affect preferences for space, accessibility, and amenities, and/or which affect relative disutility of the friction of space and/or which affect their rent paying ability will influence the allocation of households in space. But this body of literature does not relate preferences, disutilities and rent paying abilities to the household characteristics used as predictors in this study.

Table 87 gives the statistical relations of background variables to the accessibility index. The strongest predictor is race—white households are consistently higher (in time) to work, shopping center, downtown, and elementary school. This is partly due to higher rate of car ownership among whites. Table 88 gives the percentages of whites and nonwhites in each of three time-distance intervals.

Even race is not as strong as it is for other aspects of the outcome of the move, and all other predictors are relatively weak. It can be concluded that location, in terms of accessibility to the residence to various commonly used destinations of households, is less predictable than other aspects of the residential selection.

The implication of these relatively negative findings is that, at least for the time-distance measure of accessibility as estimated by households, there are no substantial differences between high-income and low-income households, between central city and suburban residents, between those who stress familism and other values and those who do not. The only difference is between nonwhite and white households, where white households tend to be on the average a little closer to work, shopping center, downtown, and schools.

Dwelling Unit Outcome

Having examined type of move, location, and accessibility,

TABLE 87

BACKGROUND CHARACTERISTICS AND THE AVERAGE OF TIME DISTANCE TO WORK, DOWNTOWN, SHOPPING CENTER, AND ELEMENTARY SCHOOL

| | INDICES OF ASSOCIATION | | | DIRECTIONALITY: More accessible locations tend to be chosen by households who . . . |
| | KENDALL'S τ_c | | χ^2 SIG-NIFICANCE LEVEL | |
PREDICTOR VARIABLES	INDEX	SIGNIFI-CANCE LEVEL		
Social Background				
Income	0.05	0.05	NS	—
Race	0.16	0.001	0.001	Are white
Household size	0.11	0.001	0.05	Are smaller in number
Age of head of the household	—0.05	0.05	0.01	Are older
Attitudinal				
Familism	0.07	0.01	NS	
Consumerism style	—0.08	0.001	0.05	Have low family orientation to their consumption
Social mobility commitment	—	NS	NS	
Neighborhood contribution to social mobility	—	NS	0.05	
Urban-suburban orientation	—	NS	NS	
Immediately Previous Residential Character				
Tenure and dwelling unit type	—	NS	NS	
Move-Related				
Reasons for moving	—	—	NS	
Type of move	—0.04	0.05	NS	
Location in the metropolitan area	0.06	0.01	NS	

four specific characteristics of the dwelling unit itself remain to be analyzed. These include:

1. Tenure (rental or ownership).
2. Type of dwelling unit (single family, apartment, other).
3. Size of dwelling unit (number of rooms).
4. Cost of dwelling unit (monthly rent if rental tenure or value of dwelling unit if ownership tenure).

Housing choice studies usually show that these four include the most critical motivating factors in housing decisions. One problem faced in obtaining hypotheses from these studies is that household types are seldom distinguished in their analyses. Furthermore, these aspects are measured as decision factors rather than as actual outcomes. Thus, with regard to the following hypotheses, intuition and indirect implications of past research are drawn upon rather than conclusions of the past analyses of a type similar to those undertaken in this study. See Lansing et al. (*45*), Armiger (*43*), especially appendix D, Foote et al. (*41*), especially Chapter 8, and Rossi (*8*).

In addition to their importance in the household's decision making, dwelling unit characteristics are of primary importance to the policy maker and the model builder. Even those especially interested in the locational aspects of residential modeling need to know the role that dwelling unit characteristics play, because tenure, dwelling unit type, size, and cost are usually inseparable from neighborhood character. And neighborhood types can be spatially determined and located in space.

Tenure-Dwelling Unit Type.—Tenure (rental or ownership) and dwelling unit type (single-family detached house, apartment, or other) tend to be so closely related that they have been combined into a single variable with the four categories given in Table 89. Together, tenure and dwelling unit type describe what may be the most important aspects of housing choice—"ownership" and "a single-family detached house."

On the basis of past studies on moving behavior and residential preferences it would be expected that rental-apartment tenure would be more likely for households of lower income, one- and two-person households, younger persons, nonwhite households, households who previously rented rather than owned, and households that were less committed to social mobility and familism values (*13, 29, 45, 55*). It would also be expected that central city locatees and moves from outside the metropolitan area would more likely be in the rental tenure category.

As can be seen from Table 90, these hypotheses are confirmed with the exception of the attitudinal variables. Previous residential tenure and whether the location is central city appears to have stronger effect on tenure-dwelling unit type than social background characteristics, although income, race and household size are also very strong.

When effects of other variables are controlled for, previous tenure and reason for moving hold up the best, followed by income and race. Household size holds up least well. (See Tables 107 through 111). The influence of race and income is significantly affected by previous ownership tenure. Race and household size are both substantially reduced by income in their effect on tenure-dwelling unit type.

In summary, the findings suggest that previous tenure and income are the best predictors of tenure-dwelling unit type, with race fairly strong also. A composite classification based on income and previous tenure is suggested in Table 91, with the observed percentages given for each household type in each of the four categories of tenure-dwelling type.

Number of Rooms and Number of Bedrooms.—The size of a residence is an important indication of its livability, as well as a significant factor in both the household's decision to move and its selection of the new place (*8, 45, 54*). The total number of rooms and the number of bedrooms are two convenient ways to measure size, although they are certainly not the only ways. Preliminary analyses showed these two indicators so highly correlated and their relationship with background variables so alike that only total number of rooms is examined here. Thus, it is assumed that basically the same relationships hold for number of bedrooms as for number of rooms.

Past studies suggest that larger places will more likely be selected by households of higher income, larger households, older households, white households, and households that

TABLE 88

RACE AND ACCESSIBILITY: PERCENTAGES OF WHITES AND NONWHITES IN EACH OF THREE TIME DISTANCE CATEGORIES

| RACE | AVERAGE TIME DISTANCE TO DOWNTOWN, SHOPPING CENTER, ELEMENTARY SCHOOL, AND PLACE OF WORK | | | NO. OF OBSERVATIONS IN EA. PREDICTOR CATEGORY |
	1-5 MIN	6-15 MIN	16 MIN OR MORE	
White	7.3	62.8	30.0	647
Nonwhite	1.8	46.3	51.8	164

$\chi^2 = 30.3$ with 2 df; significance level <0.001.
Kendall's $\tau_c = .16$; significance level <0.001.

TABLE 89

COMPOSITE TENURE-DWELLING UNIT TYPE VARIABLE

TENURE	DWELLING UNIT TYPE	HOUSEHOLDS WHO HAVE MOVED SINCE 1960 (%)
Ownership	Single family	42.1
Rental	Single family	16.5
Rental	Apartment	20.7
Rental	Other (trailer, room, duplex, etc.)	20.8

TABLE 90

BACKGROUND CHARACTERISTICS AND TENURE-DWELLING UNIT TYPE

| | INDICES OF ASSOCIATION | | | DIRECTIONALITY: |
| | KENDALL'S τ_c | | | Ownership more |
PREDICTOR VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIG-NIFICANCE LEVEL	likely selected by households who . . .
Social Background				
Income	0.31	0.001	0.001	Have higher income
Race	—0.18	0.001	0.001	Are white
Household size	0.22	0.001	0.001	Have more persons
Age of head of the household	0.07	0.001	0.001	Are age 35-60
Attitudinal				
Familism	—	NS	NS	
Consumerism style	—	NS	NS	
Social mobility commitment	—	NS	NS	
Neighborhood contribution to social mobility	0.05	0.05	0.01	
Urban-suburban orientation	—	NS	NS	
Immediately Previous Residential Character				
Tenure	0.36	0.001	0.001	Owned previous place
Move-Related				
Reasons for moving	Not applicable		0.001	Wanted to own
Type of move	0.11	0.001	0.001	Did not move within the same neighborhood
Location in the metropolitan area	0.37	0.001	0.001	Moved outside the central city

TABLE 91

COMBINATIONS OF INCOME AND PREVIOUS TENURE-DWELLING UNIT TYPE AS PREDICTORS OF TENURE-DWELLING UNIT TYPE

| COMPOSITE PREDICTION CLASSIFICATION | | PREDICTION PROPORTION IN EACH TENURE-DWELLING UNIT TYPE | | | | |
| | | RENT | | | OWN | NO. OF OBSERVA-TIONS IN CATEGORY |
INCOME	PREVIOUS TENURE-DWELLING UNIT TYPE	OTHER	APT.	SINGLE FAMILY	SINGLE FAMILY	
1. $4,000		36.1	46.7	11.5	5.7	122
2. $4,000-$6,749	Rent-other than single family	27.9	26.5	21.3	24.3	136
3. $6,750 & Over		25.7	13.9	9.9	50.5	101
4. $4,000	Rent-single family	23.4	19.1	40.4	17.0	47
5. $4,000		12.4	3.5	26.5	57.5	113
6. $4,000	Own-single family	10.7	21.4	10.7	57.1	28
7. $4,000		3.8	4.6	7.7	83.8	130
All	Number	141	140	112	284	677
	Percentage	20.8	20.7	16.5	42.0	100.0

owned previously. Armiger (*43*), Steffens (*44*), and Rossi (*8*), all suggest that previous renters are more sensitive to size considerations than are previous owners, although they suggest the reason may be that previous owners may be able to meet their size specifications more easily and are simply concentrating on other features. As given in Table 92, the hypotheses are supported by the data with exception of age. Income, household size, previous number of rooms, and previous tenure are the strongest predictors.

Household size remains strong, even when controlled for other variables with the exception of family type, which is very closely related to household size. (See Table 112.) Household size appears strong for both white and nonwhite and for all but the highest income groups. It is especially significant for those selecting rental tenure; the tables suggest that home ownership tends to include a fairly high minimum number of rooms regardless of family size.

In summary, tenure, income, and household size appear to be a good combination with which to predict number of rooms, since the effect of each one on number of rooms is relatively independent of the other. A multiple regression analysis utilizing income and household size explains 57 percent of the variation in number of rooms. Table 93 indicates the ability of the combination of tenure, income, and household size to predict the number of rooms in the new residence.

Housing Costs.—A relationship of predictor variables to housing costs would aid in anticipating the distribution of household types to various housing levels. The hypothesis is that higher-income households and households paying higher costs in the previous place will select the higher valued new place. Lesser hypotheses are that larger households will pay more because they tend to require more rooms and that households with social mobility commitments, especially those believing that social mobility depends on one's neighborhood, will pay more for housing.

Since rental costs and ownership costs are difficult to compare or to transform into a single index, the following analysis is in two parts, one for rental tenure and one for ownership tenure.

Costs for Rental Tenure.—The hypotheses are supported, as can be seen from Table 94. The strongest premove background predictor variables for anticipating the rent level of the residential selection are income and the housing costs level of the immediately previous place—either rental or ownership tenure. Income and previous rent remain significant when controlled for race, location, and type of move, and for each other. Income appears slightly

TABLE 92

BACKGROUND CHARACTERISTICS AND NUMBER OF ROOMS

| | INDICES OF ASSOCIATION | | | DIRECTIONALITY: Larger places are more likely to be chosen by households who . . . |
| | KENDALL'S τ_c | | χ^2 SIG-NIFICANCE LEVEL | |
PREDICTOR VARIABLES	INDEX	SIGNIFI-CANCE LEVEL		
Social Background				
Income	0.36	0.001	0.001	Have higher income
Race	0.15	0.001	0.001	Are white
Household size	0.36	0.001	0.001	Have more persons
Age of head of the household	—	NS	0.001	
Attitudinal				
Familism	—	NS	NS	
Consumerism style	—	NS	NS	
Social mobility commitment	—	NS	NS	
Neighborhood contribution to social mobility	—	NS	NS	
Urban-suburban orientation	—	NS	NS	
Immediately Previous Residential Character				
Tenure	0.25	0.001	0.001	Owned previous place
Move-Related				
Reasons for moving	NA	NA	0.001	Had job change or wanted to own or live in s.f. unit
Type of move	0.09	0.001	0.01	Migrated from out-side to metro-area
Location in the metropolitan area	0.22	0.001	0.001	Located outside of the central city

TABLE 93

COMPOSITE CLASSIFICATION OF INCOME, HOUSEHOLD SIZE AND TENURE AS PREDICTORS OF NUMBER OF ROOMS IN THE HOUSING UNIT

COMPOSITE PREDICTOR CLASSIFICATION			PREDICTION: PROPORTION IN EACH SIZE CATEGORY			
			NO. OF ROOMS			
TENURE	INCOME	SIZE	3 OR LESS (%)	4 OR 5 (%)	6 OR MORE (%)	NO. OF OB-SERV. IN PRE-DICTOR CAT.
1. Rental	<$6,750	1-2	52.8	42.4	4.8	125
2. Rental	<$6,750	3-4	7.8	63.1	29.1	141
3. Rental	<$6,750	5+	8.3	44.8	46.9	96
4. Rental	$6,750+	1-2	18.2	40.0	41.8	55
5. Rental	$6,750+	3-4	4.0	42.7	53.3	75
6. Rental	$6,750+	5+	0	34.1	65.9	44
7. Ownership	Any	1-2	15.5	43.1	41.4	58
8. Ownership	Any	3-4	5.4	36.5	58.1	74
9. Ownership	Any	5+	4.5	9.0	86.6	67
All		Number	121	323	291	735
		Percentage	16.5	43.9	39.6	100.0

TABLE 94

PREDICTOR CHARACTERISTICS AND MONTHLY RENTAL

	INDICES OF ASSOCIATION			
	KENDALL'S τ_c			DIRECTIONALITY:
PREDICTOR VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIG-NIFICANCE LEVEL	Higher rent more likely for households who . . .
Social Background				
Income	0.45	0.001	0.001	Have higher income
Race	0.24	0.001	0.001	Are white
Household size	0.12	0.001	NS	Are larger
Age of head of the household	—0.10	0.001	0.01	Are younger
Attitudinal				
Familism	—	NS	NS	
Consumerism style	—	NS	NS	
Social mobility commitment	—	NS	NS	
Neighborhood contribution to social mobility	—0.10	0.01	0.01	Low dependence on neighborhood for social mobility
Urban-suburban orientation	—	NS	NS	
Immediately Previous Residential Character				
Tenure	0.08	0.05	0.01	
Move-Related Factors				
Reasons for moving	Not applicable		0.05	Owned previous place
Type of move	0.17	0.001	0.01	Made longer moves
Location in the metropolitan area	0.27	0.001	0.001	Moved outside the central city

more affected by these controls than is previous rent. Race is surprisingly strong as a predictor, even when controlled for income. Nonwhites pay less than whites. Table 95 combines income and previous rent as predictors of rent level of the new place.

Value of Selected Unit for Ownership Tenure.—Again the hypotheses are supported and again, as expected, income and previous level of housing costs are the strongest predictors of value level of the selected residence. The higher the income and the higher the previous housing costs, the higher the probable value of the new dwelling unit. (See Table 96.) These relationships, furthermore, hold even when controlled for other variables; i.e., they hold for long and short moves, central city and suburb. Furthermore, within any income group but the lowest, previous rent values still relate strongly to present value, and within any previous value level, income still relates strongly to the value of the new residence. Again race is a factor; nonwhites pay less; but this time the effect is largely eliminated by controlling for income. Table 97 combines previous tenure, level of rent, and income as predictors of value of the new place for those selecting ownership tenure.

SUMMARY AND CONCLUSIONS

In this section the relationships revealed in the preceding analysis are summarized and interpreted. Generally, the hypotheses regarding the effect of predictor variables have been supported by the data. The most consistent of the household variables are income and race. Lower-income households and nonwhites tend, more than others, to move shorter distances, locate in the central city, rent apartments, have fewers rooms, pay lower rent, or own cheaper houses. These are all as expected.

The poorest household characteristics for predicting the outcome of the move are age of head of household and the attitudinal indices of the familism, consumerism style,

urban vs suburban orientation, social mobility commitment, and even a household's attitude about the importance of one's neighborhood for social mobility. This negative finding suggests that it is conceptually and operationally useful to maintain the conceptual dichotomy between the decision to move and residential choice in dealing with residential mobility. While age and the attitudinal variables provide excellent explanation of "why families move" they cannot as adequately explain "where and what families move to."

On the other hand, it is still useful to think of the "decision to move" and the "choice of the new place" as related, even if not as two sides of the same coin. Residential experience, especially tenure, has been shown to be a consistently good predictor. Not only are renters much more likely than owners to move, as discussed in the previous chapter, but they are also more likely to move shorter distances, to locations in the central city, to rent again, a smaller place, probably an apartment, and to pay lower rents, or buy lower-value homes. Other residential experience and household size were also good predictors for certain aspects of the dwelling unit; larger households and those who previously lived in larger places are more likely to move to larger places. Those who paid higher rent previously or owned more expensive places are more likely than their opposites to do so again. And those who rent are more likely to rent again than are the owners.

The most puzzling aspect of outcome, the one least well explained by any predictor, has been accessibility of the new place, at least the respondent's assessment of accessibility in time-distance. The rich do not appear to differ from the poor, central city residents from suburbanites, renters from owners, or long-distance movers from short-distance movers, although whites appear to have better accessibility than nonwhites.

The data have supported the notion that some of the first-order aspects of the move affect lower-order aspects. Type of move affects the probability of locating in the

TABLE 95

COMBINATIONS OF INCOME AND PREVIOUS RENT AS PREDICTORS OF RENT LEVEL OF NEW PLACE

COMPOSITE PREDICTOR CLASSIFICATION		PREDICTION: PROPORTION IN EACH RENT LEVEL FOR NEW PLACE				
INCOME	PREVIOUS RENT	UNDER $50	$50-$79	$80-$109	$110 AND OVER	NO. OF OB-SERVS. IN CATEGORY
<$4,000	<$50	60.3	34.5	5.2	0	58
	$50-79	24.6	55.7	18.0	1.6	61
	$80+	11.4	40.0	34.3	14.3	35
$4,000-6,749	<$50	20.0	53.3	16.7	10.0	30
	$50-79	5.9	60.8	31.4	2.0	51
	$80+	2.1	17.0	51.1	30.0	47
$6,750+	Any previous rent	2.0	23.0	28.0	47.0	100
All	Number	66	146	99	71	382
	Percentage	17.3	38.2	25.9	18.6	100.0

TABLE 96

BACKGROUND CHARACTERISTICS AND VALUE OF THE DWELLING UNIT

| | INDICES OF ASSOCIATION | | | DIRECTIONALITY: High valued housing unit more likely for households who . . . |
| | KENDALL'S τ_c | | χ^2 SIG- NIFICANCE LEVEL | |
PREDICTOR VARIABLES	INDEX	SIGNIFI- CANCE LEVEL		
Social Background				
Income	0.43	0.001	0.001	Have higher income
Race	—0.13	0.001	0.001	Are white
Household size	—	NS	NS	
Age of head of the household	—	NS	0.05	
Attitudinal				
Familism	—	NS	NS	
Consumerism style	—	NS	NS	
Social mobility commitment	—	NS	NS	
Neighborhood contribution to social mobility	0.13	0.001	NS	
Urban-suburban orientation	0.11	0.001	0.05	Have suburban or mixed orientation
Immediately Previous Residential Character				
Tenure	0.16	0.001	NS	Owned previous place
Move-Related Factors				
Reasons for moving	NA	NA	0.05	
Type of move	0.12	0.001	NS	Migrated
Location in the metropolitan area	0.36	0.001	0.001	Moved outside the central city

TABLE 97

COMBINATIONS OF LEVEL OF RENT AND INCOME AS PREDICTORS OF VALUE OF THE NEW PLACE

| COMPOSITE PREDICTOR CLASSIFICATION | | | PREDICTION: PROPORTION IN EACH VALUE CATEGORY | | | | NO. OF OBSERVS. IN PREDICTOR CATEGORY |
TENURE	RENT OR DWELLING UNIT LEVEL	INCOME	UNDER $10,000	$10,000-14,999	$15,000-19,999	$20,000 & OVER	
Rental	<$50	<$6,750	50.0	27.8	11.1	11.1	18
Rental	≧$50	<$6,750	36.5	30.2	28.6	4.8	67
Rental	<$110	≧$6,750	17.2	42.2	15.6	25.0	64
Rental	≧$110	≧$6,750	0	2.9	37.1	60.0	35
Ownership	<$10,000	<$6,750	55.0	20.0	20.0	5.0	40
Ownership	≧$10,000	<$6,750	9.1	27.3	22.7	40.9	22
Ownership	<$10,000	≧$6,750	15.4	26.9	42.3	15.4	26
Ownership	$10,000-14,999	≧$6,750	6.1	27.3	33.3	33.3	33
Ownership	≧$15,000	≧$6,750	0	5.1	23.1	71.8	39
	All	Number	73	84	87	96	340
		Percentage	21.5	24.7	25.6	28.2	100.0

central city; shorter moves are more likely to do so than longer ones. Both type of move and location, especially location, have a strong effect on the tenure-dwelling unit type (size and cost) of the dwelling unit. Families who make shorter moves and who move to central city locations are more likely to rent apartments, live in smaller dwelling units, and pay less rent or own lower value units (independent of the household characteristics.)

Several implications for modeling may be ventured. First, it is relevant to include in residential allocation models the kinds of outcome here analyzed. Central city vs suburban location is directly useful; type of move will help determine population to be allocated; and dwelling unit characteristics will help determine the neighborhoods which receive the moving population. Furthermore, an output of spatial distribution of population should be more useful for subsequent policy decision if distinguished by household characteristics. For example, distribution that includes

household characteristics should help anticipate traffic generation more precisely to the extent that these same household characteristics are related to trip making. Also, it would appear that such a model would provide useful information about housing supply vacated, as well as new allocations, particularly if residential experience is used as a predictor in the allocation. Particularly, also, if a mobility model simulating the decision to move precedes the allocation model and generates the number and source location of each household type to move. However, it should be remembered that "predictions" as used in this chapter refer to the usefulness of variables to explain observed behavior. A major question for model design is whether such variables as race will have the same relation to residential choice as they now do.

Tables 98 through 120 are appended to this chapter as a group for general reference purposes. Only tables 103 through 112 are specifically referred to in the text.

TABLE 98

INCOME AND TYPE OF MOVE: CONTROLLED FOR RACE AND PREVIOUS TENURE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Race:			
White	0.15	0.001	0.001
Nonwhite	0.12	0.01	NS
Previous tenure:			
Rental	0.20	0.001	0.001
Ownership	0.11	0.01	NS
Uncontrolled	0.18	0.001	0.001

TABLE 99

RACE AND TYPE OF MOVE: CONTROLLED FOR INCOME

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.10	0.01	0.01
$4,000-$6,749	—	NS	NS
$6,750 and above	—0.07	0.05	NS
Uncontrolled	—0.12	0.001	0.001

TABLE 100

PREVIOUS TENURE-HOUSING UNIT TYPE AND TYPE OF MOVE: CONTROLLED FOR INCOME AND RACE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.11	0.05	NS
$4,000-$6,749	0.08	0.05	NS
$6,750 and above	0.12	0.01	NS
Race:			
White	0.10	0.001	NS
Nonwhite	0.16	0.001	0.01
Previous tenure-dwelling unit type uncontrolled:	0.13	0.001	0.01

TABLE 101

FAMILISM AND TYPE OF MOVE: CONTROLLED FOR INCOME

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $6,750	0.08	0.05	0.05
$6,750 and above	0.11	0.001	0.05

TABLE 102

REASON FOR MOVING AND TYPE OF MOVE: CONTROLLED FOR INCOME AND RACE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | χ^2 |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	NA	NA	0.001
$4,000–$6,749	NA	NA	0.001
$6,750 and above	NA	NA	0.001
Race:			
White	NA	NA	0.001
Nonwhite	NA	NA	0.001
Uncontrolled	NA	NA	0.001

TABLE 103

INCOME AND CENTRAL CITY OR NONCENTRAL CITY LOCATION: CONTROLLED FOR RACE, PREVIOUS TENURE, AND TYPE OF MOVE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | χ^2 |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Race:			
White	0.28	0.001	0.001
Nonwhite	—	NS	NS
Previous tenure-dwelling unit type:			
Rental—apartment	0.41	0.001	0.001
Rental—two-family	0.46	0.001	0.001
Rental—single-family	0.35	0.001	0.001
Ownership—single-family	0.29	0.001	0.001
Type of move:			
Within neighborhood	0.28	0.001	0.001
Within metropolitan area	0.40	0.001	0.001
Migrate from outside metropolitan area	0.24	0.001	NS
Uncontrolled	0.40	0.001	0.001

TABLE 104

RACE AND CENTRAL CITY OR NONCENTRAL CITY LOCATION: CONTROLLED FOR INCOME, PREVIOUS TENURE, TYPE OF MOVE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | χ^2 |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	—0.21	0.001	0.001
$4,000–$6,749	—0.20	0.001	0.001
$6,750 and above	—0.35	0.001	0.001
Previous tenure-dwelling unit type:			
Rental—apartment	—0.24	0.001	0.001
Rental—two-family	—0.35	0.001	0.001
Rental—single-family	—0.25	0.001	0.001
Ownership—single-family	—0.13	0.001	0.001
Type of move:			
Within neighborhood	—0.22	0.001	0.001
With metropolitan area	—0.31	0.001	0.001
Migrate from outside metropolitan area	—0.15	0.001	0.01
Uncontrolled	0.28	0.001	0.001

TABLE 105

PREVIOUS TENURE-DWELLING UNIT TYPE VS CENTRAL CITY OR NONCENTRAL CITY LOCATION: CONTROLLED FOR INCOME, RACE AND TYPE OF MOVE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | χ^2 |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.22	0.001	0.01
$4,000–$6,749	0.27	0.001	0.01
$6,750 and above	0.17	0.001	0.05
Race:			
White	0.24	0.001	0.001
Nonwhite	0.14	0.01	NS
Type of move:			
Within neighborhood	0.28	0.001	0.001
Within metropolitan area	0.18	0.001	0.05
Migrate from outside metropolitan area	0.42	0.001	0.001
Uncontrolled	0.27	0.001	0.001

TABLE 106

REASONS FOR MOVING AND LOCATION: CONTROLLED FOR INCOME, RACE AND TYPE OF MOVE

| CONTROL VARIABLES | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	NA	NA	NS
$4,000-$6,749	NA	NA	NS
$6,750 and above	NA	NA	0.01
Race:			
White	NA	NA	0.001
Nonwhite	NA	NA	NS
Type of move:			
Intraneighborhood	NA	NA	NS
Intrametropolitan	NA	NA	0.01
Intermetropolitan	NA	NA	NS
Uncontrolled	NA	NA	0.001

TABLE 107

RACE AND TENURE-DWELLING UNIT TYPE: CONTROLLED FOR INCOME, PREVIOUS TENURE-DWELLING UNIT TYPE

| CONTROL VARIABLES | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	—0.08	0.05	0.01
$4,000-$6,749	—	NS	0.01
$6,650 and above	—0.16	0.001	0.01
Previous tenure-dwelling unit type:			
Rent—apartment	—0.11	0.01	0.01
Rent—two-family	—0.24	0.01	0.01
Rent—single-family	—0.18	0.001	0.01
Ownership—single-family	—	NS	NS
Uncontrolled	—0.18	0.001	0.01

TABLE 108

INCOME AND TENURE-HOUSING UNIT TYPE: CONTROLLED FOR RACE, PREVIOUS TENURE-HOUSING UNIT TYPE, TYPE OF MOVE, LOCATION

| CONTROL VARIABLES | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Race:			
White	0.29	0.001	0.001
Nonwhite	0.15	0.01	0.05
Previous tenure-dwelling unit type:			
Rent—apartment	0.20	0.001	0.001
Rent—two-family	0.34	0.001	0.01
Rent—single-family	0.30	0.001	0.001
Ownership—single-family	0.10	0.05	0.05
Type of move:			
Within neighborhood	0.28	0.001	0.001
Within metropolitan area	0.31	0.001	0.001
Migrate from outside metropolitan area	0.23	0.001	NS
Location:			
Central city	0.22	0.001	0.001
Outside central city	0.20	0.001	0.001
Income uncontrolled	0.31	0.001	0.001

TABLE 109

PREVIOUS TENURE-DWELLING UNIT TYPE AND PRESENT TENURE-DWELLING UNIT TYPE: CONTROLLED FOR INCOME, RACE, TYPE OF MOVE, AND LOCATION

| CONTROL VARIABLES | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.29	0.001	0.001
$4,000-$6,749	0.39	0.001	0.001
$6,750 and above	0.25	0.001	0.001
Race:			
White	0.35	0.001	0.001
Nonwhite	0.26	0.001	0.001
Type of move:			
Within neighborhood	0.47	0.001	0.001
Within metropolitan area	0.28	0.001	0.001
Migrate from outside metropolitan area	0.34	0.001	0.05
Location:			
Central city	0.31	0.001	0.001
Outside central city	0.25	0.001	0.001
Previous tenure-dwelling unit type uncontrolled	0.36	0.001	0.001

TABLE 110

HOUSEHOLD SIZE AND TENURE-DWELLING UNIT TYPE CONTROLLED FOR INCOME, AGE OF HEAD OF HOUSEHOLD

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.14	0.01	NS
$4,000-$6,749	0.17	0.001	NS
$6,750 and above	0.17	0.001	0.001
Age of head:			
≤35	0.19	0.001	0.001
>35	0.26	0.001	0.001
Household size uncontrolled	0.22	0.001	0.001

TABLE 111

REASON FOR MOVE AND TENURE-DWELLING UNIT TYPE CONTROLLED FOR INCOME AND RACE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	NA	NA	0.001
$4,000-$6,749	NA	NA	0.001
$6,750 and above	NA	NA	0.001
Race:			
White	NA	NA	0.001
Nonwhite	NA	NA	0.001
Type of move:			
Intraneighborhood	NA	NA	0.001
Intrametropolitan	NA	NA	0.001
Intermetropolitan	NA	NA	NS
Location:			
Central city	NA	NA	0.001
Noncentral city	NA	NA	0.001
Uncontrolled	NA	NA	0.001

TABLE 112

HOUSEHOLD SIZE AND NUMBER OF ROOMS: CONTROLLED FOR FAMILY TYPE, INCOME, RACE, AND TENURE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Family type:			
Full family I	—	NS	NS
Full family II	0.21	0.001	0.001
Extended family	0.18	0.01	NS
Income:			
Under $4,000	0.39	0.001	0.001
$4,000-$6,749	0.34	0.001	0.001
$6,750 and under	0.21	0.001	0.001
Race:			
White	0.38	0.001	0.001
Nonwhite	0.38	0.001	0.001
Present tenure:			
Own	0.18	0.001	0.01
Rent	0.46	0.001	0.001
Uncontrolled	0.36	0.001	0.001

TABLE 113

REASON FOR MOVE AND NUMBER OF ROOMS: CONTROLLED FOR INCOME AND RACE

| | INDICES OF ASSOCIATION | | |
| | KENDALL'S τ_c | | |
CONTROL VARIABLES	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	NA	NA	0.001
$4,000-$6,749	NA	NA	NS
$6,750 and above	NA	NA	NS
Race:			
White	NA	NA	0.001
Nonwhite	NA	NA	0.01
Type of move:			
Intraneighborhood	NA	NA	0.01
Intrametropolitan	NA	NA	NS
Intermetropolitan	NA	NA	NS
Location:			
Central city	NA	NA	0.001
Noncentral city	NA	NA	0.001
Uncontrolled	NA	NA	0.001

TABLE 114

PREVIOUS RENT LEVEL AND PRESENT RENT
LEVEL: CONTROLLED FOR INCOME, TYPE OF
MOVE, AND PRESENT LOCATION

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.40	0.001	0.001
$4,000-$6,749	0.39	0.001	0.001
$6,750 and above	0.38	0.001	0.001
Type of move:			
Within neighborhood	0.62	0.001	0.001
Within metropolitan area	0.37	0.001	0.001
Migrate from outside metropolitan area	0.33	0.01	NS
Location:			
Central city	0.44	0.001	0.001
Outside of central city	0.53	0.001	0.001
Uncontrolled	0.48	0.001	0.001

TABLE 115

INCOME AND RENTAL: CONTROLLED FOR RACE,
PREVIOUS RENT, CENTRAL CITY VS NONCENTRAL
CITY LOCATION, AND TYPE OF MOVE

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Race:			
White	0.44	0.001	0.001
Nonwhite	0.36	0.001	0.001
Previous rental level:			
Under $50/month	0.31	0.001	0.001
$50-$79/month	0.23	0.001	0.05
$80-$109/month	0.44	0.001	0.001
$110+/month and over	0.31	0.01	NS
Location:			
Central city	0.33	0.001	0.001
Outside central city	0.46	0.001	0.001
Type of move:			
Within neighborhood	0.34	0.001	0.001
Within metropolitan area	0.37	0.001	0.001
Migrate from outside metropolitan area	0.59	0.001	0.001
Uncontrolled	0.44	0.001	0.001

TABLE 116

RACE AND RENTAL LEVEL: CONTROLLED
FOR INCOME

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	—0.20	0.001	0.001
$4,000-$6,749	—	NS	NS
$6,750 and above	—0.15	0.05	0.01
Uncontrolled	0.24	0.001	0.001

TABLE 117

PREVIOUS RENT AND VALUE OF PRESENT
DWELLING UNIT: CONTROLLED FOR INCOME,
TYPE OF MOVE, AND LOCATION

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		
	INDEX	SIGNIFI-CANCE LEVEL	χ^2 SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	—	NS	NS
$4,000-$6,749	0.17	0.05	NS
$6,750 and above	0.44	0.001	0.001
Type of move:			
Within neighborhood	0.62	0.001	0.001
Within metropolitan area	0.40	0.001	0.001
Migrate from outside metropolitan area	0.40	0.01	NS
Location:			
Central city	0.45	0.001	0.001
Outside of central city	0.40	0.001	0.001
Uncontrolled	0.44	0.001	0.001

TABLE 118

INCOME AND VALUE OF PRESENT PLACE:
CONTROLLED FOR RACE, CENTRAL CITY VS
NONCENTRAL CITY, AND TYPE OF MOVE

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		χ^2
	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Race:			
White	0.39	0.001	0.001
Nonwhite	0.30	0.01	NS
Type of move:			
Within neighborhood	0.44	0.001	0.001
Within metropolitan area	0.36	0.001	0.001
Migration from outside metropolitan area	0.60	0.001	0.001
Location:			
Central city	0.39	0.001	0.001
Outside of central city	0.40	0.001	0.001
Uncontrolled	0.43	0.001	0.001

TABLE 119

VALUE OF PREVIOUS DWELLING UNIT AND
VALUE OF PRESENT DWELLING UNIT:
CONTROLLED FOR INCOME, LENGTH OF MOVE,
AND LOCATION WITHIN METROPOLITAN AREA

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		χ^2
	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	0.30	0.05	NS
$4,000-$6,749	0.42	0.001	NS
$6,750 and above	0.42	0.001	0.001
Type of move:			
Within neighborhood	0.65	0.001	0.001
Within metropolitan area	0.35	0.001	0.01
Migrate from outside metropolitan area	0.41	0.01	NS
Location:			
Central city	0.53	0.001	0.001
Outside of central city	0.42	0.001	0.001
Uncontrolled	0.42	0.001	0.001

TABLE 120

RACE AND VALUE OF DWELLING UNIT

CONTROL VARIABLES	INDICES OF ASSOCIATION		
	KENDALL'S τ_c		χ^2
	INDEX	SIGNIFI-CANCE LEVEL	SIGNIFI-CANCE LEVEL
Income:			
Under $4,000	—	NS	NS
$4,000-$6,749	—	NS	NS
$6,750 and above	—0.09	0.05	0.05
Uncontrolled	—0.13	0.001	0.001

CHAPTER SIX

FINDINGS—A SYSTEM OF MODELING URBAN MOBILITY AND RESIDENTIAL CHOICE

Analysis of residential mobility and choice is of interest to the transportation planner primarily as it helps him in his task of preparing and testing plans and programs for transportation facilities. Since upwards of 80 percent of all trips begin or end on residential land, it is important that the planner know as much as he can about the travel

behavior, moving habits, and choice of dwelling and home environment of households. Increased concern for, and better knowledge of, the relation between land use and transportation are vital to the development of metropolitan planning practice, particularly as a source of information for estimating future travel or transportation facility systems.

The interaction between land use and transportation has been intensively explored in the past decade. From the land use perspective, the concern has been with understanding the relationship between the land use pattern, or, more generally, the urban activity pattern and travel behavior. Within the context of trip generation and trip distribution analysis, it is recognized that there is relationship between the pattern and intensity of land use and population density patterns and the quality of transportation service provided by a specific system of transportation facilities. From this perspective, the planner is primarily concerned with designing a transportation system which adequately serves travel demand. This simplified description, of course, fails to illustrate the complexity of the task. First, it assumes that the transportation planner can estimate with some confidence the pattern and intensity of land use and activity at the future date for which the planning is targeted. Second, it does not explicitly recognize that the length and direction of trips, and perhaps the number of trips generated in a given land use/activity pattern, may be influenced by the transportation system provided. Finally, the description given begs the question of what is adequate service of travel demand.

From the transportation perspective, concern has been with understanding the relationship between the transportation facility system and the land development process. It is recognized that the direction, pattern, and intensity of land development is responsive to the availability of transportation. That is, transportation facilities have an important influence on the land use pattern, and, to come full circle, on travel demand. Again, this is a simplified description and fails to illustrate fully the complexities of the development process and the difficulties of the planner's task.

These reciprocal relationships between land use and travel, and transportation facilities and land use, have been the focus of attempts at modeling both land development and travel. The requirements of a model of land development in this schema are that it be responsive to the amount, location, and quality of transportation service in the urban area, as well as other factors influencing land development. Also, that it provide adequate information for the estimation of travel demand. Residential land is of major importance, for the obvious reasons that it comprises a very large portion of all land use in the urban area; a very large portion of all trips made in an area either begin or end at residential land; and the location of new residential development is expected to be responsive to differences in accessibility resulting from the location of transportation facilities.

Shifting the focus slightly, it is possible to recognize at least two general purposes of a model of land use and/or residential location. One of these is prediction. To plan effectively for future transportation facilities and public facilities and services, the planner must be able to estimate future land use. The second general purpose is testing. To evaluate the adequacy of transportation or other facilities planned for the future, the planner must be able to test these plans in the context of the future. Prediction of land use patterns and testing of transportation facilities embedded in the land use patterns are necessarily interconnected because the transportation facilities planned may be guiding factors input to the prediction.

But prediction and testing are also essentially interconnected since the prediction of future land use or activity must be appropriate for testing the plans for transportation or other facilities. The output of the predictive model must be at an appropriate geographic scale and contain the necessary information at the appropriate level of detail and in appropriate units of measurement. This straightforward, logical requirement is not simply met. For example, it may well be that to prepare estimates of future residential location, the land use modeler may propose a highly aggregative prediction in which all households are essentially homogeneous. If, however, the behavior of households in the use of transportation facilities is quite different for different types of households, an aggregated form of output from the predictive models is not likely to be very useful in testing transportation facility plans.

All of this is obvious. But it is a major problem in developing an appropriate strategy for design of a model of residential location. To sum up, the fundamental use of models in planning is to permit the planner to test and evaluate realistic alternative futures. For the transportation planner the alternatives to be tested are transportation facility systems, which must serve the land use/activity pattern but which also influence that pattern. More generally the planner is concerned with testing alternative policies—for investment in transportation facilities, for investment in other public facilities and services, for land development regulation, and so forth. Hopefully, these diverse but interacting elements are tested in a common framework and against each other. Given this position on the use of models in planning, it follows that the requirements of testing should control the content of prediction in land use models having a joint purpose of prediction and testing.

EXISTING RESIDENTIAL LAND-USE MODELS

As part of this study an extensive review of existing land-use models was undertaken. This review is discussed in detail in Appendix A. As brought out in this review, there are at least two main lines of emphasis. One emphasis is reflected in several existing large-scale residential models designed primarily to produce inputs for transportation models of the metropolitan system. These are concerned primarily with transportation-related dependent variables, such as length of journey to work or gross residential density. Because of the particular character of long-range transportation plans, the level of aggregation or the scale at which the residential submodels are operative provide little

information about the nature of the consumers whose locations are predicted or the characteristics of the housing inventory to which they are distributed.

Thus, although it may be the case that some specified distance from a major concentration of employment might be used to circumscribe a housing submarket for a large group of housing consumers, such information is not sufficient to explain why some families enter the housing market and others do not. Nor does it explain why some families move across metropolitan boundaries and others merely exchange housing units within their own neighborhoods. In short, the issues which are of critical importance to planners and decision-makers concerned with stabilizing neighborhoods, broadening choice within the market, and reducing constraints that are artificially influencing the housing choice of consumers, are all too finely detailed to be clearly discernible elements in such existing models.

Additionally, it was found that several transportation-oriented devices, because they are concerned with evaluating differences in patterns of residential settlement under alternative transportation systems or patterns of employment in the study areas under investigation, reshuffled entire populations during each forecast period. That is, rather than dealing with marginal movers or those families who actually are expected to be entering the system from outside or those who will move from one location in the area to another, every family is reassigned and gross differences in residential configurations are compared. In this sense these models might be called "atemporal equilibrium devices." The underlying assumption of these models is that the sum total of marginal adjustments to marginal changes in the transportation system and/or distribution of employment will, over time, be the same as the aggregated adjustment, defined as the predicted residential configuration.

A second line of emphasis identifiable in the review of existing models focuses more directly on the concerns of discrete and defined groups of housing consumers and concentrates on the location-seeking process, where more than a single moving purpose is of concern. It might be noted also that several efforts under way seek to develop more than purely trend-based predictive devices. Instead of relying on historical data as a base to quantify relationships between, say, income and housing expenditures, and to extrapolate such relationships into the future, there is an interest in learning more about the nature of consumer preferences and in using this information in a preference function to take account of conditions different from those which prevailed in a historical context.

A general agreement is beginning to emerge among interested and participating parties in the model-building trade that predictive models must be preference-oriented. If this is to mean something, the diversity in the methodology of preference analysis must be brought into line with what appears to be theoretical agreement on the nature of consumer preferences. This review also suggests that current levels of knowledge of consumer preferences in housing are relatively low and that work is as yet not very far removed from the old-fashioned and familiar trend model.

This review has assisted in identifying the range of objectives which might be pursued in the design of a large-scale model system. For example, one issue which emerges from the review is whether the model should give recognition to types of families or aggregates of families. Most existing models disregard differences among classes of households as to moving behavior. It has been one of the purposes of this study to identify factors of concern to the families who make up the market and to learn how they react in the market. This involves investigating the motives of households for entering the market and examining the extent that their knowledge of the housing market influences their locational decisions. It may be important in the design of a model system to give some recognition to the degree to which households are satisfied in their new homes and the probability of their reentering the market in the near future.

Another possibility to be considered in model design is some means of recognizing the moving experience of households. For example, if length of previous move is considered in the design of models, there is opportunity to determine whether families who move short distances from their previous places of residence perform different roles in the determination of such things as neighborhood change, than those who move long distances. There is opportunity also for exploring the possibility that the interaction of these two kinds of movers functioning through the market process serves to determine marginal changes in the metropolitan spatial structure. However, it can be argued that the question of whether the model should be concerned with predicting the location of marginal movers rather than with redistributing entire populations during each forecast period is academic unless and until the purpose of the model is made explicit. If, for example, one is interested in analyzing the gross difference in locational configurations that might result under major alterations in, say, the transportation system of a study area, perhaps reallocating entire populations is the most efficient means of doing so. By so doing, many families in the study area will probably be reassigned to housing categories similar to those they lived in under the previous transportation network and, thus, cancel out in the end.

If, however, one is concerned with the process of mobility and interested in the reasons why particular households move while others do not, and why particular families move longer distances than others, perhaps focusing on recent movers as the relevant universe and predicting the locational behavior of such families might represent a very valid extension in the scope of the modeling effort.

Moreover, if the intent is to be able to take account of policy, technological, or social changes that make their influence felt through the mobility process, it may be important to include mover behavior in the modeling system. For example, if there should be interest in testing out the effect of housing finance options that would permit home ownership by low-income families on a widespread basis, a considerable shift of households could be expected. By including in the design of the model appropriate input points for taking account of policy alternatives, the model becomes a more flexible instrument of analysis. By the same token,

it may be useful to test out the implications of new technologies; for example, innovations in waste disposal methods that would relieve homebuilders of the necessity of locating housing in the service area of public sewage systems. It is possible that relaxation of this constraint would set in motion change in residential choice patterns and involve new mobility patterns. Or, to take still another example, the design of models that permit explicit recognition of social factors may offer opportunities to test out the implications of social change that stem from a shorter work week and the housing moves set in motion by assumed changes in household activity patterns.

SUGGESTIONS FOR A MODEL OF RESIDENTIAL MOBILITY AND CHOICE

In attempting to sum up the implications of this study for modeling residential mobility and location choice, several assumptions must be made. First, for what is such a model or models to be used? The following discussion is based on the assumption that, in general terms, the purpose of such models is to evaluate alternative policies for land development and transportation. Specifically, such models may be used to evaluate the effects of alternative systems of transportation facilities, land development regulations, other public facilities, or combinations of these. The focus on policy or plan evaluation places the prediction on forecasting aspects of the model in a secondary role. Obviously, the models must be forecasting models, as their purpose is to evaluate plans for the future in the context of the future.

The next question is what form should the model's statement of policy or plan effects take? Essentially there are two possibilities. The model can be designed to produce a final outcome. Generally, this takes the form of some sort of equilibrium analysis in which an estimate of the interaction of growth over the forecast period, existing trends, and the plan or policy inputs are balanced against each other. This approach usually features a high degree of aggregation. The second approach is to concentrate on the process of development rather than the outcome. This approach virtually requires a high degree of disaggregation and direct treatment of behavioral processes underlying land development.

As has been discussed, most existing models of residential location take the first approach (see Appendix A). This study takes the second approach. There are several reasons for this. Most important is the conviction that the most useful analysis of plans and policies for transportation and other public facility planning should provide an evaluation of incremental changes in plans and policies over time. For example, assuming that changes in the transportation system do induce changes in land use pattern and intensity, the transportation planner's evaluation of the desirability of specific facilities should include the effects of such facilities on residential change in such small areas as neighborhoods. To do this the planner must have models or other tools which are sensitive to changes in the urban pattern at this scale. Generalizing this example, it is

reasonable to argue that the planner must ultimately be concerned with the effects of plans at the small scale of the neighborhood and over time as the plans are incrementally implemented, even though the facilities he is planning, such as transportation, must be planned at the metropolitan scale as systems. This creates a difficult tension for the planner between this approach and system-wide equilibrium analysis. The argument made here is that the approach suggested permits both kinds of analysis and evaluation, and is therefore preferable. It is recognized that it is extremely difficult.

The second assumption made here is that modeling of residential development needs to be done in two parts. On one hand the consumption of residential space must be treated in a model framework. This has been the focus of this study. On the other hand the production of residential space must also be treated in a model framework. These two parts need to be separately modeled; the participants in the two processes are different, their motivations differ, and their behaviors are probably best explained through separate conceptual frameworks. These two sides of the coin (demand for residential space and supply of residential space) are then brought together to produce estimates of the future residential pattern.

Given these assumptions, what form should a model of residential mobility and choice take? As shown in Chapters Four and Five, and as hypothesized at the outset of the study, it appears that the most fruitful approach would be to model mobility and residential choice separately as linked but independent models of the residential process. The prime reason for this is that it has been shown that different variables are the best predictors of household mobility and residential choice. The results of those analyses are summarized at the end of the respective chapters and are not repeated here. Only two major points are reviewed.

First, the analyses suggest that different factors are most useful as statistical predictors of residential mobility and of the housing and neighborhood environment that will be chosen. For example, age of the head of the household is a significant indicator of mobility, but is of little statistical value in predicting the outcome of the move. Similarly, some of the social-psychological factors are significant indicators of household mobility, but the residential choice made by the households seems little influenced by these same social-psychological factors.

Second, accessibility to a number of regular and out-of-home household activities, including the workplace, was found to be a relatively unimportant factor in a household's residential mobility and in a household's choice of a new residence. Within this general, and surprising, pattern it was noted that distance from the workplace related to mobility in that households who live some distance from the head's workplace are somewhat more likely to move than families that live close to the head's workplace. But no relationship was found between mobility and the location of other household activities, including shopping centers, schools, hospitals, and parks.

Also, as discussed previously, there are always more households in the market for new housing at any time than actually move. These are households who have made a mobility decision but for some reason cannot come to a satisfactory residential choice decision. Information about such households may be very important to the planner. For example, in many cases such households may be members of minority groups whose housing choices are constrained. Ability to "track" such households is important—especially in the not infrequent case where the facility being planned, perhaps an expressway, directly affects the housing supply available to these groups. More generally, this kind of information will permit analysis of the functioning of this residential housing market.

The general schema suggested as a framework for modeling mobility and residential choice is as follows: The first model is designed to produce estimates of mobility; that is, numbers of households who plan to move, by household type in small areas such as census tracts. The mobile households and the housing they currently occupy enter the second model, residential choice, along with estimates of inmigrants and newly formed households. The housing search process is then modeled in terms of competition among the locating households for the available housing, given each household group's socio-economic characteristics and preferences.

This is a very general description of a complicated process. The critical questions at this point are not the operating characteristics of such models, but rather what the elements and scale of the models could be and whether these are manageable. Obviously the models would have to deal with aggregations of households. The traditional way to do this is by socio-economic characteristics. It was indicated in Chapter Three that by taking a retrospective view of the residential decision, and thereby identifying flows of movers, one might gain a better perspective of the dynamics of mobility. It was further indicated that any model of residential mobility ought to consider the variety of different kinds of residential decisions that occur in metropolitan housing markets, simply because they all ultimately affect and are affected by the spatial structure of the metropolitan complex.

If, for example, each of the flows or mover groups define household groups who are motivated differently, by aggregating population groups along the lines of these dimensions as well as by more traditional means it should be possible to produce more reliable predictions of housing and locational choices. Even though use of the flow concept implies an extrapolation of previous housing market behavior, it seems reasonable to assume that the broadly defined kinds of market behavior implied in the flows are likely to continue into the future in a not too different form. The potential value of the analysis of mover groups is not that it represents a model of moving behavior; rather, it presents a somewhat different way of looking at the problem and provides an organizational framework within which a variety of analytical techniques can be applied.

ESTABLISHING A RESEARCH BASE FOR MODELING RESIDENTIAL LOCATION

At the outset of this study, it was recognized that a national survey of residential mobility and location behavior of households would be inadequate for developing in detail a specific model or models of residential location. Rather, the effort has been focused on analysis of the fundamental factors involved in mobility and residential choice, regardless of the vagaries and varieties of experience in a particular urban community. The validity of this effort is forced by the finding that there is little variation in the influence on mobility and locational choice of many factors in different regions of the country. Factors relating to household income, family size and type, and attitudes tend to be similar across the country.

As expected, there is some variation in the accessibility of households to various activities in different size metropolitan areas. And there are some regional differences in the kind of house and kind of equipment wanted in the house which reflect climatic differences, and differences in custom and the prevailing housing stock. But these differences do not appear to be of major significance in the household's decision to move or its selection of a dwelling, except as they, in effect, define what are desirable dwelling place characteristics in different metropolitan areas.

Although a national study such as this is extremely valuable in establishing a perspective on residential mobility and choice, and in defining key factors to be included in models of residential mobility and choice, development of a model for a specific metropolitan area requires collection and analysis of considerable data on that metropolitan area for at least two reasons. First, a specific model is designed for one or more specific purposes or uses. The use to which the model will be put necessarily dictates the kinds and detail of information which the planner requires from the model and must also put into the model. Constraints of time, manpower, and money, and the parsimony of good practice, suggest that the model should be tailored to its expected use. Second, to be useful a model must be validated. There are a number of approaches to validating a model—some requiring considerable local data, others not. A model of residential choice based on an explicit, well-tested theory may be validated, at least in part, in terms of its fidelity in rendering the theory operational. But, more typically, attempts to validate a model center on the performance of the model in replicating the present by applying current or past time period data to it. Additionally, of course, many models of residential location contain parameters which must be estimated from local data.

The problem of data for model design and testing is a serious one. For example, careful examination of the existing models reviewed in Appendix A leads one to the suspicion that the design of some residential models was strongly influenced by the data available to the model builder at the particular time and place of the model building effort. And it has also been observed that specific model building efforts in different metropolitan areas have not benefited greatly from similar model design and data collec-

tion egorts in other metropolitan areas. Needless to say, this is an undesirable state of affairs. Yet it is a very difficult situation to change unless model builders have available to them a common body of data of sufficient breadth to support a variety of attempted model designs. But such a data base is probably beyond the reach of a mission-oriented, single-metropolitan-area-based modeling effort.

It appears that some form of a regularly updated panel survey on household mobility and residential choice is needed. The national survey conducted for this study is an example of the kind of data base that could be used to develop a regularly updated national panel survey. The basic idea of a panel survey is that the same sample of the population is re-interviewed on a regular basis and their current attitudes, family characteristics, income, and data are recorded; and the mobility and residential location decisions made by the households in the interim period are reported. The analyst is then able to examine changes and consistencies in households' attitudes over time; and, more important, he is able to test households' actual moving behavior against predictive hypotheses formulated at earlier time periods.

Continuation research has been initiated to extend the project reported here through a follow-up of the original respondents and dwelling units. In September 1969 the researchers began the task of locating and re-interviewing all original respondents, as well as all households presently living in housing units vacated by out-movers of the original sample. This second-wave survey, again conducted by the National Opinion Research Center, is being funded by the National Science Foundation.

The information collected will make it possible to test, and hopefully validate, hypotheses about mobility and residential choice developed in this study against a truly dynamic representation of actual behavior. For example, it will permit testing predictions of which families in the sample will move and what type of dwellings they will select against actual behavior. In addition, interviews will be conducted with households who have moved into the dwellings vacated by members of the original survey. This will permit comparison of the satisfactions and attitudes of different households occupying the same dwellings.

Because a national survey, although extremely useful for developing and testing hypotheses and for model construction in general terms, is not adequate for testing and validating specific models, it appears desirable to establish panel surveys similar to the national survey in one or more metropolitan areas. Assuming, for example, that three metropolitan areas of different size and in different regions of the country were selected for this purpose, a large degree of the variety among metropolitan areas could be captured. These areas could then serve as a testing ground for a large number of model building efforts.

The importance of such data on a regular, continuing basis for improving model building and development of theory of residential location is obvious. However, a data collection program of this sort should be mounted on a permanent basis. It should have some guarantee of funding continuity because the greater payoffs will come when several comparable data sets are available to researchers. In addition, a panel survey of this type should be organized so that the survey results are readily available to all model builders, planners, and other researchers. Only in this way will the potential benefits of coordinated data collection be realized. Unfortunately, no existing regular data service, such as the U.S. Census, provides the kind of information in the detail needed for model building.

In suggesting the desirability of national and metropolitan panel surveys, the authors are well aware of the financial and institutional difficulties involved. However, to the extent it can be ascertained at this time, it appears that the potential benefits clearly outweigh the costs. At least the suggestion seems to merit further consideration before either being accepted or rejected.

CHAPTER SEVEN

EVALUATION

It is very difficult at the close of a study like this to stand back and evaluate the results. The authors are well aware that they are probably least qualified to undertake this necessary task and so comment with caution.

The initial charge for this study was:

1. To study essential features about the housing unit and the surrounding environment which households in a representative cross section of population take into account in the course of selecting a place of residence or find particularly satisfying in their present surroundings.

2. To develop a mathematical model incorporating significant choice factors to be used in determining individual preferences for dwelling types and environmental setting.

The analysis of housing preferences was to include examination of income/price ratios for housing, family cycle patterns in relation to mobility and residential choice, restraints on freedom of choice, social and cultural values and attitudes, neighborhood amenities, and accessibility influences, among others. The analysis was to be based on a national survey of households.

This report documents the results of the national survey. The analysis has been fruitful in that through examination of these variables and many others some sense of the relative significance of these variables has been developed. In many cases the analysis has supported and added to the confirmation of hypotheses developed by other researchers in similar studies. In some instances the results of this study do not support the conclusions of others. A major outcome, expectedly, is that this quite detailed survey and analysis demonstrates that the level of understanding of the behavioral process involved in residential mobility and choice is considerably less than ideal. It is one thing to describe statistically the outcome of these processes in terms of a distribution of households in an urban area at one point in time; to relate the form of that distribution to independent, indicator variables; and to project changes in the distribution pattern of households (the resultant myriad mobility and location decisions) in relation to independent variables or previous distribution patterns. To describe and in some way predict these processes—in other words, to understand the distribution pattern of households—is quite a different and considerably more difficult task.

It has been shown in this analysis that understanding of household mobility and residential choice decisions is enhanced by treating these as separate, although related, sequential decisions. It appears that different factors are the best predictors of each.

This analysis raises a number of questions about models of residential location to be used in land use and transportation planning. The questions raised by the analysis center around the single question: What is the appropriate scale or level of detail of analysis for understanding mobility and location decisions and for replicating them in a model? Ideally, and irrespective of the use of such models, the appropriate answer would seem to be that the scale which provides the maximum understanding of the behavioral process involved is most desirable. But, as previously argued, from the land use and transportation planning perspective the appropriate scale of the model depends on the intended uses of the model and the output information required by the planner. Given the cost of developing and using complex models of urban development processes, the current limited understanding of such processes, and the slender theory available for guidance in developing better models, it is very easy to argue for models which may be quite aggregative in terms of data, static equilibrium-oriented in terms of treatment of time in the model, and oriented to statistically sound replication of observed development patterns. This is if the information output from the model meets the statistical requirements of the next phase in the planning process.

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APPENDIX A

A REVIEW OF RESIDENTIAL LOCATION MODELS AND THE MODELING OF HOUSING AND LOCATIONAL PREFERENCES

This appendix will be of special interest to those who have not had occasion to follow developments in residential location models. It is organized in three parts. A brief historical context is first supplied. This is followed by an explanation of a framework which is used for comparing models, including an illustration of how the approach can be used for a more intensive analysis of each model. In the final and main part of this appendix, the comparative framework is applied to nine models.

DEVELOPMENT AND USE OF URBAN MODELS

If a variety of isolated benchmarks in the early history of city building can be passed over, the modern era in urban model building begins in the 1920's with work in location economics and land rent theory. The effort of such land economists as Richard Hurd to construct a theory of urban land values and to explain the phenomenon of urban settlement and location is a useful point of beginning (56). Inspired by the earlier works of Ricardo and von Thünen, who were concerned primarily with the agricultural sector, Hurd's work was an effort to explain the complexities of urban settlement and growth in relatively clear and simple economic concepts. Indeed, his work involved data collection and manipulation of such a magnitude that it may well be considered a prototype of the present day urban model.

So long as public policy concerns could be adequately satisfied with relatively uncomplicated explanations of urban growth, and so long as land or site rents could be described in terms of competitive bidding for profit, the contributions, of Hurd, Haig and others were adequate in lieu of models. In fact, the establishment by Haig of the complementarity between site rents and transportation costs (the costs of friction) is recognized to this day by urban model builders. It has become a normative prescription for many others in planning the most efficient city. "Of two cities, otherwise alike," said Haig (57), "the better planned, from the economic point of view, is the one in which the costs of friction are less."

Another influence on modern-day urban models developed in the form of a reaction to purely economic explanations of urban processes. As represented in the work of Burgess, Hoyt, Firey, and Hawley (58), the ecological school evolved a theory in which land values were seen to affect residential development but not to determine the pattern of development. It is interesting to note here that where Haig's model was developed as part of the effort to produce a regional plan for the New York area, Hoyt's concern, working for the Federal Housing Administration, was the difficult task of evaluating the relative safety of its investments in different parts of cities throughout the country (59). Thus, the sector theory was a direct result of Hoyt's efforts to produce an evaluative tool which could be used to guide government policy, a purpose of many contemporary urban models.

Within the ecological tradition there is a natural evolution of urban conceptual models, the more recent building upon or serving as a reaction to the earlier. Not long after the Burgess zonal formulation and the Hoyt sector concept appeared, Walter Firey criticized them as being too "simplified and deterministic. The spatial distribution of upper class families is apparently more variable than the Burgess-Hoyt theories appreciate," said Firey. "Whatever forces are responsible for it must be sought in less simple and tangible factors than those of inevitable radial extension or inevitable ring-like expansion" (58). From Firey's perspective, there are key social explanations involving group values, social cohesion, and similar concepts which are essential dimensions that help to explain the nature of urban growth (58).

While model building efforts received momentum from a scientific compulsion to understand more and more about cities, out of recognition of the tremendous complexities of the real city, there was a tendency for these efforts to turn to particular sectors of society or specific functional relationships. This was re-enforced by a number of Congressional actions in the early 1960's with respect to comprehensive planning within particular functional sectors. Thus, emphasis on sectoral planning in transportation, health, and education were given impetus in Federal legislation. In the area of transportation planning alone, theoretical and methodological advances came to be so important that they set in motion a whole line of new developments in land use modeling of similar significance. Indeed, these efforts are now evolving into an emphasis on developing long-range, comprehensive strategies for the revitalization of cities in socio-economic as well as physical terms. Along with this shift, a few analysts have turned attention once again to building systems of interrelated submodels of the entire metropolitan complex.

In the area of residential settlement and residential growth and change, which is of particular concern in this study, there are other notable cycles to research emphases. In the early 1950's Rapkin, Winnick, and Blank produced a conceptual model of the housing market which is generally used today to explain housing submarkets, how individual households form the links that connect various submarkets and how such human links, through their differential bids, ultimately affect and help determine the price structure that will prevail (60).

Shortly after this early work, a series of exchanges between two students of housing lent further insight into the nature of the housing decision. Louis Winnick, in studying

investment and consumption patterns of families in the United States from 1890 to the early 1950's, developed a model which demonstrated that average per capita investment in housing had fallen over the years and that there had occurred a downward shift in housing preferences among American families (61). The response to this investment model was an alternative model of housing investment by Guttentag, who offered a different approach to the housing problem (62). Whereas Winnick viewed the housing purchase as a capital investment, Guttentag viewed it as mixed good, in which not the price of the house but the monthly carrying costs and down payment became the crucial variables.

At about the same time, reactions were beginning to appear to a theory of how the private market can provide low-income families with decent housing. Originally presented by Richard Ratcliff in 1949, the model of filtering down was appraised and reformulated by Fisher and Winnick, commented upon and altered by Lowry, conceived differently by Grigsby, and, in 1964, further altered by Smith (63, 64, 65, 66). Accompanying each of these interpretations have been further spin-offs of insight and information that supply momentum for modeling the housing market which continues unabated to the present.

THE PURPOSE-APPROACH MATRIX

With this brief historical background on the sources of influence on present-day work in land-use modeling, and particularly in work relating to residential development and housing, it is proposed now to present and analyze a series of residential models. This review utilizes what is referred to as "the purpose-approach matrix" (Fig. A-1). The difficulties of undertaking a comparative analysis of widely divergent modeling approaches and models which are still undergoing refinement and change will become quite apparent. So this analysis is presented as a first approximation to be revised when work on these models is extended, further tests are made, or new developments come to light.

A total of 17 models will be included in the purpose-approach schema, each of which can be classified under one of four categories within the broad purpose of residential location. The categories are: housing demand, housing market or equilibrium location, partial equilibrium location, and residential mobility. Each of these subclasses is discussed and a list of the 17 models, appropriately classified, is included.

Subclasses of Residential Location Models

Market Demand.—There are several fundamental questions that can be raised which characterize the major purpose of these models. In general, they are concerned with appraising the ability of the housing market to absorb housing units of particular characteristics and judging the rates at which the absorption will take place.

Market Models or Equilibrium Location Models.—Although there are several technical conditions which must be met before a model might be classified as an equilibrium model, the aim of such models is generally to produce or achieve locational patterns of households which clear the market and establish a price structure that equates supply

and demand. Such a solution would imply a perfect market in a state of equilibrium. The basic purpose of such models is, thus, to reflect the market processes in achieving a locational pattern.

Partial Equilibrium.—Any model, the purpose of which is to identify or generate locational patterns that are consistent with or in part a function of existing price structures and conditions of supply existing in the market, will be considered under this subclass. What distinguishes partial equilibrium models from the equilibrium constructs is that the former are basically efforts to understand the complex forces operating in a given market in which conditions of supply, etc., are held constant and families are exposed to given market conditions. The latter, on the other hand, are efforts to reflect the theoretically perfect market in which the interactions between demanders and suppliers of space result in a price structure that is stable and, at the same time, one in which neither buyers nor sellers have a tendency to alter the achieved pattern.

Mobility.—Those models developed to identify that part of the sitting population which will voluntarily change its residence, or to otherwise explain the process of mobility, will be classified under this heading.

An Inventory of Residential Location Models

Demand Models
1. The Eastwick Model—Rapkin and Grigsby
2. The Residential Renewal Model of the Urban Core —Rapkin and Grigsby
3. Projectron Model: Ten-Year Housing Market Analysis—Barrett Division of Allied Chemical Corporation

Market or Equilibrium Location Models
4. Model of Metropolis—Lowry
5. Location and Land Use—Alonso
6. Model for the Distribution of Residential Activity in Urban Areas—Herbert and Stevens
7. Equilibrium Model of Metropolitan Housing and Locational Choice—Harris
8. Filtering and Neighborhood Change—Smith
9. Model of San Francisco Housing Market—Arthur D. Little
10. Modeling of Household Location: A Statistical Approach—Ellis
11. A Probabilistic Model for Residential Growth—Chapin, Weiss, and Donnelly

Partial Equilibrium Location Models
12. Resloc—Penn Jersey Transportation Study
13. The Journey to Work as a Determinant of Residential Location—Kain
14. A Multiple Equation Model of Household Location and Tripmaking Behavior—Kain
15. Growth Allocation Models (Empiric, Polimetric)—Traffic Research Corporation

Mobility Models
16. Why Families Move—Rossi
17. Rates of Ownership, Mobility, and Purchase—Maisel

Dimensions of Residential Location Models

Each of the row headings of the purpose-approach matrix will serve to characterize an approach of model builders to various component parts of their modeling efforts. When viewed across dimensions, in whole or in part, and within a particular subclass or across subclasses, the columns of the matrix will describe either over-all strategies of model building or substrategies associated with particular dimensions of model building which will help to explain how and, perhaps, why particular elements of some models take the forms that they do (67).

Purpose of Modeling.—It is first of all necessary to distinguish the purpose of any particular model from the general purpose of model building itself. This distinction is of critical importance to operating agencies which might be giving consideration to adopting or modifying existing models that were developed primarily as research aids or exploratory devices, and to using them to predict future locational patterns or to evaluate the consequences of alternative policies. Thus, while it can be said that all of the models represent efforts to learn more about locational phenomena, some were developed to produce forecasts or predictions in an operating agency context, some to explore and describe hypothesized relationships which are primarily research oriented, and some for purposes of education.

Approach to a Theoretical Base.—The second dimension of the matrix concerns the source of the theoretical framework. Is the model based on economic theory? If so, it

Approach	Purpose			
	Market Demand	Equilibrium	Partial Equilibrium	Mobility
Purpose				
Forecast				
Research				
Education				
Theoretical Base				
Economics				
Sociology				
Physical Sciences				
Empirical				
Spatial Structure				
Describe				
Process Oriented				
Space				
Direct				
Indirect				
Functional Rel.				
Deterministic				
Probabilistic				
Time				
Static				
Recursive				
Aggregation				
Macro				
Micro				
Solution Method				
Analytic				
Simulation				
Deductive				
Data Collection				
Observed				
Survey Research				
Comprehensiveness				
Holistic				
Partial				
Generalization				
Universal				
Specific				
Preferences				
Explicit				
Implicit				
Testing				
Calibration				
Reasonableness				

Figure A-1. Purpose-approach matrix.

makes certain basic assumptions about how the market for housing functions, or how individuals appraise their housing decisions. Is the model based on underlying sociological relationships and principles? Is the model based on principles derived in the physical sciences, such as the gravity concept and made applicable by analogy to the housing market? Or is the model principally an empirical device that has no fundamental underlying theory?

Viewpoint of the Spatial Structure.—A third dimension of the matrix relates to the type of model. Does it describe residential growth or locational patterns as dependent on one or more spatial dimensions such as distance from the core of other accessibility measures? Or is the model process-oriented and focused primarily on the process which is responsible for the locational pattern and on the more consistent and predictable aspects of human locational behavior?

Treatment of Space.—Another dimension has to do with the way the model takes account of space. Does it use a direct approach to space, treating it as a continuous variable? Under such an approach simple Euclidian space is transformed into more complex but realistic space by two transformation functions: the transportation system and the physical and institutional factors which limit the supply of space available for residential development. Conversely, does the model concern itself with an indirect approach to space? In such an approach the Euclidian concept of simple space is not used; in its place appears internally unstructured zones of *N*-dimensional space characterized by various influence factors of spatially related attributes such as densities, zoning regulations, and topography. Such zones or spaces are identified so that they can be inserted in their proper location after solution of the model. A significant property of this transformed space is that a zone is not forever fixed as it is in Euclidian space. Its absolute position changes with a change in the value of any of its dimensions, and its relative position changes by changes in factors or dimensions associated with other zones, even though its own factors remain constant.

Approach to Functional Relationships.—Still another dimension relates to the nature of causal relations used in the model. Does the model yield the single distribution of households across the market area? Does it yield a single distribution of household types which, for example, will be moving, for a given state of the predictor or explanatory variables? In this type of model, the locational pattern or other outcome is completely determined by the functional relationships among the explanatory factors. In a probabilistic approach, outcomes are dependent on one or more random selections from a probability distribution which has associated with it an array of possible outcomes. It is the probability distribution that is directly dependent on the state of the explanatory variables. Thus, the particular outcome that is obtained with any given run of the model is, indirectly, dependent on the explanatory variables, but not deterministically so. There is generally (but not necessarily) still one answer provided for each trial of the model, but the outcome may vary from trial to trial.

Treatment of Time.—If the model assumes that the relationship between independent and dependent variables is strongly self-equilibrating and is, thus, a relatively stable one, the treatment of time is static. In this atemporal approach, therefore, there is an implicit assumption that this "one shot" solution does, in fact, represent rather closely the end product that would occur over some unspecified time. In a recursive approach, the model produces stepwise, static predictions or intermediate outcomes for specified time periods, the outcomes of each step becoming part of the inputs for succeeding steps.

Approach to Aggregation.—If the functional relationships between predictor-explanatory variables bypass individual units of the predictor variables and, instead, relate to collections of the predictor variables, the approach is *macro.* The *micro* approach, on the other hand, emphasizes relationships between independent variables and the behavior of individual decision units. The spatial configuration of location or growth is then obtained by aggregating individual outcomes or, if the outcome is not a locational configuration, by summarizing household decisions or characteristics.

Approach to Solution Method.—The greater the precision with which the relevant variables and relationships of the model are stated, the more rigorous and elegant is the possible solution method. In descending order of elegance there are, perhaps, five solution approach methods: mathematical analysis, numerical solution by iteration, machine simulation, calculation by hand, or deductive methods. The mathematical analysis solution is the most elegant and the simplest approach, but also requires the highest degree of logico-mathematical coherence of functional statements. The numerical iteration method is used where the model is not quite logically closed in its structure of statements, and when the mathematical solution to the particular functional relationships cannot be found. This method of successive approximations, each based on a previous approximation, converges on a solution to the model. Although all models attempt to explain, replicate, or predict locational patterns or movement of households, the simulation model actually emulates the urban development process in a simplified way. Such a solution method requires the specification of all relations within the model so that decision rules are available for every possible situation that arises in the simulation of urban growth or change. The deductive approach is used when the functional statements lack the precision necessary for mathematical analysis and the data required for an iterative solution are inadequate; hence, the need for a "heroic leap" in order to achieve a solution.

Approach to Data Collection.—There are basically two distinct approaches here. One relies on the collection, analysis, and manipulation of existing or observable and measurable market data. The other involves survey research techniques, where the data are derived from interviewing households or other consuming and decision-making units. In this case attitudinal or other information not readily available in census or other market data files is often available in the model building effort.

Approach to Comprehensiveness.—In the traditional sense of the term, a model that reflected and took account of the entire wealth of activities and processes that interact

in the real metropolitan complex would be considered truly comprehensive, or holistic. In the present use of the term, however, holistic models are considered those constructs which involve the entire population or which produce locational configurations for all population groups. Those models which are concerned with particular sectors of the population to the exclusion of others are considered partial models.

Approach to Generalization.—In some cases, models are developed with the intention that fundamental human, market, or other relationships will be identified. Such models are considered for present purposes universal, whereas those which reflect particular relationships that are considered somewhat unique and integrally related with the particular population and market under study are referred to as specific models.

Approach to Viewing Housing Preferences.—Although somewhat inconsistent with the previous dimensions, it seems particularly timely to identify those models which adopt an explicit approach to the location problem, in which the areas of housing preferences are of direct concern, and the locational patterns arrived at are consistent with household preferences. Those models which arrive at locational patterns without focusing explicitly on the preferences of population groups or individual units are considered implicit with respect to this dimension. Such a label is attached to this latter approach because any locational pattern implies something about the level of satisfaction of the population.

Approach to Testing the Model.—In some ways, this is an extremely critical dimension; in others it is of relatively little relevance because the possible tests that can be expected are so inconclusive. The primary method of testing models is calibration. This is simple an attempt to adjust the parameters of a model so that it can reproduce existing locational patterns from the input of historical data. In models of less rigorous logico-mathematical coherence, or in those mathematically rigorous models in which appropriate historical data are insufficient for purposes of calibration, the criterion of reasonableness of output or intuitive appeal is often substituted.

The purpose-approach matrix has, thus, 120 cells, 4 to each row and 30 to each column. Although the sub-classes within any single dimension are meant to be mutually exclusive (i.e., a model is either space direct or space indirect, macro or micro, etc.), no such assumption is made as to the relationships among dimensions. Any given model can have a maximum of 13 descriptive dimensions, although many will have far fewer. Theoretical models will not, for example, have entries for any dimension dealing with data collection or calibration.

Use of the Matrix: Kain's Journey-to-Work Model

To familiarize the reader with the use of the matrix as a way of model description, Kain's (*68*) residential location model is described in accord with the dimensions of the matrix. Following this brief introductory statement, primary emphasis is placed on summarizing a particular dimension of selected residential location models.

Kain's residential model is a holistic, partial equilibrium construct which describes and attempts to explain locational configurations and the location-seeking process of urban households who are faced with a particular pattern of supply and a particular price structure for urban land. It is primarily a research-oriented device that is based on assumed interrelationships among several economic precepts. Households substitute journey-to-work expenditures for site expenditures, with the rate of substitution depending on the household's preference for low-density living. The cost of the journey to work is a monotonically increasing function of the distance a household resides from the place of work of its chief wage earner; rents decline with distance from concentrations of employment; and, finally, outside residential space is a superior good so that, as income increases, the consumption of residential space increases, *ceteris paribus*. If these assumptions are placed in the context of the utility-maximizing postulates of classical economic theory, it follows that households will locate so as to minimize their total locational costs (site rents plus transportation costs) while satisfying their space preferences.

In very simple terms, Kain postulates that households will trade off accessibility to major activity centers and incur both a monetary cost of transportation plus a nonmonetary cost in terms of inconvenience and bother of commuting for the purpose of reducing their site costs. They will move, in theory, just far enough from the core so that the marginal increase in transportation costs associated with moving a marginal unit of distance farther away from the core is just equal to the marginal savings in site rent associated with that marginal unit of distance. It follows also, of course, that the quantity of land consumed is related to the saving a household can realize by moving away from the core so that we might expect families consuming larger quantities of residential space to live farther from the core than families consuming smaller quantities, *ceteris paribus*.

The model is process oriented, inasmuch as it is concerned with describing how households react to certain market conditions—conditions which act to influence their behavior and thought processes. Similarly, it is space direct, because Kain postulates the existence of a location-rent function which produces a regular rent surface (that affects and is affected by a transportation system) to which all families must react and ultimately conform if they are to locate in the metropolitan market.

Following the purpose-approach matrix further, the model can be designated as micro-oriented because it is concerned with the behavior of individual decision units, although one might wish to summarize the location process by aggregating like households or households whose places of employment are similar and thus face similar location-rent functions.

One might, however, refer to the solution method as deductive, because the predictions forthcoming on the basis of the model are derived from the theoretical base without data. Kain does use market data to partially test the predictive qualities of the model, so that one might observe that the test of the model is one of reasonableness rather than calibration.

SURVEY OF MODELS

Before beginning the descriptive survey, it is useful to disaggregate the 17 models included in the inventory according to the purpose-approach schema, and then to discuss the dichotomous division of the housing and locational preference dimension that appears in row twelve of the matrix (Fig. A-2). It should be noted that the entries in the matrix refer to the models as numbered in the inventory listing presented earlier. Thus, for example, the number "1" in the top-left cell of the matrix refers to the purpose of the Eastwick model.

Instead of detailed descriptions of each of the residential models of interest, or with just a summary of the models in disaggregated format as they might appear in the purpose-approach matrix itself, it would be useful to investigate alternative strategies of residential model building from the point of view of one of the most critical dimensions. This is the approach to the modeling of housing or locational preferences. In initiating the discussion, three things should be evident. First, the various approaches adopted by model builders often imply the adoption of particular approaches with respect to other dimensions. Second, the strategy of modeling housing or locational preferences reflects the particular concerns of the model builder with respect to the over-all objectives of the model and to the ultimate purpose to which the model will be put. Finally, although there is a relatively large number of residential location models, each of which deal in some manner with the problem of preferences, methodological differences among them far outweigh any real differences with respect to theoretical orientation or approach. Of the two basic approaches, the most common from an historical point of view is called the implicit approach. This approach can be recognized by the absence of any specific reference in the model to the subject of housing preferences in general, or by the tacit admission that any quantitative functional element has embedded within it the end products or resolution of the confrontation between households, their preferences, and the market. Thus, locational configurations are arrived at with the implicit assumption that housing or locational preferences or the propensities of different households to consume particular quantities and qualities of housing will remain constant in the future.

The second strategy, here called for reasons of convenience the explicit approach, can be characterized by the presence in the models themselves of some quantitative arguments that embody the housing or locational preferences of the consuming population. This approach takes one of two forms. On the one hand, one might find residential models that contain quantitative arguments that specifically relate households to housing, which, therefore, imply that the preference structure of the population has been identified, quantified, and measured. However, one is just as likely to find residential location models that contain quantitative arguments which do not rely on the individual household or groups of consuming units as their focus, but which relate various forms of urban development to market conditions. Although such models are indeed examples of the explicit approach to locating populations (because households reside in the dwelling units that are located, or

work in the employment centers distributed throughout the study area), they are referred to as index of attractiveness models of residential location.

A total of nine residential models is included in the summary that follows. The number of models to be discussed is fewer than the total included in the inventory because several of the constructs are purely theoretical devices that must be viewed quite distinctly from those which are intimately bound up with the problems of defining, quantifying, and measuring relevant variables. Also, some of the models discussed are closely related to the theoretical devices, so that a discussion of the one implies general reference to the others. Lastly, it must be said that the magnitude of the task dictates that the following discussion be focused on the major issue at hand; namely, inventorying the strategies of modeling the housing and locational preferences of populations. It is, therefore, necessary to assume that the reader has some background in the area of residential model building; if not, he can easily become acquainted with them by consulting the references in the text. Such consultation will also be necessary for those persons interesting in a more thorough review of the non-preference dimensions of the respective models which are summarized in the purpose-approach matrix, but not discussed at length in the text.

Of the nine models discussed, three are market equilibrium constructs, two are market demand models, and four are partial equilibrium constructs. The order of summary is as follows:

Market Equilibrium
    Model of Metropolis—Lowry
    Equilibrium Model of Metropolitan Housing and Locational Choice—Harris
    Modeling of Household Location: A Statistical Approach—Ellis
    Probabilistic Model for Residential Growth—Chapin, Weiss, Donnelly

Partial Equilibrium
    Empiric—Traffic Research Corporation
    Resloc—Penn Jersey Transportation Study
    Multiple Equation Model of Household Locational and Tripmaking Behavior—Kain

Market Demand
    Projectron Model: Ten-Year Housing Market Analysis—Barrett Division of Allied Chemical Corporation
    Residential Renewal of the Urban Core—Rapkin and Grigsby

Market Equilibrium Models

Lowry—Model of Metropolis.—Of the four market equilibrium models discussed, Lowry's work (69) best typifies the use of a modified index of attractiveness approach to the locational process. The model is a static atemporal equilibrium construct that achieves, at a very high level of aggregation, a locational configuration of residential and commercial activity that is consistent with a given distribution of basic employment in the metropolitan region. Taking the location of basic employment as a starting point, the locational algorithm distributes around the workplaces clusters

of resident work force. The potential for residential settlement of any zone, although a complex function, can be characterized as being based almost exclusively on its relative accessibility to all work places. The index of attractiveness is, thus, a willingness-to-travel function applied to undifferentiated worker populations at each work center. Given each cluster of basic employment, the amount of land available for residential development in each mile-square grid in the region, and some pre-specified residential density limits, workers are allocated (on a modified gravity model basis) to the most accessible zones first, the overspill being resettled in the next most accessible zones not having reached the preset density limits. Because many zones receive workers from more than one basic employment

cluster, the resettling and reshifting continues until all workers are settled and no zone is overpopulated.

The next stage of the model uses the initial residential distribution of basic employees as the starting point to locate retail and service activities of the community. The location of these population-serving activities is based on a calculation of the market potential of each zone defined in terms of its accessibility to customers. Each activity is located in proportion to each zone's market potential. Since the population-serving activities require employees who, in turn, require housing, a new round of calculations is initiated which results in locating these employees. When the new population distribution is arrived at, the market potential of each zone must be recalculated and additional changes made in the population-serving activities pattern.

Approach	Purpose			
	Market Demand	Equilibrium	Partial Equilibrium	Mobility
Purpose				
Forecast	1,2,3	6,9	12,15	
Research		4,5,7,11	13,14	16,17
Education		8,10		
Theoretical Base				
Economics	1,2	5,6,7,8,	13,14	
Sociology				16
Physical Science		9		
Empirical	3	4,10,11	12,15	17
Spatial Structure				
Describe	1,2,3	4,11	12,15	17
Process Oriented		5,6,7,8,9,10	13,14	16
Space				
Direct	1,2	4,6,7,11	12,13,15	
Indirect	3	5,8,9,10	14	
Functional Rel.				
Deterministic	1,2,3	4,7,10	12,15	17
Probabilistic		9,11	14	
Time				
Static	1,2,3	4,5,6,7,10,11	13,14,15	17
Recursive		9	12	
Aggregation				
Macro	1,2,3,	4,7,9,10,11	12,14,15	17
Micro			13	16
Solution Method				
Analytic	3		14	17
Simulation		4,7,9,10,11	12,15	
Deductive	1,2		13	16
Data Collection				
Observed	3	4,7,9,10,11	12,13,14,15	17
Survey Research	1,2			16
Comprehensiveness				
Holistic	1,2	4,5,6,7,8,9,10,11	12,13,14,15	
Partial	3			
Generalization				
Universal	3	5,6,7,8	12,15	16,17
Specific	1,2	4,9,10	13,14	
Preferences				
Explicit	1,2	5,6,7,8,10	13	16,17
Implicit	3	4,9	12,14,15	
Testing				
Calibration	3	4,7,9,10	14,15	17
Reasonableness	1,2		12,13	

Figure A-2. Classification of models reviewed.

Once again, this will require a reallocation of retail and service workers. Each iteration results in less and less displacement from the pre-existing population distribution until the final recalculation of the market potential of each zone results in no discernible reallocation of population-serving activities and, hence, to no reallocation of the population. At this time, the market has achieved an equilibrium.

The allocation of households (employees multiplied by a factor greater than one) to residential zones can be summarized in two equations. First the region's total population of households is a function of total employment (69),

$$N = f \sum_{j=1}^{n} E_j \qquad \text{(A-1)}$$

The number of households in each zone is a function of that zone's accessibility to employment opportunities, or

$$N_j = g \sum_{c=1}^{n} \frac{E_i}{T_{1,J}} \qquad \text{(A-2)}$$

in which g is a scale factor whose value is determined by the requirement that the sum of zone population must equal the total population of the region.

By altering accessibility measures and/or the distribution of basic employment centers and/or density limitations of residential zones, alternative locational patterns can be derived and compared.

The Lowry model, as presently developed, provides no information about the quality or other characteristics of the housing stock in which the locating employee-households are assigned, nor does it provide any information about the different population groups that are distributed throughout the study area. At the very gross level of aggregation at which the model operates, all households in the study area are reshuffled or resettled, and most of the household-housing relationships that were discussed earlier and which are of concern to planners are eliminated. It must be stated, however, that the purpose of the model was to simulate a market solution so as to be able to compare and evaluate varying spatial arrangements that might result in the metropolitan complex under varying density constraints, employment distributions and accessibility patterns and not to provide fine-grained patterns of residential development.

Harris—Equilibrium Model of Metropolitan Housing and Locational Choice.—The second market model to be discussed, developed by Britton Harris, is of particular interest because it represents the first attempt to quantify housing preferences and to come to grips with the implications of allowing market constraints to vary while holding housing preferences constant (70, 71). It is also the first residential location model that attempts to predict a locational configuration and a resultant rent surface that would prevail under the predicted pattern of occupancy.

Although the model is based on a mathematically defined function of consumer preferences and a linear programming scheme which is used to assign a population to housing in a manner defined as optimal, this section is not concerned with the actual allocation process. The means by which the preference function is constructed is the central focus.

The model in its most basic form is an attempt to extend the conceptual framework of, and make operational, the well-known Herbert-Stevens model, whose purpose is "to distribute an increment of households to residential land in an optimal configuration" (71). It is based on a linear programming scheme that produces an optimal allocation defined as that distribution which maximizes aggregate rent-paying ability. The deductive process through which this locational model was developed was initiated by the simplifying assumption that each housing consumer possesses perfect knowledge about the range of housing alternatives that exist in each subarea of the metropolitan region. Given this knowledge, each household then evaluates the subjective worth of each possible housing opportunity or bundle, and establishes individual budgets or allocations of varying portions of its total income that it would bid for each alternative. Once each alternative has been so evaluated and a subjective bid determined, it is assumed to be a matter of complete indifference to any household where it will actually locate (72).

As developed, the Herbert-Stevens model is not operational. Aside from the ordinary difficulties involved in making the model computationally feasible, the authors recognized the severe problem of ". . . obtaining consistent data on household budgets, amenity levels, and costs. . . ." In short, Herbert and Stevens believed that the key to the successful development of an optimizing location model lay in the accurate estimation of desired or actual household budgetary allocations for both housing and nonhousing goods and services, and that this was virtually impossible at the present time.

The approach taken by Harris, on the other hand, was designed to bypass this problem entirely. He assumed that the housing preference structure of an existing population can be determined from actual consumer behavior. Given this assumption, it is possible to derive through multiple regression analysis a preference function from which can be deduced, for each population group, the budget allocations that would produce the situation of indifference among alternative housing bundles conceptualized by Herbert and Stevens. Because the budgeted prices at which households are indifferent among housing alternatives consist in reality of the rents which they would be willing to pay for different residential bundles, it is possible to locate the population using the linear program solution explicitly contained in the Herbert-Stevens model.

The amount of money particular households will bid for various kinds of housing can be estimated. By substituting in the estimating equation real values for the unknowns and by weighting these values by the parameters of the equation in such a way that household characteristics are held constant while dwelling unit characteristics vary, families of indifference surfaces with properties similar to those hypothesized to exist can be deduced. Although in reality the indifference surfaces which reflect the rent offers of each household group for each housing package must be derived in two stages, because the estimating equation is in terms of nonrental expenditure, for convenience of exposition it will be considered a single-stage procedure.

It is extremely difficult to describe in detail the nature of a statistically derived equation which contains 49 independent variables. For purposes of exposition and to insure that the most relevant properties of the preference function are made clear, it is assumed that all the socio-economic variables used in the actual empirical development of the function can be subsumed under income, and all the housing variables under dwelling unit size. In addition, let the interaction effects of the housing and socio-economic variables be represented by the cross product of the space and income variable. Also, to simplify the presentation, assume the equation to be linear, rather than in logarithmic form as in the real model, and the dependent variables to be rent, rather than the nonrent-income ratio. These simplifications and alterations make it easier to illuminate certain key features of the model, especially the preference function, without distorting the essential underlying assumptions. Given a community of five households, the pattern of behavior observed in the market might appear as in Table A-1. The entries in the cells are annual rents paid. It can be seen that in only a single case is an income group shown to have located in more than one housing type. In reality, of course, there would exist a wide divergence in observed behavior within income groups. In the context of the model, however, the divergence of observed market behavior for households in population group Y_1 is attributed either to the effects of the market constraints or to a random occurrence, but not to basic difference in housing preferences.

TABLE A-1

LOCATIONAL PATTERN OF HYPOTHETICAL COMMUNITY

| INCOME GROUP ($) | RENT ($), BY DWELLING UNIT SIZE | | | | |
	600 (SQ. FT) S_1	700 (SQ. FT) S_2	800 (SQ. FT) S_3	900 (SQ. FT) S_4	1,000 (SQ. FT) S_5
Y_1 5,000		975	1,050		
Y_2 6,000				1,232	
Y_3 7,000	1,096				
Y_4 8,000					
Y_5 9,000					1,640

TABLE A-2

ESTIMATED RENT OFFERINGS OF EACH HOUSEHOLD GROUP FOR EACH TYPE OF DWELLING UNIT

| INCOME GROUP ($) | RENT ($), BY DWELLING UNIT SIZE | | | | |
	600 (SQ. FT)	700 (SQ. FT)	800 (SQ. FT)	900 (SQ. FT)	1,000 (SQ. FT)
Y_1 5,000	900	975	1,050	1,125	1,200
Y_2 6,000	998	1,076	1,154	1,232	1,310
Y_3 7,000	1,096	1,177	1,258	1,339	1,420
Y_4 8,000	1,194	1,278	1,362	1,446	1,530
Y_5 9,000	1,292	1,379	1,466	1,553	1,640

From the observed market behavior, it is possible to generate a linear estimating equation which relates rent to household characteristics and characteristics of the dwelling units secured in the market. Assuming an R^2 of 1.0, the linear estimating equation derived from the foregoing market situation would be as follows: *

$$R = 50 + 0.08Y + 0.6S + 0.00003S\,Y \quad (A\text{-}3)$$

This equation represents the empirically derived preference function of the hypothetical population. By substituting in the equation real values for the income, space and cross-product variables, the remaining empty cells in Table A-1 can be filled. The completed matrix would appear as in Table A-2.

According to the assumptions of the model which are being adhered to in this simplified example, each horizontal row of the matrix represents the rent offerings of a single household group (i.e., income category), and thus is an indifference curve for that group. Consequently, within each household group, every household is assumed to be indifferent among alternative housing packages at the budgeted prices. Because preferences are assumed homogeneous within each group, there need be only a single rent offer for each dwelling type. For example, each household in group Y_1 is assumed to be willing to pay $75 more for each increment in living space it obtains, and is indifferent as to which it ultimately secures.

A second way in which the rent offer in Table A-2 may be interpreted is that it represents, not individual indifference curves of five household groups, but rather a family of indifference curves for a single household group. According to this interpretation, the pattern of rent offering possesses both of the relevant properties of an indifference map. Within any income group each household is indifferent among the units at the budgeted prices, and as income increases the indifference curves increase in height although not intersecting.

The equilibrium location model contains two basic assumptions that relate directly to the properties of the utility function and the indifference surface derived therefrom. The first is that housing preferences are homogeneous within well-defined demographic strata. This assumption implies that for each household group there is but a single utility function that embodies the preference structure of that group, and that there is a single family of indifference surfaces that can be deduced from the function. In practical terms, the assumption implies that there is a single series of bid prices for alternative housing bundles for each population group, and that the tradeoffs each household within a group is willing to make between income and housing are identical.

The second basic assumption, which is not contained in the model, but relates to the use to which the model is put, is that the preference structure of a population is stable over time, and under vastly different circumstances (71). This implies that the utility function which specifies a family of indifference surfaces for a population will be

---

* Assuming an R^2 of 1.0 implies that all rent payments observed fall within one of the cells in the matrix. Since there are three variables in the estimating equation, it implies that all observations fall on the three-dimensional surface defined by the equation.

valid for an unspecified time into the future. In addition, it implies that while actual market behavior may vary as conditions and constraints change, the form and structure of the utility function and the indifference surfaces it specifies will not be subject to variation under market constraints and urban forms that are vastly different from those which presently exist.

Ellis—Modeling of Household Location.—Like Harris' model, Ellis' mathematical construct embodies an effort to measure and quantify the preference structure of a population and to produce locational configurations that are consistent with the exogenously determined preference pattern (*73*). The model is comprised of a series of three matrices, the first embodying variables that are considered relevant in influencing the locational decisions of housing consumers. Thus:

$$\begin{bmatrix} X_1 \\ \cdot \\ \cdot \\ \cdot \\ X_{14} \end{bmatrix} = \text{Household vector}$$

The second matrix, referred to as an environmental vector, is an array of quantitative values that might be deemed appropriate indicators of the nature and quality of the environment desired by individual households or population groups. It might, for example, contain measures reflecting the predominant housing type in a spatially bound area, housing cost, internal and external density values, and measures reflecting environmental quality. In testing the model, Ellis ran a principal component analysis of 18 variables. These were reduced to 7 principal components and interpreted to reflect socio-economic status, dominance of single-family housing, presence of recreational facilities, racial composition of the area, population density, age of the housing stock, and relative quantity of open space in the area:

$$\begin{bmatrix} Y_1 \\ \cdot \\ \cdot \\ \cdot \\ Y_7 \end{bmatrix} = \text{Environmental vector}$$

The third matrix, the desire coefficients matrix, embodies the preference structure of the population. The model is a 7×14 matrix, the elements of which represent regression coefficients relating each household characteristic to each environmental factor; that is,

$$\begin{matrix} A_{11} & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & A_{114} \\ \cdot & & & & & & & & & & & \cdot \\ \cdot & & & & & & & & & & & \cdot \\ \cdot & & & & & & & & & & & \cdot & = \text{Desire} \\ \cdot & & & & & & & & & & & \cdot & \quad \text{coefficients} \\ \cdot & & & & & & & & & & & \cdot & \quad \text{matrix} \\ A_{71} & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & A_{714} \end{matrix}$$

The elements in the desire coefficient matrix are obtained by regressing each of the 14 household characteristics (for each household in the population) on each of the seven environmental measures in seven separate equations. The resulting regression coefficients for each regression equation produce a single row in the desire coefficient matrix.

In short, if the household vector is multiplied by the desire coefficients matrix, the resulting environmental vector can be considered a quantitative description of the environmental bundle desired by the population group in question. For example, if there exist two different household groups, the development of environmental bundles that are desired by the two groups can be summarized as follows:

Household Group I

$$[X_1] \cdot [A_1] = [Y_1]$$

Household Group II

$$[X_2] \cdot [A_2] = [Y_2]$$

If the number of families in each household group is known, the demand in each of the two environmental bundles is also known. Since the environmental bundles are not fixed in space and, as likely as not, there is more than one suitable location embodying the characteristics identified in each environmental vector, it is necessary to specify some rules for allocating households to specific sites. Briefly, Ellis adopts a strategy similar to Lowry's with respect to the actual locational algorithm. First, he identifies clusters of employment and estimates the demand for housing that will originate from each employment center. Then, using a modified gravity concept in which the cost of interaction between zones, the number of opportunities in each zone for each household group (defined in terms of the number of suitable environmental bundles that appear there), and the number of opportunities between zone K and zone N which the family must pass up to locate in zone M, each household is located.

Since various approaches to preference analysis are of particular concern, it is useful to note the strong resemblance between Ellis' and Harris' approach. In each case, exogenously determined preference parameters are input to the model to achieve locational patterns; in each case, also, the preference analysis is based on the existing locational pattern and not on household desires; and, in each case, any unforeseen change in the market structure of basic preferences of a population group will act to change any or all parameters.

In the present model, as Ellis states, if the blue-collar population (carefully specified as to its other characteristics), as a result of, say, a decreasing work week and increased leisure time, should alter its preferences for open space, this would require altering the appropriate elements in the desire coefficients matrix (*74*). Even though there is no certainty what the new values will be, by varying the coefficients one can determine how the environmental bundles that this particular population group might desire will differ from that which it has already selected. By varying the remaining coefficients it is also possible to assess the relative importance of the different environmental factors as they affect the housing decision.

Chapin, Weiss, and Donnelly—Probabilistic Model for Residential Growth.—The last of the market models to be

discussed differs from the others in some major aspects, yet is quite consistent with them in the broad area of preference analysis. The purpose of the Chapin-Weiss-Donnelly model is to predict the incidence of the conversion of rural or undeveloped land into residential use in response to population changes in the study area (75, 76, 77, 78). As such, it is more a model of land-use succession, as Lowry refers to it, than a model of residential location (78). Unlike the others it is concerned with the margins, both with respect to development and to population. Existing development is added to, not altered, and the sitting population grows by increments rather than being entirely reshuffled during each forecast period.

However, like most of the models presented and some to be discussed presently, this model approaches the problem of preference analysis on the basis of an exogenous study of factors influencing land development, and attractiveness scores associated with each zone in the study area which are developed and used in the locational algorithm to assign residential growth increments to spatially defined areas. The attractiveness scores, however, unlike Harris' preference function and Ellis' desire coefficients matrix, relate characteristics associated with residential development to vacant parcels of land rather than households to housing or to environmental bundles. In one sense, therefore, the model contains no reference to housing preferences *per se*. On the other hand, of course, since it is residential development that is being predicted and the factors influencing residential development must be implicitly, at least, related to those characteristics which households consider in locating, the attractiveness scores of each of a region's zones can be related to preferences. Because the model is basically producer-oriented, to the extent that the factors considered to be influential in bringing about residential development must be so considered by developers before the development will take place, the household consuming unit is a step removed in the modeling process.

The attractiveness score of each zone is simply a linear combination of such variables as initial assessed values of parcels in each zone, accessibility to work areas, availability of public sewerage, accessibility to nearest major street, and accessibility to nearest elementary school. Given a composite attractiveness score, each undeveloped parcel within each zone has a probability of being developed in the next forecast period which is proportional to that score.

Like the Lowry model, where the assignment of population-serving employees to an existing distribution of households requires a recalculation of the market potential of each zone and an additional iteration to reassign those same activities, the Chapin-Weiss-Donnelly algorithm assigns population growth during any single forecast period in several passes. First, the probabilistic assignment of an initial increment of residential growth estimated to occur during a single forecast period is assigned on the basis of existing attractiveness scores. Having occurred, this new development then acts to alter the existing attractiveness scores of the zones to which the development was assigned, as well as to proximate zones. After a recalculation of these scores, further increments to the existing development are

located in space according to the estimated population growth that will take place during the period.

By placing strict density limitations on available parcels, by removing particular parcels from the available-for-development category, and by assuming certain policy changes with respect to the construction of school facilities and sewer extensions, and by altering accessibility characteristics and by assuming changes in the existing transportation network, it is possible to observe the various patterns of residential growth that will occur under alternative public policies. In its initial form the model predicted urban development at the fringe and not residential location. Population growth increments were undifferentiated with respect to socio-economic or other characteristics and residential growth increments were not defined with respect to housing types and/or qualities, neighborhoods, or environment. Subsequently, however, the model was refined to the point where rural and vacant land conversion was predicted with respect to housing type, density and value of the improvements and resident populations of the developed cells. At this time, the supply side of the market is still more differentiated than the demand side.

Partial Equilibrium Models

Empiric and Resloc are examples of partial equilibrium constructs; the Empiric model was developed by the Traffic Research Corporation and the Resloc model of residential location was developed under the auspices of the Penn Jersey Transportation Study (79, 80). Like the Chapin-Weiss-Donnelly model, both of these constructs locate increments to the population and/or labor force rather than resettling the entire population of the respective study areas during each forecast period, and both rely on the exogenous calculation of spatially referred indices of attractiveness to allocate exogenously predicted growth increments throughout the study area.

Traffic Research Corporation—The Empiric Model.—In the Empiric model, two classes of population (white and blue collar) and three classes of employment (retail and wholesale, manufacturing, and all other employment) are distributed throughout the region by subarea or zone. The index of attractiveness that was computed to reflect the growth potential of subareas during any single forecast period is in some ways similar to that used in the Chapin-Weiss-Donnelly model, and, indeed, was modified somewhat for use in the Resloc model. There are a total of five locator or causal factors influencing the growth potential of each subarea with respect to the five located variables mentioned. These locator variables are: the intensity of land use, the accessibility of each subarea to all others by automobile and also by transit facilities, a measure of the quality of water resources in each subarea, and a similar measure referring to the quality of available sewer services.

Having identified the causal factors associated with population and employment growth, the model then predicts not the absolute growth of each located variable in each subarea, but the change, during a forecasting period, of the subarea's share of the regional total of each activity. The change in each subarea's share of any activity is proportional to: (1) change in the subregional share of all other

located variables in the subregion; (2) change in the subregional share of a number of locator variables in the subregion; and (3) the value of the subregional shares of other locator variables. The equation expressing these relationships is as follows (79):

$$\Delta R_i = \sum_{J=1}^{N} a_{iJ} \Delta R_{Ji} \sum_{k=1}^{M} b_{iK} (Z_k \text{ or } \Delta Z_K) \quad \text{(A-4)}$$

in which

i or $j = 1, 2, \ldots n$: number of the located variable

$k = 1, 2, \ldots m$: number of the locator variable

ΔR_i or $_J$ = change in the level of the ith or jth located variable over the calibration or forecast time interval

ΔZ_k = change in the level of the kth variable over the forecast or calibration time interval

a_{iJ}, b_{iK} = coefficient expressing the interrelationships among located variables with each other and between located and locator variables.

The first argument in the equation simply defines the interrelationship between the subregional growth in any of the five located variables, the subregional growth in each of the located variables, and the regional growth in the particular located variable of interest. Thus, to predict the change in subregion N's share of white collar employment during a forecasting period, for example, each of the regression coefficients for zone N relating white collar employment to the other locator variables would be multiplied by the exogenously determined change in the regional level of white collar employment during the forecast period. Then, according to the second argument in the equation, each of the regression coefficients relating levels of white collar employment to levels of the independent or locator variables would be multiplied by the level of each locator variable at the beginning of the forecast period, and these products summed. When the sums of the products of each of the two arguments are added together, the value of the dependent variable, in this case the change in zone N's share of white collar employment growth, is obtained.

To predict the change in zone N's share of each of the remaining four employment classes, similar equations must be solved, each having appropriate a and b coefficients. Also, of course, an entire series of equations must be solved for each zone in the region.

A great deal of flexibility exists within the Empiric model, both with respect to calibration and to using the model for evaluating the impact of changes in public policies. In the first instance, assume an interest in calibrating the model with respect to its ability to reproduce the change in zone N's share of white collar employment from 1950-1960, using 1950 data. In the latter of the two arguments in the equation, there are opportunities to include anywhere from one to five of the independent variables. That is, the value can be estimated of the white collar dependent variable using any number of sets of locator variables. In one case densities, auto accessibilities, and transit facilities could be included: or the set plus a measure of the quality of water service in the zone could be used. Then the set could be selected which produces the highest level of explanation, or reproduces the 1960 data most accurately.

Also, by being able to use as an independent variable in the second argument of the equation the change in the level of selected locator variables during a forecast period, apart from the level of those locator variables in the beginning of the forecast period, exogenous changes in such things as quality of water and sewer services and accessibility measures can be assumed. Changes in population and employment patterns resulting from these exogenous changes can be compared to patterns of settlement obtained by running the model using only the level of the variables. There is no reason to believe, for example, that if transit facilities were extended to a particular zone or the quality of services were assumed to be materially improved the existing regression coefficients relating population growth to auto accessibility or to transit accessibility would remain constant. If, say, increasing the quality of mass transit services would influence the rate of auto ridership, surely, the auto accessibility coefficient would have to be modified.

Penn Jersey Transportation Study—The Resloc Model.—The Resloc model, as mentioned earlier, is closely related to Empiric. First, it locates a given household group to each subregion in the same proportion as the over-all regional increase in that population group. Next, it redistributes the growth increments on the basis of the relative differences in the desirabilities of the component zones in the study area. The amount of relocation from one zone to another is proportional to the differences in the desirabilities of the two zones. The desirability measures, like the regression coefficients in the Empiric model, and the attractiveness scores of the Chapin-Weiss-Donnelly model, are determined through multivariate statistical analyses and are, in fact, linear combinations of the values of the several independent variables weighted by the parameters. Included in the linear estimating equation are many of the same variables considered by the Traffic Research Corporation, such as the accessibility of each zone to the central business district, measures of regional accessibility, measures of residential densities and nonresidential development, as well as variables reflecting zonal soil conditions and elevation measures.

Since the model is recursive, population growth estimates for each five-year forecast period are distributed throughout the subregions, the results of each distribution acting to alter the desirability coefficients of the subareas, which must be recalculated for the next forecasting period.

Kain's Multiple Equation Model of Household Locations and Trip-Making Behavior.—John F. Kain's econometric model of residential location and tripmaking behavior is, of course, closely related to his conceptual model discussed earlier in this appendix (81). It is similar also to the models thus far discussed, although it does contain a few major differences in approach. Inasmuch as it assumes the starting point of the location-seeking process as the place of work of the household head, it is similar to the Lowry and Ellis models.

Kain approaches the locating process as a sequence of interrelated decisions that each household must make: (1) the worker selects a residential density at which he desires to live; (2) he decides whether to own a car; (3) he selects a mode of transportation to use for getting to and from work; and (4) the length of the journey is determined.

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Thus, the model is a series of multivariate equations dealing in sequence with each of these links in the locational chain.

The greatest difference between this and other models is that while the household head's place of work is considered the starting point of the search process, the model itself does not contain a locational algorithm to distribute households throughout the study area into an existing or proposed housing stock. Rather, it estimates densities, ownership rates, travel modes, and journey lengths for workers in each of several concentric zones in the study area in a single stage. In this respect, the linear estimating equation relating residential space consumption, the dependent variable, to socio-economic characteristics of zone of employee households and market conditions, the independent variables, is quite consistent with Harris' preference function. In fact, the series of linear estimating equations are similar to the series of simultaneous equations that comprise the Empiric model since the regression coefficients specify the relationship between characteristics of workers (and/or households), the market, and the various dependent variables such as space consumption, and length of journey to work. The regression equations are, in effect, the mode, whereas in the Empiric construct the regression coefficients are fitted independently of the simultaneous equations.

In brief, the four equations included in the model are as follows (81):

$$R_{ij} = f1 \; (F_{ij}, Y_j, P_j, S_{ij}, N_{ij}) \qquad (A\text{-}5)$$

$$A_{ij} = f2 \; (R_{ij}, Y_{ij}, B_j, S_{ij}, F_{ij}) \qquad (A\text{-}6)$$

$$M_{ij} = f3 \; (R_{ij}, Y_{ij}, B_j, S_{ij}, A_{ij}) \qquad (A\text{-}7)$$

$$T_{ij} = f4 \; (R_{ij}, Y_{ij}, P_{ij}, N_{ij}, M_{ij}) \qquad (A\text{-}8)$$

in which the endogenous variables are:

R_{ij} = the residential space consumption of the ith worker employed at the jth workplace

T_{ij} = the length of the journey to work by the ith worker at the jth workplace

A_{ij} = auto ownership of the ith worker at the jth workplace

M_{ij} = the model choice by the ith worker at the jth workplace

and the exogenous variables are:

Y_{ij} = family income of the ith worker at the jth workplace

P_j = a proxy variable for the price of residential space per unit at the jth workplace

S_{ij} = sex of the ith worker employed at the jth workplace

N_{ij} = number of family members employed in the ith family at the jth workplace

B_j = level of transit service at the jth workplace

F_{ij} = size of the ith worker's family at the jth workplace.

The preference variables used by Kain, in addition to household income, are F_{ij}, N_{ij}, and S_{ij}. According to the model, although every household desires to consume more residential space than less, there are, in addition to income constraints, other extenuating circumstances which will alter the space consumption function. First, large households spend more time in and around the home than do small families, and are either willing to pay more for a larger yard than are small families, or conversely, are willing to accept a longer journey to work than is a small family whose chief wage earner is employed in the same zone. The number of family members employed is considered by Kain as another good proxy of space preferences. Multiple wage earning families are more likely to be smaller than those having single breadwinners, spend more time away from home, and place lower value on residential space. The distribution of male and female employees in zone j is considered important because high proportions of female workers in an employment zone implies concentration of employment complexes with large numbers of clerical and secretarial workers, who are likely to be single persons or members of two-person households without children. According to Kain, for such women the positive incentive for consuming large quantities of space is weaker and, additionally, there is a positive incentive to minimize housekeeping duties, which increase with larger houses, usually situated on large lots.

Because the series of multivariate equations are derived from historical data and because, from an urban planning point of view, efforts can be made through public policy to alter historical patterns of market behavior, this present model has limitations with respect to its use as a planning model to predict the outcome of alternative public policies.

Market Demand Models

The Projectron and the residential renewal are the two market demand models included in the inventory, each representing a polar extreme with respect to generality and to the way in which housing preferences are handled (82, 83).

Projectron Model.—The Projectron model, developed by the Barrett Division of Allied Chemical Corporation for the use of builders, estimates the market demand for single-family and rental housing in metropolitan housing markets for ten-year periods into the future. Implicit in the model is a theory of the housing market that is based on the identifiable and assumed constant relationship between the propensity of households to occupy new housing and their age, income, sex, and racial characteristics. In its most basic form, the Projectron model produces population forecasts, translates growth estimates into households, aggregates like households, and applies the calculated propensities to arrive at estimates of future market demand. Because the basic formula does not vary by market area, the model can be used for any metropolitan region.

Because Projectron is a trend model, certain assumptions are made with respect to future national conditions that might affect the condition of the housing market. It assumes, for example, that there will be no world war and that the only recessions likely to occur will be of the same intensity experienced from 1945 to date. As mentioned, the primary premise of the model is that the propensity of

households to occupy new housing is reasonable constant, and that while it might not be possible to predict accurately how any single member of a household group will behave, it is possible to project the propensities of, say, 1,000 member families of a household group with sufficient accuracy.

Interestingly enough, Projectron is the only large-scale model yet produced that contains any statement or reference to accuracy requirements of the modeling effort. "We can test theory against fact," say Projectron's developers. "If such a theory results in a projected number that equals 85% or more of the actual number of units authorized for 1960-1965, then it is a useful theory to project what might happen in 1965-1970 and in 1970-1975" (*82*). Since the calibration is achieved in an aggregate sense, undifferentiated as to respective distributions by value and rental characteristics, it is not possible to assess the reliability of the projections on any finer level of detail.

For present purposes, it is important to note that the Projectron model assumes that household preferences, with respect to tenure and expenditure levels, are functions of socioeconomic characteristics, and that these preferences will remain relatively stable over time. Since the output of the model is undifferentiated with respect to spatial location of the units demanded, there is little reason to refine the independent variables any more than they are at this time. The model reflects current market conditions and is concerned only with that sector of the market that can afford to buy or rent new housing privately built. It would take a completely renovated Projectron model to evaluate the impacts on the new housing market of different public policies.

Rapkin and Grigsby—Residential Renewal of the Urban Core.—While the underlying theory of the housing market upon which Rapkin and Grigsby's model is based is not drastically different from that used in Projectron, the nature of the problem they faced was different enough to warrant serious alterations in their approach to estimating market demand. First, the model was built to deal with a particular problem, and while the underlying theory is of general applicability, the model is not readily applicable across markets. Second, Rapkin and Grigsby were asked to estimate the demand for high-rise luxury apartments in downtown Philadelphia, which brings into the analysis the locational problems absent in Projectron. Whereas in the present model the projected luxury housing might compete with other proposed or existing developments in and around the city, in the Projectron model the entire region was viewed as an entity, the distribution of the demand being unimportant. Finally, and most importantly, Rapkin and Grigsby could not possibly have adopted the assumptions of constancy with respect to the future behavior of households because the site of the projected development for which they were to estimate future market demand was an urban renewal area, thereby implying that no private luxury high-rise housing would be built on the land without some form of public assistance, and that no families would probably choose to live there if it were built without urban renewal. In short, an extrapolation of historical locational behavior would result in an estimate of a total and complete absence of demand for the contemplated housing.

The unusual approach to the analysis of housing preferences adopted by Rapkin and Grigsby can be characterized as a hand adjustment of existing patterns of demand for similar housing in other parts of the downtown area. In its simplest form, the problem was to estimate the latent demand for high-rise housing in the core and then to estimate how much of that demand might be captured as a result of public acts to renew and revitalize the core. By definition, a *ceteris paribus* situation could not be assumed to exist with respect to the physical and social environment of central Philadelphia. Since it was to be upgraded through renewal activity, it was essential that latent housing and locational preferences be estimated and these alterations translated into estimates of market demand.

It is not necessary to present a detailed description of the methods which Rapkin and Grigsby used to revise their estimates of demand based on the changes in housing preferences assumed to take place as a result of public policy inputs. What is important is the initial point at which it becomes essential to abandon the pure trend model for something much more flexible and responsive to changes in the environment, public policy, or patterns of behavior. At times, the ability to generalize or to reduce to machine-processible form is not the deciding factor in determining the usefulness of a model. In the case presented here, an extrapolation of existing trends would have been self-defeating.

SUMMARY

What can be said by way of summarizing the brief review of recent attempts to model housing and locational preferences of consumers? One observation which can be made is that the relevant scale at which the model is to be operative becomes a critical parameter in any evaluative statement made. For some purposes, for example, the Projectron model is quite adeqaute, and the underlying theme implicit within it that while it is not possible to predict what John Jones, age 26, married with two children and earning $8,000 a year will do, there is a sense of security in large numbers; so that it is possible to discuss the propensity of 1,000 John Jones' to consume housing of different types. Thus, if no attempt is being made to predict far into the future and if it is not the intent to predict the spatial distribution of housing demand within parts of housing market areas, trend analysis and an implicit approach to the handling of housing preferences appears to be a reasonable one.

Furthermore, when it is considered that relatively few builders spend very much time in analyzing the nature of the market that confronts them, the fact that a fairly simplified construct like Projectron can be made available to them is likely to add a dimension to their decision-making apparatus that has heretofore been lacking. The most serious problem that might arise with respect to such models is, of course, the possibility that client-builders will ignore the basic limitations of a trend-based model and ignore, for example, the impact of a tight situation with respect to the availability of mortgage money. The model itself was based on the assumption that there would be a general easing of the tight money situation and that the level of expenditure

for the Vietnam war would remain reasonably close to what it was in 1964. This, of course, did not prove to be the case.

When the focus shifts from the more general to the specific and the objective is to predict the locational behavior of housing consumers with respect to different neighborhood types, environmental qualities, and locational characteristics, such models as Projectron are not sufficiently refined to accomplish the task. The closest approaches to such a model are those of Harris and of Ellis. It is very difficult to speak knowledgeably at this time about the Harris model because it is in an early stage of development.

The notion of defining a preference function for a consuming population divorced from the imperfections of the marketplace so that no matter what the conditions of supply might be, or the nature of the alternative housing and locational packages might be, which permit one to assess how different consumer groups would react to alternative land use plans, is an attractive one to incorporate into a model. Yet, as significant as this development in model building is, there are serious problems that remain to be resolved at both the conceptual and empirical levels. Just how might one measure the preference structure of a consuming population in such a way that such a measurement does not become merely an identification of previous market responses under particular market conditions. With the trend problem one step removed, are the limitations of a trend-based model reduced significantly? How might one utilize, for example, a longitudinal study of housing consumers to identify their respective bids to the elements in an array of environmental bundles, some of which the consumers have never before experienced? These issues suggest that, while the Harris model must be considered a significant and ambitious move to break away from the trend-based extrapolation models of residential location, as almost invariably occurs when greater sophistication is sought, there are at once other problems which must be resolved.

The Ellis model relates different household groups to different environmental bundles in such a way that one can readily see that it still retains characteristics of a trend model. The coefficients of the desire matrix are clearly the results of previously observed patterns of market behavior. What has not been achieved as yet is simply a way in which the coefficients of the matrix might be altered without first undertaking individual studies that are exogenous to the model itself. However, this limitation is shared in the Harris construct. The parameters of the preference function are assumed to be constant over varying market conditions and over time. Such an assumption, however, has not been demonstrated to hold in fact. Nowhere is it demonstrated that preferences are in fact independent of the market supply, nor has it been demonstrated that they are independent of the market conditions under which consumers must transact their business.

It is also possible to conceive of efforts to broaden the Lowry construct so that, rather than predicting residential location on the basis of undifferentiated population groups in accordance with a modified density gradient, different occupation groups or income levels are distributed in accord with different gradients. Thus, for example, low-income or low-skilled worker-households might be distributed at higher densities close in to their place of work, with higher income families jumping over the inner concentrations of poorer workers and locating farther away from the core, etc. Indeed, just as the original model of Metropolis duplicates the observed scene, so too could this modified model conceivably duplicate the more refined pattern of residential location with which all are familiar; namely, the rich on inexpensive land on the fringe and the poor on expensive land in and near the core.

What the model could not possibly tell, however, is whether the wealthy skip past the core because it is congested and less desirable from an amenity point of view, whether they do so because of the concentration of large numbers of nonwhite families and poverty close by, or, as traditional theory has it, because they can minimize their locational costs and satisfy their space preferences by moving farther from the core, paying less for each unit of residential land they consume, and by incurring a greater journey-to-work cost. It must be concluded that a Lowry model developed further in these directions would provide no competitive advantage with respect to knowledge about the nature of the locational decisions of consumers, but instead would merely build into the existing model additional biases, a problem which is difficult enough already in this area of study.

It was mentioned earlier that the models discussed displayed a much wider range of variation with respect to methodology than with respect to underlying theory. This point is underscored by the discussion concerning the Lowry model. If the argument for refinement were to be implemented and the model expanded into a more finely grained construct, its resemblance to the two Kain models would become increasingly clear. Similarly, its kinship with the Alonso model would have been further crystalized.

It should be reasonably apparent that the level of knowledge concerning housing preferences leaves much to be desired. Precisely what it leaves to be desired, however, remains the key, but unanswered, question. It is apparent that before much more is invested in large-scale and expensive undertakings, it is timely to pose to model builders what the important questions are to which their models should be addressed. Also, the problem of the degree of generality or universality desired or demanded from these constructs must be confronted. And, in addition, the range of errors that can be tolerated in predictive or evaluative efforts must be faced. This latter point, of course, cannot be dealt with before the precise purpose of the models and the questions, policies or problems with which they are going to deal are known. These points should be reasonably clear from some of the points made previously. If the purposes are similar to those with which Projectron was designed to deal, it matters little whether or not a preference function is built into a model. What matters is the relative accuracy levels of the population and labor force predictions. The chances are that at the level of detail at which Projectron operates, the greatest source of error in the model will derive from faulty projections of populations and households of different types than in the propensities of different families to consume particular kinds of housing.

If, on the other hand, the key question being asked concerns the spatial form of urban structure and how vastly different patterns of transportation and alternative deployments of work centers will over time alter that form, perhaps the Lowry model is of great value. The moment that concern centers on variables other than residential densities, employment concentrations, accessibility measures and density constraints, however, the model of Metropolis is no longer applicable. Similarly, it would make little sense to use the Chapin-Weiss-Donnelly model to predict the nature of urban development that will take place on a very general level in broad areas of the metropolitan fringe. This would not make sense because the level of detail of the model is so great that the cost of running it and the cost of collecting sufficient amounts of data for it would not justify its use for this purpose. If, however, the purpose of the analysis is to predict development on a *micro* level and to investigate the impact on development of such publicly controlled elements as the extension of water and sewer facilities, transportation services and other community facilities, perhaps the model will be of useful service. Again, the key consideration is the question being asked of the model.

Concerning the introduction of a preference function into a model, it is worth noting that, in effect, the Chapin-Weiss-Donnelly model offers an alternative to the traditional attempts to measure housing preferences and to the current efforts to develop preference functions of resident populations. Simply put, this model has built into it a feature which may make it much more market-oriented than either the Ellis or Harris constructs. Rather than relating households to housing, it relates different densities, price ranges and kinds of residential development to appropriate market conditions. In a sense, households are located after the fact; they are one step removed in the predictive process or locational algorithm. Nowhere in the initial write-up of the model, for example, is there reference to the formulation of a preference function or the preference structure of the population of the study areas. Instead, the land development process is seen as the end product of a chain of developmental decisions, in which the attitudes and preferences of the consuming population are conceived to influence the development but are not singled out for individual attention.

Such questions are asked as: What are the priming decisions that are made that influence the resulting patterns of residential development? Such priming actions as the extension of water and sewer lines and the construction or extension of highways are seen to trigger secondary actions, among which are decisions by residential developers to carry out housing production. If concern is limited for the moment to new development, and if it is assumed that the nature of the input data required to run Chapin-Weiss-Donnelly model is more readily available than that needed to run the Harris and/or Ellis models (which should be the case because these data needs relate to more publicly available sources), the question must be asked whether there is any net gain or loss by adopting this approach to the locational problem. If, for example, the relationships between residential development and a host of other developmental

decisions or indicators (many of which are manipulable by municipal governments) can be quantified, what does this contribute to making the model a useful predictive device? While no fully satisfactory answer to such a rhetorical question can be made here, it can be reasoned that if the data are adequate, there seems little reason to doubt that coefficients, for example, for relating the extension of water and sewer facilities to residential densities, will change radically in the short or intermediate run. Similar points can be made with respect to the relationship between other kinds of priming actions and residential development. On the other hand, it must be stated that if the model is designed to test the impact of alternative public policies on the pattern of residential development, this issue is no longer applicable. Again, the key consideration is the question being asked of the model.

Concerning the introduction of the preference function into a formulation, the Chapin-Weiss-Donnelly model offers an illustration of an alternative approach. If it is assumed that households are to be related to the housing which is produced by the housing suppliers, this in effect is injecting the households into the model and asking: Now that the development has occurred, what kinds of people will locate in the different packages that were built? This presents a situation that is similar to what is faced in most other models of residential location. If the relationship between households and housing is established on the basis of observed patterns of market behavior, it is necessary to resort to a trend approach and extrapolate what has occurred in the past. The problem of separating out preferences from the complex interactions of buyers and sellers, or consumers and producers of residential packages, has not been overcome. It is not possible to use the model with confidence, therefore, in particular instances in which conditions of supply or of demand are at all unusual. But neither can the other models be used under these conditions. Thus, in one sense it becomes rather unimportant to carry the model through the final step (that is, to extend the model from predicting urban development to predicting the location of particular kinds of families), unless, of course, the consumption of vacant land continues to be of primary concern, in which case something must be known about the nature of the development before something can be said about the nature of the consuming population.

The point being made here is simply that the implicit approach to the modeling of housing and locational choice as evidenced in the Chapin-Weiss-Donnelly model appears to be as adequate a strategy as any, but appears to be simpler in both concept and application than any of the others yet developed and carried out. The problem with this model in predicting residential location is that it does not take into account residential choices made in the rest of the metropolitan complex. The problem of distributing households cannot be approached from the point of view of predicting development and simply assuming locational consequences for developed areas that will flow from the new development. Not taken into account is an existing housing stock, an existing system of circulation, a multitude of communities and neighborhoods, and great variation in

environmental quality among subsectors of the metropolitan area, to say nothing of the various kinds of market constraints that further complicate the free flow of families into and out of particular parts of the stock. So it must be concluded that the Chapin-Weiss-Donnelly model in its present form cannot be modified to go beyond its use in estimation of land consumption and include the complex reality of the already developed metropolitan complex. For, if the implications of such an extension are traced out, this would amount to reverting back to the earlier models. The result would be a trend-based model that relates, in a crude way, households to housing. The same difficulties faced in the other models of identifying all but the most easily observed and measured housing and environmental variables, such as classifying the consuming population according to the standard classification system of socio-economic status or household size, would not have been resolved. Nothing further would have been contributed to knowledge of the housing consumer or of the process of residential location itself.

In summary, then, the questions covered and central to this report are: What should a large-scale model of residential location be like? What factors should be of concern, and what should the end product be? It must be said that the report contains no startling information on the nature of underlying preferences as opposed to those revealed in the marketplace, or any other such startling findings. It does, however, point up the difficulty of attempting to learn about housing preferences from intensive surveys as opposed to market sources, and it does point up how little is generally known about attitudes and preferences themselves. However, it does serve to identify some of the important considerations that must be taken into account in modeling efforts which heretofore have been ignored.

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APPENDIX B

INTERVIEW SCHEDULE USED IN THE SURVEY

SRS-874
October 1966

NATIONAL OPINION RESEARCH CENTER
University of Chicago

(1-4)

TIME BEGAN _____ AM
PM

INTRODUCTION AT DWELLING UNIT

Hello, I'm (your name) from the National Opinion Research Center We are conducting a national survey, and I'm here to interview a (INSERT QUOTA QUALI-FICATION) Is there someone here who fits that description?

    IF NO, RECORD CALL ON SURS AND GO ON TO NEXT DU

    IF YES, FIND OUT IF THIS IS A "CONVENTIONAL" HOUSEHOLD

        IF THIS IS A "CONVENTIONAL" HOUSEHOLD

            IF THE PERSON WHO MEETS YOUR QUOTA IS THE HEAD OF THE HOUSEHOLD OR SPOUSE, PROCEED WITH INTERVIEW IF NOT, RECORD CALL ON SURS AS "NHS," AND GO ON TO NEXT DU.

        IF THIS IS NOT A "CONVENTIONAL" HOUSEHOLD

            YOU MAY INTERVIEW ANYONE IN THIS DU WHO FITS YOUR REGULAR QUOTA.

A National Survey of Housing and Environmental Preferences

Project 8-6, National Cooperative Highway Research Board
Undertaken by
Center for Urban and Regional Studies
Institute for Research in Social Science
University of North Carolina at Chapel Hill

PER-SON NUM-BER	A I'd like to list the names of all persons who live in this household First, who is the head of the household? RECORD ON LINE 01 BELOW THEN ASK And who else lives here? RE-CORD BELOW (PROBE Have we missed anyone--new babies, a roomer, or someone who lives here but is away right now? RECORD BELOW) ASK B-H FOR EACH PERSON LISTED	B ASK FOR EACH PER-SON--UNLESS OB-VIOUS What is (name's) relation to the head of the household? Head 1 Spouse . 2 Son/daughter 3 Other adult 4 Other child 5	C ASK FOR EACH PERSON-How old were you/was name) on (your/his) last birth-day?	D CODE SEX OF EACH PER-SON	E ASK FOR EACH PERSON OVER 16 YEARS--UN-LESS OBVIOUS (Are you/Is name) now married, widowed, divorced, separated, or single?						
				M	F	M	W	D	Sep	Single
01				1	2	3	4	5	6	7
02				1	2	3	4	5	6	7
03				1	2	3	4	5	6	7
04				1	2	3	4	5	6	7
05				1	2	3	4	5	6	7
06				1	2	3	4	5	6	7
07				1	2	3	4	5	6	7
08				1	2	3	4	5	6	7
09				1	2	3	4	5	6	7

F ASK FOR EACH PERSON OVER 5 What was the last year in school that (you/name) completed? RECORD CODE BELOW FOR EACH PERSON		G ASK FOR EACH PERSON 5-22 And (are you/is name) attending school full time this fall? CIRCLE CODE FOR EACH PERSON 5-22, THEN ASK Is anyone else attending school full time? CODE EACH "YES "		H Are any of these persons temporarily not living here because they are away at college, in the armed forces, or for some other reason? Yes (CIRCLE "AWAY" CODE FOR PERSON[S]) 1 No 2	
Never attended	1	Yes	No	Home	Away
Some elementary school	2				
Completed elementary school	3	1	2	3	4
Some high school	4	1	2	3	4
Completed high school	5	1	2	3	4
Some college	6	1	2	3	4
Completed college	7	1	2	3	4
Graduate or professional school	8	1	2	3	4
Don't know	9	1	2	3	4
		1	2	3	4
		1	2	3	4

I   The respondent is

Male head	1
Female spouse of head .	2
Female head	3
Adult male not head	4
Adult female not head	5
Other .	6

J. Total Number of Persons In Household _____

5. IF HEAD IS CURRENTLY WORKING

What kind of work (does head/do you) do now? ENTER BELOW

IF HEAD IS NOT CURRENTLY WORKING

What kind of work did (head/you) do on (his/your) most recent job?

OCCUPATION _____

INDUSTRY _____

6   What year did (he/you) start that job?

_____ (year)

IF HEAD OF HOUSEHOLD CURRENTLY WORKING, ASK Q's 7-9

7   Is (head's/your) present job better, about the same, or not as good as (his/your) previous job?

Better	1
About the same	2
Not as good	3
No previous job	4

8. Do you think (head's/your) chances for getting ahead in (his/your) present line of work are excellent, good, fair, or poor?

Excellent	5
Good	6
Fair	7
Poor	8
Don't know	9

9. Is (head's/your) job better, about the same, or not as good as the kind of job (head's/your) father had when (head was/you were) growing up?

Better	1
About the same	2
Not as good	3
Don't know	4

To start with, I have a few questions about the work history of the head of this household

1   Last week (was head/were you) working full time, working part time, going to school (keeping house), or what? CIRCLE CODE THAT APPLIES

Working full time (35 hours or more)	1
Working part time	2
With a job but not at work because of temporary illness, vacation, strike, etc	3
Unemployed (looking for work)	4
Retired	5
Keeping house	6
In school .	7
Other (SPECIFY AND SKIP TO Q 4) _____	8

(Retired, Keeping house, In school) >(SKIP TO Q 4)

2   (Does head/Do you) expect to stay on this job for another year or more?

Yes	1
No	2

3   Where is the place (head/you) now work(s) located? CIRCLE APPROPRIATE CODE

Central city	3
Suburbs	4
Not in metropolitan area .	5

4   Altogether, how many jobs (has head/have you) had since April 1, 1960--including jobs with different companies or employers and job changes within same company?

None . (SKIP TO Q 10) .	1
One	2
Two .	3
Three . .	4
Four	5
Five .	6
Six . .	7
Seven	8
Eight or more .	9

ASK EVERYONE

10   Is the current income of your family more than it was a year ago, about the same, or less?

More	5
About the same	6
Less	7

11   A year from now, do you expect your family income to be more, about the same, or less than it is now?

More .	1
About the same . .	2
Less .	3
Don't know .	4

12   How many other people in the family (not counting [head/you]) are usually employed on a full-time basis (39 weeks a year)?

_____

13. People have different ideas about what to spend money on   Do you agree or disagree that

	Agree	Disagree	Don't Know
A. It is more important to spend money entertaining friends than on extra things for yourself	1	2	3
B. It is more important to spend money helping your parents or close relatives than on extra things for yourself	4	5	6
C. It is more important to spend money buying things for the children than on extra things for yourself	1	2	3
D. It is more important to spend money entertaining people who can help you get ahead than on extra things for yourself	4	5	6

-7-

14 Some people would give up a lot in order to get ahead, while other people *feel* that other things are more important How about you?

		Yes	No	Don't Know
A	To get ahead, would you be willing to have (your husband in) a job that (you/he) might be less certain of holding, even though it had better opportunities?	1	2	3
B	If getting ahead meant you would have to keep quiet about your political preferences, would you be willing to do so?	4	5	6
C	If getting ahead meant you would have to move from this neighborhood, would you be willing to do so?	1	2	3
D	If getting ahead meant that you would see less of your friends, would you be willing to do this?	4	5	6
E	If getting ahead meant that you would have to see less of your close relatives, would you be willing to do so?	1	2	3

Next I have some questions about your decision to move to this (house/apartment).

15 When did you and your family move into this (house/apartment)?

1966	1
1965	2
1964	3
1963	4
1962	5
1961	6
1960	7
1959 or before	8

16 What was the main reason you moved at that time?

-9-

F How many rooms did you have in that (house/apartment)?

_____

G Did you own or rent that place?

Own . (ASK H)	1
Rent . (ASK H)	2
Other . (SKIP TO I)	3

H IF OWN OR RENT What was the cost of that place (IF RENTED per month)?

IF OWNED		IF RENTED	
Under $10,000	1	Less than $50	1
$10,000 - 12,499	2	$50 - 64	2
$12,500 - 14,999	3	$65 - 79	3
$15,000 - 17,499	4	$80 - 94	4
$17,500 - 19,999	5	$95 - 109	5
$20,000 - 24,999	6	$110 - 129	6
$25,000 - 29,999	7	$130 - 149	7
$30,000 - 34,999	8	$150 - 174	8
$35,000 or more	9	$175 or more	9

I Was it new when you moved in, or had someone lived there before you?

New	1
Lived in	2

J How many people were there in your family when you moved in?

IN _____
(number in family)

K And how many when you moved out?

OUT _____
(number in family)

EVERYONE Now a few questions about when you started to look for your present (house/apartment)

18. When you first started to look, were you originally looking for a place to rent or a place to buy?

Rent	1
Buy	2
No preference	3

-8-

17 Where did the family live right before you moved here?

Same city/town	(ASK A)	1
Other place, same metropolitan area	(GO TO B)	2
Outside metropolitan area, this state	(GO TO B)	3
Outside this state .	(GO TO B)	4
No previous home	(SKIP TO Q. 18)	5

A IF SAME CITY/TOWN Was that here in this neighborhood?

Yes . (SKIP TO C)	6
No . (SKIP TO C)	7

B IF OTHER PLACE Was that in a large city, in the suburbs, a medium-sized city, a small town, in the open country, or on a farm?

Large city		1
Suburb		2
Medium city	(ASK C)	3
Town		4
Open country		5
Farm		6

ALL BUT "NO PREVIOUS HOME"

C Did you live in a single-family house, a two-family duplex, an apartment, or what?

Single family	1
2-family	2
Apartment	3
Other (SPECIFY) _____	4

D

(1) Did you like or dislike that (house/apartment)?		(2) UNLESS SAME NEIGHBORHOOD Did you like or dislike that neighborhood?		(3) UNLESS SAME CITY/TOWN Did you like or dislike that (city/town)?	
Like (house/apartment)	1	Like neighborhood	3	Like (city/town)	5
Dislike (house/apartment)	2	Dislike neighborhood	4	Dislike (city/town)	6

E UNLESS SAME NEIGHBORHOOD Is the neighborhood you live in now nicer, about the same, or not as nice as that neighborhood?

Nicer	1
About the same	2
Not as nice	3

-10-

19. Did you prefer a new place or one that had been lived in, or didn't it make any difference to you?

New	1
Lived in	2
No difference	3

20. Do you own this (house/apartment) outright, are you buying it, are you renting, or what?

Own outright	(ASK A-D)	4
Buying	(ASK A-D)	5
Renting	(ASK E-G)	6
Other (SPECIFY AND SKIP TO Q 21) _____		7

IF OWN OR BUYING

A. About how much did you pay for this property (including lot)? CIRCLE CODE IN COLUMN A. IF REFUSED, CODE YOUR ESTIMATE IN COLUMN B

	A. Respondent's Answer	B. Interviewer's Estimate
Under $10,000	1	1
$10,000 - 12,499	2	2
$12,500 - 14,999	3	3
$15,000 - 17,499	4	4
$17,500 - 19,999	5	5
$20,000 - 24,999	6	6
$25,000 - 29,999	7	7
$30,000 - 34,999	8	8
$35,000 and over	9	9

B Was the type and availability of financing very important, somewhat important, or not important in the decision to accept this place?

Very important	5
Somewhat important	6
Not important	7

C Did you shop for financing for this place at more than one bank or savings and loan association?

Yes	8
No	9

D What was most important about financing--the interest rate, the amount of the down payment, the size of the monthly payments, or the total amount of the loan?

Interest rate		1
Amount of down payment		2
Size of monthly payment	(GO TO Q. 21)	3
Total loan		4
Don't know		5

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20 Continued

IF RENTING

E How much is your rent per month?

$ _____
  (monthly rent)

F Does the rent include heat, gas and light, water or any other utilities?
CODE ALL THAT APPLY

Heat	1
Gas	2
Light	3
Water	4
Other	5
No, none	6

G When you rented this place, did you want to have no lease, a one-year
lease, or a longer lease?

No lease	1
One-year lease	2
Longer lease	3
No preference	4

ASK EVERYONE

21. When you first started to look for this place, were you looking for a house or
an apartment, or what?

House	(ASK A)	5
Apartment	(ASK B)	6
Other (SPECIFY) _____		7
No preference		8

A IF HOUSE Were you looking for a single family detached house, a duplex,
or a row house?

Single family	1
Duplex	2
Row house	3
Other (SPECIFY) _____	4
No preference	5
Don't know	6

B IF APARTMENT Were you looking for a walk up apartment or an apartment
with an elevator?

Walk up	1
Elevator	2
No preference	3
Don't know	4

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26. Do you think you had a chance to look at most of the places that would suit
you?

Yes	1
No	2

27 How many other places did you seriously consider moving to before you selected
this place?

No others	1
One	2
Two	3
Three	4
Four	5
Five	6
Six	7
Seven	8
Eight or more	9

28. What was the most important thing that made you decide to take this place?

29 Who would you say made the final decision to move to this place?

Head and spouse	1
Head	2
Spouse of head	3
Other (SPECIFY) _____	4

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22 Did you try to get information about available housing from   READ EACH ITEM
AND CIRCLE APPROPRIATE CODE

	Available Housing	
	Yes	No
A real estate or rental agent?	1	2
Personal friends, relatives, or people at work?	3	4
A newspaper?	5	6
The radio?	7	8
Television?	4	5
By driving around looking?	6	7
In any other way? (SPECIFY) _____	8	9

23. How did you first find out about this place? CODE FIRST SOURCE

A real estate or rental agent	1
Personal friends, relatives, or people at work	2
A newspaper	3
The radio	4
Television	5
By driving around looking	6
In some other way (SPECIFY) _____	7

24. When you were looking for this place to live, who did most of the looking?
CIRCLE ONLY ONE CODE

Head and spouse	1
Head	2
Spouse of head	3
Relative (SPECIFY) _____	4
Friends	5
Real estate or rental agents	6
People at work	7
Other (SPECIFY) _____	8

25 About how many other places did you look at, at least from the outside, before
you selected this place?

_____
  (number)

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30 In the final decision to take this place, was the (house/apartment) itself very
important, somewhat important, or not important? REPEAT FOR B-E.

		Very Important	Somewhat Important	Not Important
A	(House/apartment)	7	8	9
B	(Lot/grounds)	1	2	3
C	The immediate neighbors	4	5	6
D	General location	7	8	9
E	Cost of the place	1	2	3

31. How far is this place from your previous place--about how many miles?

Less than a mile	1
From one to five miles	2
From six to ten miles	3
More than ten miles, but in metropolitan area	4
Moved from outside metropolitan area	5
No previous home	6

32. Taking all things into consideration, are you satisfied or dissatisfied with
this (house/apartment)?

Satisfied	1
Dissatisfied	2

33.

			D Do you need more, need less, or is this satisfactory?		
			Need More	Need Less	Satisfactory
A	How many rooms are there in this (house/apartment)? ___ (rooms)	(ASK D)	1	2	3
B	How many bedrooms? ___ (bedrooms)	(ASK D)	4	5	6
C	How many baths? ___ (baths)	(ASK D)	7	8	9

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34

			E	
			Is it important for you to have a (room) or doesn't it make any difference to you?	
			Important	No Difference
A	Do you have a separate dining room?			
	Yes (ASK E) 1		3	4
	No (ASK E) 2			
B	Do you have a family room or recreation room?			
	Yes (ASK E) 5		7	8
	No (ASK E) 6			
C	Do you have a garage or carport?			
	Yes (ASK E) 1		3	4
	No (ASK E) 2			
D	Do you have a basement?			
	Yes (ASK E) 5		7	8
	No (ASK E) 6			

35 Please tell me whether you are satisfied or dissatisfied with each of these things in this (house/apartment). Are you satisfied or dissatisfied with .

		Satisfied	Dissatisfied	Don't Know
A	The way the rooms are arranged?	1	2	3
B	The heating equipment?	4	5	6
C	The size of the rooms?	7	8	9
D	The inside appearance of this place?	1	2	3
E	The age of this place?	4	5	6
F	The outside appearance of this place?	7	8	9
G	The size of the yard or grounds?	1	2	3
H	The storage space?	4	5	6
I	The amount of privacy you have?	7	8	9

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36 Next I'd like to know about how convenient this location is for you

	A	B				C			
	About how many minutes does it take you to get from here to ___ RECORD NUMBER OF MINUTES THEN ASK B&C RF PLACE FOR ITEMS b-j	What kind of transportation do you usually (would you) use to go there?				If you were to move, would you rather be closer, about the same, farther away, or doesn't it make any difference?			
		Walk	Own Car	Public Transportation	Other	Closer	About the Same	Farther	Doesn't Matter
a	The place where you do most of your grocery shopping? (min)	1	2	3	4	5	6	7	8
b	The home of your best friend? (min)	1	2	3	4	5	6	7	8
c	An elementary school? (min)	1	2	3	4	5	6	7	8
d	Downtown? (min)	1	2	3	4	5	6	7	8
e	A shopping center? (min)	1	2	3	4	5	6	7	8
f	A park or playground? (min)	1	2	3	4	5	6	7	8
g	Your doctor's office? (min)	1	2	3	4	5	6	7	8
h	A hospital or clinic? (min)	1	2	3	4	5	6	7	8
i	IF HEAD CURRENTLY WORKING (Head's/Your) place of work? (min)	1	2	3	4	5	6	7	8
j	Do you sometimes attend church? Yes (ASK A-C) 1 No (GO TO Q 37) 2 (min)	1	2	3	4	5	6	7	8

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37 Since you have been living in this place, has the family ever seriously discussed moving?

Yes 6

No (SKIP TO Q 40) 7

38 Did the family actually go out and look for another place to live?

Yes 8

No . 9

39 Which of the reasons on this card comes closest to the main reason you decided not to move? HAND RESPONDENT CARD 1.

Couldn't find a place in our price range in a location as convenient as this one 1

Couldn't find a place in our price range that was a better size for us than this place . . . 2

Couldn't find a place in our price range that was more pleasant than this place 3

Couldn't find a place in our price range with all of the special features of this place . 4

Couldn't find a place with enough advantages to justify the expense and difficulty of moving . . 5

Circumstances changed so that we no longer considered moving 6

None of these 7

40. Taking all things into consideration, are you satisfied or dissatisfied with this neighborhood?

Satisfied . . . 1

Dissatisfied . . 2

Don't know 3

41 Would you please tell me how satisfied or dissatisfied you are with the following things about this neighborhood? Are you entirely satisfied, fairly satisfied, or dissatisfied with the CIRCLE ONE CODE ON EACH LINE.

		Entirely Satisfied	Fairly Satisfied	Dissatisfied	Don't Know
A	Privacy of the neighborhood?	1	2	3	4
B	Quietness of the neighborhood?	5	6	7	8
C	Friendliness of neighbors?	1	2	3	4

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41. Continued Are you entirely satisfied, fairly satisfied, or dissatisfied with the CIRCLE ONE CODE ON EACH LINE.

		Entirely Satisfied	Fairly Satisfied	Dissatisfied	Don't Know
D	Reputation of the neighborhood?	5	6	7	8
E	Kind of people who live in the neighborhood?	1	2	3	4
F	Cleanliness of the neighborhood?	5	6	7	8
G	Condition of the streets?	1	2	3	4
H	Condition of the houses and apartments?	5	6	7	8
I	Spaciousness of yards (or grounds)?	1	2	3	4
J	Amount of traffic on the street?	5	6	7	8
K	Quality of education in this school district?	1	2	3	4
L	Water system?	5	6	7	8
M	Sewage disposal?	1	2	3	4
N	Fire protection?	5	6	7	8
O	Police protection?	1	2	3	4
P	Number of parks or other open spaces?	5	6	7	8
Q	Ease of getting to other places from here?	1	2	3	4

42. People have different opinions concerning how important one's neighborhood is for getting ahead in life. Do you agree or disagree with the following statements?

		Agree	Disagree	Don't Know
A	Living in the right kind of neighborhood helps you get a better job	1	2	3
B	By living in the right kind of neighborhood you get to know people who can help you get ahead.	4	5	6
C	In the long run, living in the right kind of neighborhood helps you make more money	7	8	9
D	The neighborhood in which a person lives should show how much money he has.	1	2	3
E	If a man has an important job he should be very careful about the kind of neighborhood he lives in	4	5	6

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43 Next, I have some statements about the city as compared to the suburbs
    Please tell me whether you agree or disagree with each statement.

		Agree	Disagree	Don't Know
A.	It is better to live in the suburbs than the city because there is less delinquency there.	1	2	3
B	Living in the suburbs gives you more freedom than living in the city.	4	5	6
C.	The suburbs are more attractive than the city.	7	8	9
D	It is worthwhile to live in a suburban area even though the breadwinner of the family has a long drive to work each day.	1	2	3
E	The suburbs are better for raising children than the city.	4	5	6
F	In the suburbs people are friendlier than they are in the city.	7	8	9

44. Have you ever lived in a neighborhood where many of the people were different
     from you in respect to income?

                                             Yes 1

                                             No   2

45. Have you ever lived in a neighborhood where many of the people were different
     from you in respect to race or color?

                                             Yes .   .   3

                                             No   .   . . 4

Now, we would like to ask you a few questions about problems that face people in
some neighborhoods and metropolitan areas

46. Please tell me whether or not you think they are problems here READ EACH
     ITEM AND ASK A AND B BEFORE GOING ON TO THE NEXT ITEM What about   .

	A. Is that a very serious, fairly serious, or not a serious problem in this metropolitan area?				B. And in this neighborhood-- is it a very serious, fairly serious, or not a serious problem in the neighborhood?			
	Very Serious	Fairly Serious	Not Serious	Don't Know	Very Serious	Fairly Serious	Not Serious	Don't Know
a. Unemployment?	1	2	3	4	5	6	7	8
b Air pollution?	1	2	3	4	5	6	7	8
c. Traffic?	1	2	3	4	5	6	7	8
d. Airplane noise?	1	2	3	4	5	6	7	8
e. Water pollution?	1	2	3	4	5	6	7	8
f. Crime and violence in the streets?	1	2	3	4	5	6	7	8
g. Poverty?	1	2	3	4	5	6	7	8
h. Availability of housing?	1	2	3	4	5	6	7	8
i. Quality of local schools?	1	2	3	4	5	6	7	8
j Public transportation?	1	2	3	4	5	6	7	8
k. Availability of recreation facilities?	1	2	3	4	5	6	7	8
l. Property taxes?	1	2	3	4	5	6	7	8
m Race relations?	1	2	3	4	5	6	7	8
n. Slums and run-down housing?	1	2	3	4	5	6	7	8

47. If you were to move again, would you prefer a place all on one floor, on two or
     more floors, or a split level?

                                   One floor 1
                                   Two floors   .   2
                                   Split level . . .   3
                                   No preference   4

48. What kind of architectural style would you prefer--modern or traditional?

                                   Modern 5

                                   Traditional 6

                                   No preference   7

49 Would you prefer a new place, one which is fairly new but has been lived in
    and developed, or an older place?

                                   New 1

                                   Fairly new but has been
                                       lived in 2

                                   Older place   . .   3

                                   No preference   .   . 4

50. Which would you prefer--a well established neighborhood or a new neighborhood?

                                   Well established   . 5

                                   New   . . 6

                                   No preference   . . . 7

51 Would you prefer the number of children in the neighborhood to be few or many?

                                   Few 1

                                   Many 2

                                   No preference   . 3

52 (If you were to move to a house) would you prefer a small or a large lot?

                                   Small   4

                                   Large .   . .   5

                                   No preference 6

53. How important would the following things be to you in choosing a neighborhood
     to live in?

		Very Important	Fairly Important	Not Important	Don't Know
A	Would the school system be very important, fairly important, or not important?	1	2	3	4
B	The general appearance of the street, grounds, and buildings in the area	5	6	7	8
C	The availability of public services such as water, sewer, police, and fire protection	1	2	3	4
D	The recreation facilities in the neighborhood for children	5	6	7	8
E	Having only light traffic on the streets in the area	1	2	3	4
F	The reputation of the neighborhood regarding delinquency, crime, and other kinds of trouble	5	6	7	8
G	Having neighbors with about the same education and interests as you?	1	2	3	4
H	Having friendly neighbors	5	6	7	8

54. If two places to live were equal in price, which would you choose in each of
     the following pairs?

A.	A very good place in a less desirable neighborhood 1	OR	A very good neighborhood but a less desirable place 2	DK . . 3
B.	A very good neighborhood but located so that it would be difficult for you to travel to other parts of town . . 4	OR	Very easy for you to travel to other parts of town but less desirable local neighborhood 5	DK . . 6
C	A very nice outside appearance but less desirable inside appearance . . . 7	OR	Very nice appearance inside but a less desirable outside appearance . . 8	DK . 9
D	A neighborhood with better than average school system but higher than average tax rate . . 1	OR	A neighborhood with lower than average tax rate but worse than average school system 2	DK . 3

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ASK Q. 55 ABOUT PREVIOUS DAY.
CIRCLE CODE FOR DAY DESCRIBED.

Monday . .	1
Tuesday .	2
Wednesday . .	3
Thursday . .	4
Friday . . .	5
Saturday . .	6
Sunday . .	7

55. I would like you to recall for me, in a general way, all of the things which
you did yesterday (Saturday/Sunday) I don't want to know all of the details,
just the major things which you happened to do--things like going to work, or
shopping at a local store, or visiting with a neighbor, watching TV, reading,
going out for refreshments, and so on

I am particularly interested in things which you did outside of your home, and
I'll ask you what you did and when you did it

Let's begin with when you got up in the morning What time was that? ENTER
ON TOP LINE OF TABLE Then what did you do? UNLESS OBVIOUS, ASK: Was that
at home or away from home?

FILL IN TABLE OF THE DAY'S ACTIVITIES

A RECORD APPROXIMATE TIME EACH ACTIVITY BEGAN IN COLUMN A

B RECORD ACTIVITY MENTIONED IN COLUMN B

C CODE "AT HOME" OR "AWAY FROM HOME" IN COLUMN C FOR EACH

END WITH TIME RESPONDENT WENT TO BED

A TIME BEGAN	B ACTIVITY	C LOCATION	
		Home . Away from home .	1 2
		Home Away from home	3 4
		Home Away from home .	5 6
		Home . . Away from home .	7 8

A TIME BEGAN	B ACTIVITY	C LOCATION	
		Home Away from home	1 2
		Home Away from home	3 4
		Home Away from home	5 6
		Home . Away from home	7 8
		Home Away from home	1 2
		Home Away from home	3 4
		Home Away from home	5 6
		Home Away from home	7 8
		Home Away from home	1 2
		Home Away from home	3 4
		Home Away from home	5 6
		Home Away from home	7 8
		Home Away from home	1 2
		Home Away from home	3 4
		Home Away from home	5 6
		Home . Away from home	7 8
		Home Away from home	1 2

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56

	A How often do you visit with any of your (neigh- bors) either in your home or in theirs--every day, at least once a week, one to three times a month, or less than once a month? RECORD ANSWER FOR "neighbors", THEN ASK A AND B FOR FRIENDS, CO-WORKERS, AND RELATIVES					B Do any of these ( ) live in the neigh- borhood?	
	Daily	At Least Once a Week	1-3 Times a Month	Less than Once a Month	Less than Once a Year (Never Volunteered)	Yes	No
Neighbors	1	2	3	4	5	-	-
Friends	1	2	3	4	5	8	9
Co-workers	1	2	3	4	5	6	7
Relatives	1	2	3	4	5	8	9

57 Do you agree or disagree that

		Agree	Disagree	Don't Know
A	It is a good idea to loan household equipment, garden tools, or other things to neighbors	1	2	3
B	Neighbors should frequently entertain each other in their homes	4	5	6
C	Neighbors should feel free to drop in on you whenever they want	1	2	3
D	One should always become very friendly with neighbors	4	5	6
E	People should always get together with relatives on holidays and other important special occasions	1	2	3
F	Children should be included in all of the activities of a family	4	5	6
G	A father should take care of the children when the mother wants some time to herself	1	2	3
H	Raising children is the most important thing that a married woman can do	4	5	6

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58 How many cars does the family have available for use? INCLUDE COMPANY CARS
AND PICK-UP TRUCKS

None	1
One	2
Two	3
Three or more	4

59 A Do you have local bus transportation within walking distance?

Yes	(ASK B & C)	1
No	(ASK B) .	2

B Is there a streetcar, subway, or train within walking distance?

Yes	(ASK C)	3
No	(ASK D IF NO TO BOTH A & B)	4

C IF YES TO A OR B Does anyone in the family use the (bus/streetcar,
etc) regularly?

Yes .		5
No		6

D IF NO TO A AND B Would you use public transportation if it were
available?

Yes	7
No .	8

Do you plan to move from this place within the next year?

Yes	(ASK A) .	1
No		2
Don't know .		3

A IF YES Do you plan to buy or rent?

Buy	4
Rent .	5
Don't know	6

61 If you had your choice would you stay or move from this place?

Move	7
Stay	8
Don't know	9

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Now I have a few questions about your general health

62 Do you often, sometimes, rarely, or never

		Often	Sometimes	Rarely	Never
A	Feel weak all over	1	2	3	4
B	Feel so restless that you can't sit long in a chair	5	6	7	8
C	Have trouble making up your mind	1	2	3	4
D	Worry	5	6	7	8
E	Have trouble getting going	1	2	3	4
F	Feel you have to be on guard when you're with other people	5	6	7	8
G	Feel people are against you	1	2	3	4
H	Feel low in spirits	5	6	7	8
I	Have personal worries that get you down physically	1	2	3	4

I have just a few more questions and we'll be finished

63

		A. Which of the groups on this card (HAND RESPONDENT CARD 2) includes your total family income during the last 12 months-- before taxes? Tell me the letter CIRCLE APPROPRIATE CODE	B. Which of the groups includes your income when you first moved to this place? CIRCLE CODE	C. IF HEAD RETIRED Which of these groups includes your average annual family income in the last five years before (head/you) retired? CIRCLE CODE
Yearly Amount	Let-ter			
Under $3,000	A	1	1	1
$3,000-3,999	B	2	2	2
$4,000-5,249	C	3	3	3
$5,250-6,749	D	4	4	4
$6,750-8,749	E	5	5	5
$8,750-12,499	F	6	6	6
$12,500-16,999	G	7	7	7
$17,000-22,500	H	8	8	8
Over $22,500	I	9	9	9

IF A OR B REFUSED, ENTER CODE FOR YOUR ESTIMATE HERE   A EST   B EST

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64 We may want to talk to you again next year to find out whether you are still living in this (house/apartment) or whether you have moved. I'd like to record your full name, address, and telephone number so that we can contact you then

RESPONDENT'S NAME _____

STREET ADDRESS _____

CITY AND STATE _____

TELEPHONE NUMBER _____

65. And will you give me the name, address, and phone number of a friend or relative in another household who could help us locate you in case you do move?

NAME _____

STREET ADDRESS _____

CITY AND STATE _____

TELEPHONE NUMBER _____

Is that a friend or a relative?

Friend	1
Relative	2

Thank you very much   You've been very helpful

TIME ENDED _____	AM
	PM

FILL OUT A-S ON FOLLOWING PAGES.

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FILL IN A-S IMMEDIATELY AFTER LEAVING RESPONDENT'S HOME

A The location of this housing unit is in

Central city	1
Suburb	2

B Code the type of dwelling unit in which the respondent lives in Column A below, and the predominant type on the respondent's street in Column B

	A Home	B Street
Single family, detached house	1	1
Duplex	2	2
Row house	3	3
Walk-up apartment building	4	4
Elevator apartment building	5	5
House trailer	6	6
Store with dwelling above or behind	7	7
House converted to rooms	8	8
Other (SPECIFY) _____	9	9

C Describe the appearance of the exterior of the respondent's home, and of the street in general

	A Home	B Street
Very attractive	1	5
Reasonably pleasant	2	6
Average	3	7
Unattractive	4	8
Very unattractive	5	9

D Describe the state of repair of the respondent's home, and of the houses on the street in general

	A Home	B Street
New	1	1
Very well maintained	2	2
Average	3	3
Deteriorating	4	4
Needs extensive repairs	5	5
Beyond repair	6	6

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E. Is the street on which the respondent lives

Mainly residential	1
Mainly residential and commercial	2
Mixed residential and industrial	3
Mixed commercial and industrial	4

F Does the street on which the respondent lives appear to be a through street with commercial traffic or a side street with mainly local traffic?

Through street	1
Side street	2
Other (SPECIFY) _____	3

G Is the neighborhood where the respondent lives

Very quiet	4
Average amount of noise	5
Noisy	6

H How big is the respondent's yard and the other yards on the street?

	Respondent's Yard	Other Yards on Street
Spacious	1	5
Average size	2	6
Small	3	7
Does not apply--apartments	4	8

I Would you describe the inside appearance of the respondent's home as

Clean and very attractive in appearance	1
Clean but only average in appearance	2
Untidy, but not dirty	3
Dirty	4

J Cooperativeness of respondent

Very cooperative	5
Somewhat cooperative	6
Not cooperative	7

K Interest of respondent

Very interested	1
Somewhat interested	2
Uninterested	3

L IF THERE WAS ANYTHING UNUSUAL ABOUT THE INTERVIEW SITUATION WHICH YOU THINK AFFECTED THE RESPONDENT'S ANSWERS, TELL US ABOUT IT HERE

Nothing unusual (GO TO BACK PAGE)	4
Something unusual (DESCRIBE ON NEXT PAGE, THEN GO TO BACK PAGE)	5

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M. RESPONDENT'S RACE.	Q. PSU NUMBER:
White . . 1	
Nonwhite . 2	
	R. SU NUMBER:
N. RESPONDENT'S SEX	
Male . . 3	
Female 4	S INTERVIEWER'S SIGNATURE:
O TOTAL LENGTH OF INTERVIEW	
_____ minutes	
P. DATE OF INTERVIEW	
_____, 1966	
(month) (day)	

FOR OFFICE USE ONLY

SMSA SIZE CODE _____

CENSUS TRACT NUMBER _____

CENSUS BLOCK (OR
E D NUMBER) _____

APPENDIX C

STANDARD METROPOLITAN STATISTICAL AREAS INCLUDED IN THE SURVEY

Birmingham, Alabama
Phoenix, Arizona
Bakersfield, California
Los Angeles, California
San Francisco, California
San Jose, California
Waterbury, Connecticut
Washington, D. C.
Jacksonville, Florida
Tampa, Florida
Atlanta, Georgia
Chicago, Illinois
Gary, Indiana
Indianapolis, Indiana
South Bend, Indiana

Baltimore, Maryland
Boston, Massachusetts
Detroit, Michigan
Duluth, Minnesota
Minneapolis, Minnesota
St. Louis, Missouri
Manchester, New Hampshire
Newark, New Jersey
Paterson-Clifton, Passaic, N.J.
Albany, New York
Buffalo, New York
New York, New York
Utica, New York
Charlotte, North Carolina

Akron, Ohio
Cleveland, Ohio
Hamilton-Middletown, Ohio
Philadelphia, Pennsylvania
Pittsburgh, Pennsylvania
Memphis, Tennessee
Amarillo, Texas
Fort Worth, Texas
Houston, Texas
Tyler, Texas
Waco, Texas
Salt Lake City, Utah
Seattle, Washington
Milwaukee, Wisconsin

Published reports of the

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

are available from:

Highway Research Board
National Academy of Sciences
2101 Constitution Avenue
Washington, D.C. 20418

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* Highway Research Board Special Report 80

THE NATIONAL ACADEMY OF SCIENCES is a private, honorary organization of more than 700 scientists and engineers elected on the basis of outstanding contributions to knowledge. Established by a Congressional Act of Incorporation signed by President Abraham Lincoln on March 3, 1863, and supported by private and public funds, the Academy works to further science and its use for the general welfare by bringing together the most qualified individuals to deal with scientific and technological problems of broad significance.

Under the terms of its Congressional charter, the Academy is also called upon to act as an official—yet independent—adviser to the Federal Government in any matter of science and technology. This provision accounts for the close ties that have always existed between the Academy and the Government, although the Academy is not a governmental agency and its activities are not limited to those on behalf of the Government.

THE NATIONAL ACADEMY OF ENGINEERING was established on December 5, 1964. On that date the Council of the National Academy of Sciences, under the authority of its Act of Incorporation, adopted Articles of Organization bringing the National Academy of Engineering into being, independent and autonomous in its organization and the election of its members, and closely coordinated with the National Academy of Sciences in its advisory activities. The two Academies join in the furtherance of science and engineering and share the responsibility of advising the Federal Government, upon request, on any subject of science or technology.

THE NATIONAL RESEARCH COUNCIL was organized as an agency of the National Academy of Sciences in 1916, at the request of President Wilson, to enable the broad community of U. S. scientists and engineers to associate their efforts with the limited membership of the Academy in service to science and the nation. Its members, who receive their appointments from the President of the National Academy of Sciences, are drawn from academic, industrial and government organizations throughout the country. The National Research Council serves both Academies in the discharge of their responsibilities.

Supported by private and public contributions, grants, and contracts, and voluntary contributions of time and effort by several thousand of the nation's leading scientists and engineers, the Academies and their Research Council thus work to serve the national interest, to foster the sound development of science and engineering, and to promote their effective application for the benefit of society.

THE DIVISION OF ENGINEERING is one of the eight major Divisions into which the National Research Council is organized for the conduct of its work. Its membership includes representatives of the nation's leading technical societies as well as a number of members-at-large. Its Chairman is appointed by the Council of the Academy of Sciences upon nomination by the Council of the Academy of Engineering.

THE HIGHWAY RESEARCH BOARD, organized November 11, 1920, as an agency of the Division of Engineering, is a cooperative organization of the highway technologists of America operating under the auspices of the National Research Council and with the support of the several highway departments, the Bureau of Public Roads, and many other organizations interested in the development of transportation. The purpose of the Board is to advance knowledge concerning the nature and performance of transportation systems, through the stimulation of research and dissemination of information derived therefrom.