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In order to develop a research design and methodological tools for the study of housing and related urban problems, a project was conducted by the Center for Housing and Environmental Studies at Cornell University.
A pilot study was undertaken in 1966 in Puerto Rico to develop the research design and methodology. The inception and testing of that design is presented in this report, followed by a broad survey of methods of survey research and their applicability to the conduct of sample surveys in the urban areas of developing nations. Also described are: Methodology and techniques for measuring housing characteristics and quality; Socioeconomic and demographic characteristics of families; Attitudes, aspirations, and value orientations with respect to housing; and, Two means by which a housing situation is improved: Residential mobility and the improvement of owner-occupied housing. The report also discusses the methodology of exploring two major components of the urbanization process -- internal migration and social assimilation. Findings from the San Juan data are used to demonstrate the applicability of theory of techniques.

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RESEARCH METHODS FOR HOUSING AND URBANIZATION STUDIES IN DEVELOPING COUNTRIES

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RESEARCH METHODS

FOR

HOUSING AND URBANIZATION STUDIES

IN

DEVELOPING COUNTRIES

by

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PREFACE

The need for additional knowledge concerning urbanization and housing problems in cities in developing countries is widely recognized. It is also generally recognized that these problems cut across several disciplines--economics,demography, general sociology, political sociology, health and perhaps others. In 1965 the Agency for International Development contracted with Cornell University to develop a methodology which could have widespread application in the kinds of studies mentioned above. It was felt that there had been so little experience with this kind of effort on a multi-disciplinary basis that a pilot study should be undertaken which would test the research design which was being developed. Because most of the participants in the study were Latin American specialists, rather than specialists in other regions, it was agreed to select a city for the pilot study in that region of the world.

The research staff involved in the San Juan study is listed separately. Our thanks go to all of the individuals listed for the work they performed in providing a basis for this report, especially Professor Tom E. Davis, co-principal investigator. We want to especially thank Professor Glenn H. Beyer, who carried much of the responsibility for the administration of the contract and accordingly the final form of this report. We also want to thank certain representatives of the Agency for International Development in Washington who provided invaluable assistance to us. Dr. Philip Sperling was extremely help-

ful in suggesting an initial format for this report and Curtis H. Barker was helpful at different stages from the time of the negotiation of the contract up until final details concerning this report had been agreed upon.

In order to make this "research methods" report as broadly useful as possible, we have used in more than the normal manner material from or excerpts of publications and reports written by the staff of the project which were believed pertinent.

Acknowledgement is made of work by Mrs. June Kopald and Robert Merrill, who were not members of the project staff but who prepared research papers on topics related to the report. The work of Mrs. Rose Sanford, Mrs. Joyce Breese, Miss Louise Dassance, and Mrs. Sherry Karaim in typing the manuscript of this provisional report is also gratefully acknowledged.

It is hoped that this volume in its final form will not only provide a methodology for studying many of the housing and urbanization problems which are so prominent in so many cities in the less developed countries of the world, but that it will also provide impetus for more of these studies to be undertaken on a sound and comprehensive basis.

Margaret E. Woods

Earl W. Morris

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SECTION I. A DESIGN FOR RESEARCH ON URBAN HOUSING IN DEVELOPING COUNTRIES: AN OVERVIEW

In the summer of 1966, a pilot study of urban housing in Latin America was undertaken in San Juan, Puerto Rico to design and test methodological tools for the conduct of housing research in the urban areas of Latin America, the findings of which would provide the basis for the formulation of sound and effective urban housing programs.

The urban housing problem is usually formulated in terms of supply. The urban centers of Latin America, as of other developing countries, are growing rapidly as a result of high urban birthrates and the continuing internal migration to cities. The young population structure means rapid family formation and a continuing pressure on inadequate supplies of housing. Extensive community development programs are and will be needed, first because of the sheer quantity of housing required; second, to provide the urban facilities and services that must accompany housing; and, third, to formulate plans that would be able to incorporate the urban growth which is in progress. Regardless of who assumes the cost of providing housing and its related services, they represent a "levy against national resources that cannot be ignored by national planners."[1]

The purpose of the pilot study was to develop a research design and methodological tools for the study, by survey research techniques, of housing and related urban problems. Specifically, social, economic,

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[1] David Owen, "Urbanization in the Developing World," in Brian J. L. Berry and Jack Meltzer, Goals for Urban America, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967, p. 32.

demographic, and political aspects of urban housing were studied.

The design was to be tested in the field by a sample survey in a Latin American city. The field survey, in addition, would demonstrate the feasibility of examining a specific research problem by sample survey techniques in Latin America and provide the opportunity to test and develop a field organization that would integrate United States and host country experts into the research process.

The analysis of the data from the proposed survey was to center around: (1) the determination of concepts most relevant for the study in terms of the research problem under investigation; (2) the selection of items that should be included in subsequent investigations; (3) evaluation of the methodological procedures as appropriate for further use; and (4) determination of the broad implications of the major theoretical and substantive findings of the pilot study.

The broad overview of the urban housing situation in developing countries, and specifically in Latin America, held by the researchers was that housing could not be studied as an entity in itself, in isolation from its urban and national contexts and the processes of urbanization. Rather, economic, demographic, health, political, and social factors were directly related to housing and the strength of the relationships between these factors and an urban housing situation must be known if realistic urban housing policies were to be created.

Certain conceptions of the research to be undertaken, derived from the professional experience of the staff in Latin America and other developing countries, formed the basis of the design. One was that the social (as against economic and physical) aspects of housing programs

had been inadequately studied heretofore either from a research or a program evaluation point of view. At the same time, housing is a social (as well as an economic) problem that could not be neglected in the process of development. The research should, therefore, focus on urban housing for families, with all of the social aspects implied therein, and not, for example, on the provision of urban housing in terms of number of certain types of physical structures. The second conception of the problem was that the implications of differences in housing for families should be studied not from the standpoint of a single academic interest but rather by observing facets of living conditions as they exert cross pressures on families and influence their housing choices.

The primary concern of housing agencies and the source of the most serious and difficult to cope with aspects of the housing situation in developing countries is the multitude of families living in urban areas whose ability to pay for housing is too low to stimulate a normal response from private builders. While the housing situation is critical because of a combination of factors affecting supply, including an underdeveloped building industry, the concern of the research was with the demand side of housing, about which little is known. To be explored was the question of whether there were significant differences in the behavior and attitudes toward housing of lower-income families in different neighborhoods or whether there was, for example, a culture of poverty kind of situation that would preclude any solution beyond either waiting for higher levels of economic development or massive public assistance. In other words, it would be important to demonstrate that the level of social and cultural organization is or is not an obstacle to rapid urban development.

The basic data were to be collected directly from the families in various urban neighborhood types who were or who could be expected to be affected in different ways by specific kinds of housing programs. The information available on the urban housing situations among lower-income groups, however, indicated strongly that their present housing was an improvised answer to the shelter problem and not based upon freely made choices among acceptable alternatives. Their housing needs, therefore, would have to be defined in terms of their expectations. In addition to the standard objective data on housing and family characteristics to be collected, data on the subjective factors of attitudes, preferences, value orientations, and motivations would also be needed.

It was assumed from the models in the literature and the judgment of the investigators based on previous experience that the lower-income groups in the cities were likely to contain a large proportion who were relative newcomers to urban areas or, at most, one generation removed from rural backgrounds that were, in varying degrees, traditionally oriented. The question to be explored was how far the groups had become involved in the process of urbanization; that is, the level of their assimilation into an urban way of life, and how effectively they were coping with their changed circumstances; the relationship between factors of social change and the present and planned housing of families; and, perhaps most important, the implications of the social forces operating in the neighborhoods for future changes in behavior, attitudes, and aspirations related to housing specifically and to

urbanization in general.

The consensus of the Cornell group was that a comparison of a sample of families living in more or less homogeneous types of housing situated in neighborhoods with distinctively different characteristics would be the most effective method of determining and studying the relationship between housing and the actions, attitudes, and aspirations of families involved to a greater or less extent in the changeover to an urban way of life. Housing-neighborhood area, thus, determined the main outline of the research design. (The general scheme of specific variables set up for the analytic framework is shown in an Appendix.)

The housing-neighborhood areas to be selected were to enable a contextual kind of analysis within representative types of housing-neighborhoods found in urban areas on a national, and, insofar as possible, international basis. The sampling of neighborhoods was essentially purposive in the sense that specific neighborhoods were chosen because they approximated types of areas which were thought to play important roles in urban development. Five types of housing neighborhoods were considered:

Shantytowns of temporary squatter shacks on urban peripheries.

Shantytowns of temporary squatter shacks in urban centers. Both of these types are prime sources of acute concern, both public and professional, as manifestations of overwhelming urban growth.

Public housing projects, as they have represented one

of the major instruments for treating housing deficits.

Standard older, private housing for lower-income groups, in densely congested areas, and within central cities.

Standard private, suburban, lower-middle-class housing.

In San Juan, Puerto Rico the site selected for the pilot study, there were no peripheral squatter slums. Thus, any significant differences between these two neighborhood types could not be determined in the pilot study.

The sampling of households within neighborhoods was based on systematic random sampling. The primary respondents were selected on basis of two criteria: the coverage desired for a topic, as broad or deep, and likelihood of exposure to the factor being measured. Thus, primary respondents for data on housing characteristics and household composition were the wives of the household heads (or themselves heads of households), since the broadest possible coverage was desired for these items. Women were, of course, primary respondents for fertility and other family questions. Men were the primary respondents for the political participation and much of the data on attitudes, motivations, aspirations, and value orientations related to housing, as more likely to have had wider urban experience than their wives. A sample of fathers and sons, selected from a pool of the interviewed families who met the criteria of (a) husband and son both living at home and (for sons) (b) being the oldest son between the ages of 14 and 20 living at home, was used for an in-depth exploration of attitudes toward economic, political, and social institutions and

to provide intergenerational comparisons on social and occupational mobility, education, and attitude change. Both husbands and wives were respondents for topics where information from both was considered valuable: selected housing and neighborhood questions, family decision-making, interaction patterns, and fertility and migration. Other data, principally socioeconomic, were collected from both husbands and wives to be utilized as checks on data consistency.

The pattern for the analysis of the pilot study was suggested in its general form by the variables stipulated in the design, the multidisciplinary nature of the research, and the vast amount of data collected for each special field. A preliminary report was prepared as a prototype. Because of time limitations, the analysis for that report was confined for the most part to cross-tabulations of data only by the neighborhood types. Detailed analysis would take greater advantage of within-area tabulations. Subsequent analytic work was undertaken to assess the empirical findings of the pilot study and to develop useful measures for some key concepts. Two doctoral dissertations, on fertility and labor-force participation of wives, and residential mobility, and a master's thesis on fertility have been prepared as well as unpublished smaller studies of improvements and maintenance of owner-occupied homes and value orientations related to housing. Several scales and indexes of social change, political attitudes, housing values, and propensity to move, among others, were constructed and tested in these studies, and in separate analyses. A contribution to the field of housing

studies has been made in the development of an index of quality of housing units which shows the potential for overcoming the serious limitations of indexes previously developed for that purpose.

The main purpose of the pilot study and the early analyses reported in the preliminary report was to evaluate the general research design developed for the pilot study and tested in San Juan. Housing-neighborhood area proved to be an efficient discriminating tool for pertinent characteristics of the populations in the neighborhoods. The validity of the general design was further substantiated by the deeper analysis used in the subsequent statistical work. As might be expected, some modifications were shown to be necessary. More detailed background and historical data were needed to round out the survey data. Items that did not discriminate between the neighborhood types or between subgroups within the neighborhood types, or which were not significantly related to the variables whose discriminating power had been demonstrated, were modified or replaced by others. Much of the detail collected for many concepts was found to be redundant and could be reduced. New items were added in some areas in order to improve the precision of the measures.

The several analyses of the San Juan data demonstrated that the key concepts of the various disciplines had been integrated into a study which would provide the basic data for a study of the interrelated nature of urban housing, family objectives and aspirations, and the urban structure. It will be abundantly clear

from the following Sections, however, that the design as presently devised will need further sharpening and modifying in both methodology and techniques. Much of the theoretical background also awaits empirical confirmation. In particular, it would appear to be important to be able to sample neighborhoods on a probability basis to permit more descriptive inferences about the population of all neighborhoods of the types being studied.

The plan of this provisional report is, first, the overview of the inception and testing of the design presented in this Section, followed by a broad survey of methods of survey research and their applicability to the conduct of sample surveys in the urban areas of developing nations. Sections III and IV present methodology and techniques for measuring housing characteristics and quality, socioeconomic and demographic characteristics of families, attitudes, aspirations, and value orientations with respect to housing, and two means by which a housing situation is improved: residential mobility and the improvement of owner-occupied housing. Section V discusses the methodology and techniques by means of which two major components of the process of urbanization --internal migration and social assimilation--and their relationship to urban housing may be explored.

In each Section, an attempt is made to present the theoretical background of the methodology, to cite findings of some previous studies, and to relate the theory and empirical findings, insofar as possible, to urban housing situations in Latin America. Weaknesses of some measures are pointed out, as also are some areas

where previous research is seriously deficient. Throughout, findings from the San Juan data are used liberally to demonstrate the applicability of theory or techniques. Wherever available, data from other studies in Latin American cities also are cited.

SECTION II. DESIGN AND ANALYSIS OF HOUSING AND URBANIZATION STUDIES

Introduction

Public opinion or survey research techniques have evolved to a point where they are routinely applied in a wide variety of situations. The prediction of election results, family planning attitudes, sexual behavior, and labor force participation suggest the range of aspects of human life that have come under scrutiny by sample survey analysts.

The sample survey method has been widely applied in developing countries and it became apparent fairly early that within certain limits interviews concerning quite intimate and sensitive aspects of life could be studied in a great range of cultural and social contexts. It has also become clear, however, that interview surveys can not be employed indiscriminately in all cultures without cautious adaptation. The limits range from the need to adapt to local variations in language usage to concern for the international implications of foreigners conducting surveys on sensitive topics.

The forthright honesty with which middle class Americans, for example, respond to interview surveys can not be automatically expected in other contexts. It has long been known that lower income Americans are much more difficult to study by survey methods than are those of the middle class due to several factors, including their suspiciousness about scientists and people with white collars and the fears of middle class interviewers about working in poor neighborhoods. On the other hand upper class persons are also difficult to study since, for example, the maid may answer the door rather than the housewife.

There frequently is a certain feeling of condescension among elite groups in submitting to an interview conducted by an inferior that also may affect the quality of response.

Great care is necessary, therefore, in designing, executing and analyzing studies not only of marginal groups in developed areas but in general where survey methods are applied outside the social context in which they were developed.

Purpose

This section will describe, in a general way, methods of survey design and analysis which may be used in sample surveys of housing and urbanization problems in developing countries. The phases of a study will be covered as they would be encountered if one were to embark upon an actual study. in this way producing a sort of handbook for persons intending to conduct such a study, thus, a study will be considered from the conception of the survey design through to the analysis of the findings. The goal will be to adapt the well known public opinion or survey research techniques to the study of a relatively specific substantive area (urban housing) and to a particular context (developing areas). Detailed theoretical treatment of sample survey methods will not be attempted in the limited space available here - there are several excellent works that present such material. [1]

The adaptation of these methods as reported here is primarily based on a large scale pilot study conducted in San Juan, Puerto Rico and secondarily on the experience of the authors in Peru and Bolivia.

The application of survey methods or the selection of specific alternative procedures may only be made after detailed consideration of the availability of manpower, funds, transportation, communication facilities and equipment in the area. If, for example, hand tabulation is necessary due to the absence of electronic processing machines many aspects of the study must be adjusted. More importantly, however, without an intimate acquaintance with the values, attitudes and social organizations of the population being studied, serious errors of design and interpretation can occur. This section, and in a broader sense the entire report is intended to treat technical and substantive problems rather than the problems of acquaintance with a given society.

The Choice of the Survey Method

Some distinctions should be made between the kind of study discussed in this report and other types of investigation. Training and case study materials for the conduct of population and housing censuses,[2] economic censuses,[3] household sample surveys,[4] and agricultural censuses [5] have been developed by the International Statistical Programs division

of the U. S. Bureau of the Census and the Agency for International Development. These represent census and periodic data gathering enterprises on a broad scale as opposed to the greater depth of the kind of study described in the present report. Many of the techniques obviously overlap and detailed discussion of some aspects would represent needless duplication. The theoretical aspects of sampling, for example, will not be dealt with here since they have been presented in the case studies prepared for AID by the Census bureau.[6]

In contrast to sample surveys of the type proposed in this report many studies presented under the rubric of housing studies have been based on the analysis of existing data from census, reporting systems of various kinds, and administrative data rather than on gathering new detailed data directly from householders. An example of that type of study is the series of reports on housing in specific Latin American countries by the OAS.[7]

Obviously not all aspects of housing and urbanization should be studied by survey methods. Macro-economic analyses and broad scale questions on the housing inventory, as example, must rely on the censuses and other periodic reporting procedures of a standardized nature. A great deal has been learned about urbanization, for example, using data on small areas, another procedure dependent primarily on existing data. On the other hand there is a broad range of topics that

can only be studied through intensive special purpose sample surveys. Attitudes, preferences, and expectations of individuals about various aspects of their housing, neighborhood and community ordinarily can not be included in census and periodically repeated household surveys. At another extreme one can imagine aspects of housing or urban study that would require the anthropological methods of participant observation; tolerence levels for various degrees of crowding, for example. This type of data can not be gathered by the methods utilized in the San Juan pilot study.

In addition to questions of the methodological and theoretical appropriateness of survey research to the specific problem it should be noted that an organization of considerable size and complexity is required for the production of high quality data. There are, therefore, a number of questions of a practical nature to be faced once it is ascertained that the survey is the appropriate tool. If answers are needed quickly it may be that an organization can not be formed and a study executed before the needed information becomes obsolete. Unless the agency in need of data will be more or less continually gathering survey data it is probably more realistic to sub-contract the field survey to some agency already formed for that purpose. Such professional research organizations frequently may not exist in developing countries.

Survey Design

"The design must be determined in terms of the characteristics of

the country: its physical features; the number and kind of administrative sub-divisions; the relative costs of listing households, of enumerating and of travel; the characteristics of the population, etc."[8] This statement, taken from the Atlantida case studies series, describes the conditions that should be examined most carefully in descriptive studies intended to yield information about the entire population and/or given sub-areas. Studies with specific theoretical purposes or studies of social sub-groupings require special design considerations arising from theoretical considerations. In the present case, for example, the focus is on housing in urban areas.

Social surveys generally are conducted with one or both of two purposes in mind; description, to find out how one or more characteristics are distributed in a population, and explanation, to find out why a distribution takes the form that it does.[9] Both may include or exclude study of the element of change. Descriptive studies typically involve considerable attention to questions of whether the sample being analyzed represents the population and the confidence with which inferences can be made about the population based on the sample. Explanatory studies usually go one step beyond and address themselves to questions such as why lower status families live in lower quality housing than do other groups, rather than concentrate on the question of whether they do in fact have less satisfactory housing. It may be argued that theoretical inferences cannot be made if descriptive inferences to an empirical population cannot be made; the point may be one of emphasis alone. An urban study in a

developing country must concentrate equally on discovering the hows and whys of distributions. The type of study being considered in this report will emphasize explanatory aspects other than descriptive since a primary focus will be upon discovering why urban sub-groups do or do not manage upward housing mobility, for example.

Whatever type of design is to be used, "...advance knowledge of the experiences to be encountered and even of the potential findings to be obtained should be gained through pretesting and trying out new techniques and forms which it is planned to use, and through an advance study during which the final design for the survey is evolved."[10] Several pretests on separate phases of the study may be necessary before the pilot study. In order to avoid problems because a person has already been asked the same questions or has previous knowledge of the study, all pretests and the pilot study should be conducted using similar but different samples than that designated for the main study. Some aspects of research design that it may be advisable to pretest are type of sampling unit, method of interview, and order of presentation of questions, as well as the particular questions to be asked. Sampling units may be individuals, groups, households, institutions, or communities or combinations of these in multi-stage sampling. Collection of data may be through telephoning, mail, search of records, observation, or personal interview. Respondents may supply information about themselves as subjects or about others as informants.

If certain questions prove offensive to the respondents they may be deleted or reworded. Questions of a highly emotional or personal nature must be located in the questionnaire where they will not come as a complete surprise to the respondent, or otherwise destroy the remainder of the interview.

The final pretest or pilot study can indicate whether the sample design as a whole will provide the necessary information in the most economical and efficient manner and will also give the researcher a preliminary indication of some of the results to be expected from the main study provided it is conducted in a universe that resembles the one where the main study is to be conducted. The ideal sample for the pilot study will be from the same population as the sample chosen for the main study. Thus, if the city is divided into blocks and respondents will be chosen from specific blocks, it would be wisest to run the pilot study in adjacent blocks to those included in the main sample.

The two main choices offered in survey design differ most obviously in their approaches to the study of change.[11] The cross-sectional design is static in that measures of change depend solely upon the ability of the respondent to recall events in the past. This may result in a low level of reliability on measures such as the time-order of events and even the factual quality of the data reported, especially where long time spans are involved. However, when cross checks of responses are included the San Juan pilot and other survey experience suggest that a great deal of valuable data of a longitudinal nature can be obtained by asking life history kinds of questions.

There are survey methods which provide a more dynamic approach to the study of change involving multiple visits either to the same group of respondents or to respondents from repeated sampling from the same population but these were not tested in this study due to the lack of a long range component in the study. These are called panel studies and trend studies respectively. Descriptions of each of the three designs, and variations on the basic formats follow.

The Cross-Sectional Survey

The cross-sectional survey (as well as all other designs) can be used for both descriptive and explanatory purposes. It involves the collection of standardized information from or about a sample chosen to represent the component units of a specified universe. Each subgroup (component unit) is represented in proportion to its distribution in the population being studied within the limits of probability; (more detailed discussion of representation will be included in the Sampling section below). If subgroups (social classes, for example) are to be represented in proportion to their occurrence in the population, one may wonder if a subgroup that is distinctly in the minority may be missed or not enough cases obtained to make a reasonable estimate about this subgroup in the population based on the sample. The solution to this problem is stratification of the sample. Sampling separately from each stratum assumes the same proportion in the sample as in the population. In order to provide a sufficient number of cases for analysis, some strata may be over-sampled. However, stratification can only be done when a reliable estimate exists of how the groups are distributed in the population and where the characteristic at issue is easily recognizable by interviewers. This is difficult in cases where the characteristic is not visible (e.g. what proportion holds a particular attitude, has been exposed to a particular communication, is informed about a particular event, has recently migrated into the community, etc.) Stratification may be useful in the case of small racial minorities but not for people with extreme political views. It is at this point that another example of the effectiveness of a pilot study becomes apparent. The

pilot study may be used to provide information about key subgroups to assess the need for stratification. It can indicate the frequency with which a characteristic may appear in the main sample.

Variations on the basic cross-sectional design may be constructed to fit specific purposes. One may be interested in determining the effects of certain social contexts on individual behavior. The sampling for this type of design is done in two phases. First, a sample of groups within each of which there is a certain amount of homogeneity for the particular context is taken. Then, from each of these groups is taken a sample of individuals to determine the relationship between the context and other factors. The design utilized in the San Juan pilot study and suggested for future studies is one where various types of neighborhoods are sampled as contexts within which housing as a process occurs. It may be difficult to establish the existence of causal relationships (whether a person operates in a particular context because he has certain traits or whether he has those traits because he operates in that context) but it is possible to analyze the relationship among various factors within contexts to ascertain how such relations differ between contexts. Related to the contextual design is the sociometric design which examines interpersonal relations and their influence on behavior. This tends to be a more expensive method which is useful on a smaller scale as in factory or institution management. It entails collecting information from all persons in a given context so that a network of interpersonal relations may be described and its influence on individual behavior examined. Finally, there is a variation on the basic cross-sectional survey. The parallel-sample design involves gathering the

main body of the data from the main sample by the cross-sectional sampling procedures and then complementing this data with auxilliary surveys of special groups. A sample of the general population may be paralleled with interviews with a special elite group such as legislators or opinion leaders. The parallel sample method may involve the presentation of statistical analyses of the variables and relations on them for the main sample accompanied by detailed case studies where these may be most useful. All of these designs can be used to analyze change by obtaining retrospective life histories but respondents may find it difficult to remember past behavior and attitudes accurately and what they can recall may be unconsciously distorted by present beliefs. Extensive use was made of such histories in the San Juan pilot study to analyze, for example, residential mobility. Thus, cross-sectional survey designs, although often most suitable for economic reasons, may not be ideally suited to studies of social process and social change.

Trend and Panel Studies

For studies of long and short term change the type of survey involving repeated measurements of the same population may be needed. A trend study where repeated samples are taken from the same population (usually of different individuals)is particularly useful for the study of changes over time in rates for the population or even subgroups of it. Thus, successive cross-sectional probability samples asking similar questions can indicate, for example, trends in the proportion of families who are owner-occupiers. Periodic censuses, the current population survey (in the United States) and other periodic household sample surveys clearly

fall in this category. The equivalency of the samples allows, within statistically defined limits, the assessment of change during the time between surveys.

A panel study, where the same individuals are given the same questions on successive occasions, is limited to short-run change because of the difficulties of locating respondents at successive interview points. Over long time periods large proportions may be lost in mobile populations. The principal advantage of the panel study over trend studies is that they allow the investigation of turnover, i.e. shifts in the behavior or attitudes of individuals from one period to the next and permit one to relate individual characteristics to the amount of shift. "Panel studies provide a means for inquiring into a number of questions concerning the dynamics of social change."[12]

1. What kinds of people are most likely to change in what direction?

2. Under what conditions do changes come about?

3. What are the conditions which produce differential changes in attitudes and behavior?

4. What attitudes and behavior patterns are likely to change simultaneously over time?

5. What is the relationship between present attitudes and future behavior?

6. What factors affect the length of time required for change to take place?

7. Once the change has taken place, what are the guarantees that it will last, and how long does it actually last?

At the present state of knowledge of urban housing conditions in less developed areas the cross sectional survey of the type utilized in San Juan may be more appropriate than more complex panel designs.

The San Juan Pilot Study Design

The methodology used in the San Juan Pilot Study[13] involved a combination of designs which cannot be given any particular generic name but must fall somewhere in the category of contextual design with multiple visits. The concept of multiple visits is unlike that used in trend or panel studies in that the visits in the San Juan study were designed to cover different areas of questioning with different respondents in the same household. The reasons for spreading the interview out over several visits were not related to the study of change over time. The choice of the multiple visit procedure was the result of consideration of two possible methods of obtaining information from several members of the same household. It had already been decided that the primary family occupying a housing unit should be the basic unit of investigation. The design developed as follows:

> One opinion was that the interviewing should be undertaken in waves--the first wave would be limited to interviewing all of the housewives, followed by a second wave in which husbands and father-son pairs would be contacted.. The second opinion held that two interviewers should call on each household at the same time and simultaneously interview both the housewives and the selected male members of the family.
>
> The advantages of the first approach are that (a) information could be obtained in the first wave that would permit systematic selection of households having eligible male members to be interviewed later, thus saving the interviewers' time; (b) experience would be gained in the first wave which could be put to good

use for interviewing in the second wave; and (c) in the event of any time or monetary restriction based on the terms of the subcontract all the housewife interviews, which were the basic ones, would be completed first.

The advantages of the second approach are: (a) once in the household, there is greater likelihood that male members, as well as women, could be interviewed; that is, there would not be a refusal at the time of call back based on dissatisfaction with the first interview; (b) this approach would also avoid losing respondents on the second wave because of families moving away during the hiatus between interviews or difficulties in locating the same address twice. A disadvantage of this approach was the costliness of having pairs of interviewers visit numerous households where there were no eligible males or when males were not at home.

It was finally decided that the two wave approach would be utilized in the San Juan study. However, the result was the loss of a higher than desirable proportion of male interviews when interviewers called back in the second wave.

Such multiple interviewing may only be necessary when a large amount of information from the same family is needed or when it is clear that certain members of the family have better information about some factors than other members. The husband might be questioned about economic matters while the wife responds to family questions, for example. It must finally be mentioned that each respondent was only interviewed once, and each particular questionnaire was only given at one point in time. Therefore, this is a cross-sectional study with no provision other than life history kinds of questions for longitudinal analysis.

Sampling

As in the previous section, we will at this point attempt to present a selection of the more basic principles of sampling, some variations on

techniques, and finally an example of a combination of sampling methods as utilized in the pilot study.

Perhaps the most elementary of all sampling procedures from which reliable and representative statistics can be obtained in the simple random sample. "Simple random sampling is defined as that procedure which assigns the same selection probability to each sample of a stated size."[14] Thus, the formal determination of a random sample involves the preparation of a list which shows each possible sample of size 'n' that can be drawn from a finite population of 'N' elements, the assignment of a known probability to each sample which is equal to the probability of any other sample from the population, and the derivation of expressions for the statistics expected from the sample. Practically, random sampling requires some means of listing the finite population to be sampled or assembling the units in such a way that individual units may be drawn such that drawing one unit or a combination of specific units does not alter the probability of drawing some other unit. There are differences between sampling from finite and from infinite populations and between sampling with and without replacement that need not be dealt with in detail here.[15] There are a few questions of practicability and cost which arise in the utilization of simple random sampling:

1. Lists of population elements with which to work are seldom available.

2. The mechanical labor of selecting a large random sample is overwhelming.

3. Wide geographic areas are hard to cover without clustering.

4. When the investigators are more interested in special subgroups, simple random sampling may not provide enough of these units

for special study.

5. Desired degrees of accuracy may be obtained by other procedures with considerable savings in labor and travel from smaller segments if they are known to possess certain characteristics.

The elements of a population may have a natural ordering or numbers may be assigned in an arbitrary manner to the elements of a finite population. In such cases it may be possible to use systematic sampling which consists of counting off along the ordered elements and selecting every $k^{\underline{th}}$ element for the sample. Ordinarily, the number of the element at which the counting is to start is obtained by choosing a random number between one and k. The advantages of systematic sampling are as follows:

1. If a list is available, the mechanical details are simpler than for simple random sampling where tables of random numbers must be used (or some other device to choose each individual unit that is included (Systematic sampling permits one choice and the rest of the units are determined).

2. Systematic selection can be used by field workers to obtain sample elements as they prelist.

There are also a number of precautions that must be taken in systematic sampling. One must be certain that the list of elements refers to the correct population. For instance, a telephone directory would not provide a sufficient list, since many individuals do not have phones and may differ from those who do in important characteristics. Careful attention must also be paid to insure that the population is not arranged in such a way that the $k^{\underline{th}}$ element possesses a distinct characteristic from all others; the ordering of items should not be systematic. An

example of this might be in the listing of the population of an army base by barracks where every $k^{\underline{th}}$ man is a master sergeant. Systematic sampling can be used to substitute for simple random sampling where the list is complete and the ordering of units does not affect the sample. Systematic sampling to be utilized in other sampling methods at those stages where simple random sampling might be employed. Stratified sampling, unlike those previously mentioned, makes use of known population characteristics may avoid having to increase the size of the sample. The method involved in forming stratified simple random samples is to divide the population into strata, select a simple random sample from each stratum and combine these into a single overall sample. This procedure assures that the strata are included in the sample according to their distribution in the population. The individuals within each stratum should be as similar as possible with regard to the stratification characteristics (unlike the elements in a cluster) and the strata must be as different as possible on these characteristics. Some possible resources for identifying subgroups within a population, including the approximate number or fraction of elements contained in each of the subgroups are routine records or previous statistical investigations, including censuses. Obviously it is not possible nor desirable to classify elements into subgroups on the basis of the dependent variables that are to be investigated in a specific survey. If it is surmised that the subgroups of a defined system will differ with respect to the subject of an investigation, and if the fraction of the population falling into each of these subgroups is known from a previous study, then it would seem that the use of stratified simple random sampling would be reasonable in terms of increasing

the precision of sample estimates or reducing sample size while assuring the presence of the strata in the sample. Simple random sampling affords no such control since all possible samples have an equal chance of being drawn and some of these may not contain elements from important subgroups. Strata that are a small percentage of the population are particularly vulnerable. When a stratum is given the same weight in the sample as it has in the population, this is referred to as proportional stratified random sampling. Strata, of course, may be over-sampled. There are limitations connected with a stratified sample. The practical difficulties associated with simple random sampling now apply to each stratum separately. Gains in accuracy are apt to be small unless there are wide differences between strata. Loss may even occur if there is improper allocation of the sample among strata. The investigator must be able to obtain data about characteristics for stratification. A stratification may be most advantageous when strata are used as the objects of the study with only occasional reference to the total population. Stratification is, of course, possible with other than simple random sampling.

Cluster sampling is used in answer to the problems created in covering wide geographic areas while reducing time and costs of travel. Each situation must be examined separately. However, certain criteria of definition deserve special mention. These are physical proximity and organizational attachment. When clusters of population elements are defined on an area basis and when a sample of these areas is chosen in accordance with some probability-model, we speak of area-probability-sampling. The use of organizational attachment involves contacting

individuals through identifiable and formally organized groups in one of which most people are a member. Special segments of the population may frequently be economically contacted only through means such as these. The major difficulty encountered in using groups of this type is that of securing assurance that all members of the desired population are contained in the defined system of groups.

The advantages of cluster sampling, particularly area sampling, include the fact that the clusters (states, counties, census tracts, etc.) are easily identifiable on maps and the travel time between one element and another is greatly reduced since individuals would be drawn from a limited number of clusters. The clusters should be as heterogeneous within themselves as possible. It is preferable to take as large a sample of clusters as possible and to sample them as thinly as possible--or, what amounts to almost the same thing, to make the clusters as small as possible. The limiting case would be the simple random sample where the cluster contains one unit. However, the sampling of geographic clusters will be less efficient than simple random sampling of individuals, therefore special statistical formulas are needed.

Sampling is a very complex and sophisticated operation. When large scale expensive surveys are conducted attempting to provide highly accurate descriptive data the sampling should be left to experts. The cursory introduction to sampling given here is not sufficient background for preparing such samples.

Before giving an example of how such techniques may be compounded to form a total sample design, other sampling techniques which are frequently employed can be mentioned.[16] Related to cluster sampling, but

differing in one major respect is quota sampling. When clusters of areas have been chosen as samples the interviewer proceeds to obtain interviews from all elements in the cluster or randomly selected elements in the cluster. This is not the case for quota sampling. The interviewer is sent to a specified area with the number of persons with various specific characteristics he should interview in that area. In other words, the field investigator is instructed to make his own selection of cases from a designated stratum. Several difficulties can be seen with this method. When the quota is small compared to the size of the area the interviewer will be tempted to accept the most easily accessible respondents, thus potentially leaving out a very important segment of the population. If the quota is large in comparison to the area it may be necessary for the interviewer to canvass every household in order to obtain interviews from enough people possessing the right characteristics.

The sampling techniques used in the San Juan pilot study involved the selection of households from several types of neighborhoods classified as characteristic of low and lower-middle income housing in that city. The following is a discussion of how the choice was made:[17]

> The method of selecting samples that was decided upon was to draw areal samples from neighborhoods in the municipio of San Juan that satisfied that criteria of each type of neighborhood that would be included in the investigation. That decision was arrived at after discussion in depth of such alternative selection procedures as an areal probability sample over the entire municipio or cluster samples from the different types of neighborhoods.
>
> Both alternatives had attractive features. With an areal probability sample, obtaining housing that fitted into the neighborhood types was assured, but it was equally clear that locational context of any type would be lost. Moreover, the sample would have to be quite large in

order to obtain enough cases for intra-area comparisons. In addition to these considerations and its somewhat higher logistical costs, this type of sample obviously required a complete prelisting of units within the total area, and such a listing was not available. Cluster sampling, in contrast, would give more detailed information on neighborhood interactions. It would also provide fairly homogeneous types of housing, which would permit assessing attitudes and values of people living under somewhat similar conditions. The problem of contamination between neighboring respondents, however, is a serious one when cluster sampling is used and would further complicate the already sensitive issue of having to return to obtain interviews with other family members. For this and other reasons, cluster sampling, too, was rejected in favor of systematic areal samples within the neighborhoods as the means best suited to obtaining the interviews required with a minimum of disadvantages. When areal samples from neighborhoods with specifically designated characteristics are to be drawn, the first question to be settled is whether in fact the types of neighborhoods that were originally described actually exist. In the case of San Juan, it was quite evident that not all of the originally designated types of neighborhoods were available. No suburban squatter settlements were found in the San Juan area. But four types of neighborhoods could be ascertained that satisfied our criteria. They included slum neighborhoods, with housing of poor original construction; established older lower-class neighborhoods; public housing projects, consisting of two to four story apartments; and newer single-family dwelling development in a lower-middle class neighborhood. The neighborhood areas were determined by ground inspection, discussions with the sampling consultant and persons in the local and Commonwealth housing agencies, and data from the 1960 Census of Housing.

The sampling consultant employed for the project was a Professor of Statistics at the University of Puerto Rico and the sampling expert for the Puerto Rican Planning Board. He developed a list of relatively homogeneous neighborhoods that satisfied the requirements of the study design. The selection of the seven sample areas constituting the four neighborhood types finally included in the study was made on the basis of representativeness, size of areas, and their appropriateness for field surveying (for example, several areas were eliminated because other studies were actively being conducted in the neighborhood or had recently been completed in them). One problem encountered was the variation in public housing projects, due largely to the age of the projects. In the

end, one older and one newer project were selected, so as to examine the effects of historical variations as well as to obtain the range of conditions experienced in public housing life. As it turned out, the two public housing neighborhoods differed greatly.

Within each area systematic sampling was performed. In the lower and lower-middle class neighborhoods (note that these titles for the neighborhoods are based in part on the study results, which clearly differentiate model characteristics of populations living in the neighborhoods), sample units were selected from maps and listing was performed in the field by the supervisors. Within the public housing projects, sampling was done from a list of dwellings obtained from the project offices. A systematic sample was then selected. For the slum areas there were no lists or up-to-date maps (in fact, streets were lacking for some of the dwelling units). The selection in these areas consequently was more difficult and required several visits to the field, the location of general subareas selected from fairly recent areal photographs, the preparation of crude maps, and the active supervision of interviewers. Within the subareas a systematic sample was drawn, following prescribed criteria for numbering units that face on alleys, on wooden walks suspended over water, and, in some cases, along streets. A major problem was identifying separate units that were located behind units that faced a passageway or street. When the interviewing began in these areas, supervisors were constantly available and considerable overtime work was recorded.

The same number of sample addresses were drawn for each type of neighborhood, although the neighborhood sampling frames differed in size. This meant that the proportion of units selected from each area also differed slightly. In order to compensate for wastage anticipated in the study, 300 housing units were drawn for each area. This represented on average about one unit out of every six or seven. The goal was to obtain roughly 1,000 completed interviews in the first wave, with a possible loss of 50 units in each area.

The actual tally upon completion of the first wave of interviews was 1,022 wives of all ages (650 of whom were under 50 years of age). A second wave of interviewing was conducted to obtain interviews from husbands and father-son pairs within the same households with the result being 410 husband interviews (which would match with 410 of the housewife

interviews) and 78 father-son interviews also paired with a subset of the housewives. It was decided that these figures were high enough to permit intra-group analyses as well as inter-group analyses.

Interviewer Selection and Training

In this section it is planned to describe the manner in which a few researchers have gone about screening, testing, selecting, and training interviewers. A key report in this regard is a complete description of the process of obtaining and training interviewers used by Kurt W. Back and J. Mayone Stycos in their Jamaica Human Fertility Investigation.[18] A summary of their procedures will be presented followed by a discussion of the techniques used in the San Juan pilot phase and how they may have differed. In Jamaica, Back and Stycos faced one major problem common to all less developed countries, that of obtaining qualified interviewers where there is a deficit of professionally trained personnel. A reasonable approach might be to advertise for people interested and then set up a screening procedure to determine which of the applicants possess the qualities needed in an interviewer. This was done in Jamaica; the first stage of the screening process involved the use of an application form. The applicant was asked to fill out the form which also contained a summary of the purpose of the project to be read by the applicant. Each of the applicants was then seen by two of the three screeners. During the interview he was . to summarize in his own words the purpose of the project. From this summary he was rated on reading ability and comprehension. He was then asked if he had any questions regarding this statement of purpose. The quality of his questions were rated "none", "routine", or "good". When asked how he would introduce himself and begin the interview his response was rated on two 5-point scales: 1) use of language: plain simple English without dialect, and 2) rapport with the respondent when asked

rather pointed questions by the latter. Throughout the first interview he was rated on introversion-extroversion, poise, general appearance, intelligience, imagination, and experience. Besides these measures each screener gave an opinion as to whether he felt the candidate should be definitely included, definitely excluded or given a chance to return for a second interview. The second interview was similar to the first but it placed the candidate in slightly more difficult situations. For those interviewers chosen by the screening process there followed a period of training during which they were constantly exposed to testing and observation to determine whether, in fact, they would make suitable interviewers.

The basic methods used during the training procedure included lectures, readings, mock interviews staged by trainees in front of the group, mock interviews in small groups with one or two trainees as critics, and audio-visual aids of various sorts to dramatize interviewing errors and make them more accessible for discussion. Some modifications on training procedures previously used included:

1. Minimization of reliance on written instructions.
2. Less reliance placed on a single lecturer or discussion leader.
3. Introduction of a large number of tests during the training period.
4. Less emphasis on practice interviews in the office with a director present.

At the end of the training session the interviewers were asked to choose which technique they found most interesting and most helpful. The technique chosen most was lectures (giving the background of the study as well as interview techniques). Following this were field practice,

tests, office practice, demonstration interviews, and staff attitude (friendly, approachable). Some of the lower-educated trainees found the tests difficult and many expressed the desire that more instruction on coding procedures be included but at the end it was generally felt that the training procedures were fairly successful not only in transmitting important information but also in equalizing the initial differences in education and experience between the interviewers.

Tests during the training procedure and the early stages of field work were conducted in several ways and were designed to cover several measures. Interviewers were rated on academic-type examinations, they were rated by their peers, their first interviews were checked for accuracy and editing errors, and supervisors rated their general performance in the field. Intellectual ability was tested in seven areas. There was a general clerical test to measure accuracy, numerical ability, and verbal ability. They took an academic examination covering the contents of topics treated in training. Interviewers ranked each other on a sociometric scale which included intelligence. Their actual educational achievement was rated and finally they were rated on comprehension, intelligience, and imagination. Certain personality factors were tested including autonomy: the ability to adhere to one's own intentions and to maintain self-confidence in a variety of situations, and compliance: the acceptance of standards and conformity within an organization. Tests of autonomy included role-playing which involved the use of several techniques eliciting an array of responses after which the interviewer was rated from "too dependent" to "too agressive" and tests of maintenance of set or rigidity such as the "water jar" test

which involves finding the simplest solution to a series of problems involving the transfer of water from one jar to others. Tests of compliance issued from the Guilford-Martin Personnel Inventory on which the trainees were scored for objectivity, agreeableness, and cooperativeness. Finally, there were tests of motivation. The interviewer was asked how many refusals he expected to get and how many of the respondents should be expected to give reliable information. If he gave an optimistic reply he was defined as a highly motivated individual. Thus, the directors were looking for objectivity, no moral biases, no excessive missionary zeal, no condescension toward the lower class, and no rigidity. They sought interviewers who would not bias the respondent's answers or interpret them before recording and would avoid stereotyping. They wanted the "ideal interviewer" to succeed in making the respondent feel comfortable and clear about what went on and to probe more, follow carefully the instructions, and try to obtain accurate data which is more likely to leave the respondent satisfied. "In summary, the interviewer who by her actions and approach can define the interviewing situation clearly will leave the respondent satisfied with the whole performance. This manner is reflected by the ability of the interviewer to keep to the original purpose and to perform conscientiously the duties of the interviewer which the respondent can perceive." (Back and Stycos, p. 44)

The factors which were felt to be most important in producing and maintaining high morale among the interviewers were:

1. Driving home the importance of the task, the importance of each individual's contribution to the success of the whole.

2. Working conditions - as much transportation as needed and adequate wages wherever possible.

3. Self-confidence -- training experience of sufficient length and coverage that interviewers feel equipped and confident of being able to deal with most situations.

4. Constant reminders that they are good at their jobs.

There were few major complaints registered by the trainees either during or following the training procedure but it may be possible that this was due to the desire to ingratiate the foreign directors or due to the lack of familiarity with the democratic process which allows them to criticize these procedures. However, it was felt that very few feelings of this sort did occur and that the trainees were actually satisfied with the general approach to training.

The recruitment of interviewers in the San Juan pilot was conducted by the field director from among a pool of more or less experienced interviewers known to her in part from other research projects on which they had worked. They were advanced social science students at the University of Puerto Rico. It may be that social science and social work students will be the most fruitful source of qualified interviewers and supervisors in most less developed countries.

During the two-week training period several interviewer training techniques were used. These included role-playing, field visits to the neighborhoods, trial field interviews with supervisors conducting the interviews, and a number of practice sessions led by the interviewers. In addition, group sessions were held each day to go over the completed questionnaires, suggest new ways of eliciting information and discuss extensively the difficulties encountered during the day.

Several of the Senior Investigators were present at these sessions, an important aspect of the training of the interviewers.

Two interviewers on this study were released because of relatively poor performance in terms of having complete and correct interviews, numbers of interviews completed, and the proportion of assigned sample address for which a completed interview was obtained. This aspect of interviewer performance was not touched on by Back and Stycos and, along with the involvement of the interviewers in questionnaire construction and revision, this constitutes the major difference in techiques used by the two studies. Both training sessions lasted two weeks, both concentrated on practice interviews and group discussions. It would thus appear that the requirements for interviewer selection and training involve some a priori concept of the personal and intellectual characteristics desirable in an interviewer and a schedule of accomplishments to be achieved during training, after which the directors will feel secure in sending interviewers into the field.

Questionnaire Construction

According to Kornhauser and Sheatsley, "The entire process of [questionnaire] construction can be divided into the following six steps: deciding what information should be sought, deciding what type of questionnaire should be used, writing a first draft, re-examining and revising the questions, pretesting, editing the questionnaire, and specifying procedures for its use."[19]

The specific considerations for the design of a questionnaire for the study of housing and urbanization will be discussed below but general concepts relating to the six steps of questionnaire construction need to be considered.

All questionnaires (either interview schedule or self-administered questionnaire) must contain a certain amount of personal history about the respondent and often the members of his household or organization (depending upon the sample subgroups). Such data would include age, sex, marital status, education, and employment. Along with such personal or background data it will also be necessary to obtain information about behavior patterns, and about conditions and events around which the respondent's life is centered. Finally, the core of the questionnaire will be designed to determine the reasons for such behavior patterns and the attitudes toward such events and conditions. These opinions, beliefs, and feelings take on two aspects. There are the objective factors such as the influence of other persons, of conditions and events, of published communications, etc. and the subjective factors such as specific wants, underlying desires and dispositions, evaluations, meanings, etc. Questions

to be used in gathering census-type data may be fashioned after the census questions with little concern as to the wording (other than to insure that the wording conforms to the local idiom and international standards or recommendations) since these questions have been very carefully screened by the related agencies. Therefore, the major concern for the writers of questionnaire items must be with those questions that are designed to bring out the attitudes and opinions of the respondent. This is where pretests and pilot studies become essential. Many questions must be presented in a variety of ways before the least offensive and least vague wording can be found. Several forms of the question can be tested simultaneously in the same questionnaire or in different versions and the reactions to them can be checked through interviewer observation as well as reliability checks. During the pretest the interviewer might ask the respondent for his reactions to the questions and get him to discuss his feelings toward the topic in general, what areas he would be willing to discuss and what type of question would be most likely to elicit a complete and truthful answer from him. If the respondent feels that he is an important consultant in the process of creating and revising the schedule he will be left with a more favorable impression of the interview as a whole and will be more likely to cooperate in the future. (Interviewers conducting pretest interviews of course are the key to effective revision.)

Kornhauser and Sheatsley developed a checklist of points to consider in formulating questions.[20] We consider this checklist a worthwhile instrument in that it provides the researcher with a starting point for questioning himself on the various aspects of questionnaire construction:

Guide for Questionnaire Construction

Decisions regarding question content:

Is this question necessary: Just how will it be useful?

Are several questions needed on the subject matter of this question?

Do respondents have the information necessary to answer the question?

Does the question need to be more concrete, specific, and closely related to the respondent's personal experience?

Is the question content sufficiently general and free from spurious concreteness and specificity?

Do the replies express general attitudes and only seem to be as specific as they sound?

Is the question content biased or loaded in one direction, without accompanying questions to balance the emphasis?

Will the respondents give the information that is asked for?

Decisions about question wording:

Can the question be misunderstood? Does it contain difficult or unclear phraseology?

Does the question adequately express the alternatives with respect to the point?

Is the question misleading because of unstated assumptions or unseen implications?

Is the frame of reference clear and uniform for all respondents?

Is the wording biased? Is it emotionally loaded or slanted toward a particular kind of answer?

Is the question wording likely to be objectionable to the respondent in any way?

Would a more personalized or less personalized wording of the question produce better results?

Can the question be better asked in a more direct or a more indirect form?

Decisions about form of response to the question:

> Can the question best be asked in a form calling for check answer (or short answer of a word or two, or a number), free answer, or check answer with follow-up free answer?
>
> If a check answer is used, which is the best type for this question - dichotomous, multiple-choice ("cafeteria" question), or scale?
>
> If a checklist is used, does it cover adequately all the significant alternatives without overlapping and in a defensible order? Is it of reasonable length? Is the wording of items impartial and balanced?
>
> Is the form of response easy, definite, uniform, and adequate for the purpose?
>
> Is the answer to the question likely to be influenced by the content of preceding questions?
>
> Is the order led up to in a natural way? Is it in correct psychological order?
>
> Does the question come too early or too late from the point of view of arousing interest and receiving sufficient attention, avoiding resistance, etc.?

These are by no means all the questions that must be answered, nor will it be possible to obtain satisfactory answers to all of them before beginning the interviewing segment of the study but this list will provide a starting point for the theoretical analysis of the quality of construction of a questionnaire.

The actual questions that were developed for the San Juan pilot study questionnaires for housewives, husbands, and father-son pairs will be included in an appendix but we will present the sequence of events which produced these schedules.

> Which family members should be interviewed (which determined the number of questionnaires needed to be developed), what categories of information should be collected from the different family members, and how much time might be devoted to each type of information was decided generally when the conceptual framework for the study was formulated.

The actual construction of possible questions to be included in the respective interview questionnaires also began during that period. However, the specific items used were not decided upon until the period immediately preceding the actual commencement of interviewing.

It was agreed that the pretesting period was crucial in selecting the most relevant and meaningful items to be included in the actual questionnaires. The investigators prepared, in some cases, different sets of questions to measure the same or similar concept. Lengthy interviews (up to four hours) resulted, but this was not considered a defect at this stage.

A number of observations are pertinent concerning the theoretical and methodological perspectives that led to formulating questions in particular ways. (1) All the investigators had previously worked extensively on some of the concepts that would be utilized in the study and could draw on their own experiences....(2) These staff resources were supplemented by the results of a literature search that yielded a glossary of concepts and operationalized measures. These were examined and selected for inclusion on the basis of their relevancy for the total research design. (3) Several new measures were designed to assess issues that previously had not been investigated to any extent. The questionnaire materials on female employment and family decision-making are good illustrations of such a new development. In addition, an attempt was made to develop several scales and indexes to measure such concepts as housing values, political attitudes important to housing, propensity to move, and the like. (4) It was generally felt that previous survey studies had not stressed sufficiently the process and change in social behavior that accompanies development. Since a longitudinal design was not possible, social change data were obtained by use of retrospective historical questions. In the case of father-son items, intergenerational comparisons were possible. These approaches were incorporated into the research design on the assumption that the only appropriate way to study development-oriented behaviors and modernization is to analyze changes over time....

By the end of May 1966, a pretest of over 50 interviews had been completed on the first questionnaire by the field supervisors; the responses had been tabulated and some of the major sources of error isolated. A major problem remaining was that the questionnaire was still too long, taking over three hours to complete. A number of factors were involved in scaling down the questionnaire

> until only the critical and salient items remained. To begin with, it was the consensus of the group that certain information was basic to the study and could not be deleted. This information was for the most part limited to matters of housing and household composition. The next step was informal negotiation among the senior staff members to determine what data from their specialized fields were most pertinent and needed to be retained. It was concluded, for example, that information on mobility and migration was extremely relevant to the matter of housing and that considerable attention should be devoted to its collection. Employment and marital histories likewise were judged to be highly important. On the other hand, a large number of questions on interpersonal relationships were deleted. Also, certain data originally intended to be included for the fields of economics and health for San Juan were decided to be more characteristic of United States patterns than of South American ones, and consequently, many of these items were not included. Nevertheless, the final questionnaire still required an average of two hours for administration. 21

Let us not forget that the San Juan study was intended to be a pilot study and therefore was designed to discover the difficulties that one might be expected to encounter.

Thus far we have mentioned the theoretical aspects of questionnaire construction and some considerations that were taken in the actual construction of a housing urbanization pilot study questionnaire but we have not yet made mention of the types of topics and wordings of questions designed to get at the problem of studying urbanization. The study developed by the U. S. Census Bureau for the Alliance for Progress provides a complete household sample survey of a mythical Latin American country, Atlantida.[22] This case study is presented in a number of booklets with each booklet related to some phase of research design just as we have presented the various steps in this chapter. The section of the Atlantida study about questionnaire construction actually consists of a number of questionnaires designed to cover a large number of topics that a researcher might deem relevant for household sample surveys. Topics covered include: Structural and Occupancy Characteristics of Housing, Educational Attainment, Annual Income and Work Experience, Secondary Work Experience, Recent Illness and Injuries, Vital Statistics (birth and death records), Natality, Internal Migration, Immunization Against Communicable Diseases, Use of Medical Facilities, and Consumption of High Protein Foods.

A study such as the present one should take into consideration such model sets of questions in order to provide comparisons and cross checks with broader scale undertakings.

Our discussion has offered suggestions in the areas of theoretical, conceptual, and physical construction of questionnaires but one area which needs more discussion is the technical aspect which involves the use

of questionnaires after the interview has been completed by the respondent. The beginnings of such technical considerations must take place during questionnaire construction. As we have said, it is necessary to take coding procedures into consideration when determining the form of responses to be expected from questions. The discussion of coding and machine processing to which the questionnaire data will be subjected after it has been marked by the interviewer and checked for editing errors and reliability follows.

Coding and Machine Processing

Decisions about coding procedures beginning at questionnaire construction must take into account a large variety of situations. The destination of the questionnaire immediately following completion by the interviewer can range anywhere from manual tabulation (counts made directly from the schedules) to a machine such as the Census Bureau's FOSDIC (Film Optic Sensing Device for Input to Computers). The form of response best suited to each of these procedures varies little since the manual tabulation requires the responses to be in well organized categories in order to maintain efficient counts and the FOSDIC, although it provides a mechanical transfer of information directly from the questionnaire form to the computer, requires that the information also be in categorical form and that certain marks can be made on the form to represent each different answer. However, it is rarely the case that census-type figures provide all the information necessary for an urbanization study. Questions designed to determine opinions, beliefs, and behavior patterns seldom have attached to them an exhaustive list of responses. These

categories of responses can only be determined after the respondents have provided them and will require coding in the office in addition to interviewer recording. It also will be necessary to use some sort of coding and machine processing techniques which will allow for both manual and mechanical manipulation of data. This will involve the manual transfer of data from questionnaires to 80-column data-processing cards and then the programming of these cards to get at the combinations of variables required by the study. These are the procedures that will be covered in this section.

One of the processes that the questionnaire must go through before there is any thought of coding is that of editing. Parten suggests a lists of functions that the schedule editor must perform. He must see that the data to be tabulated are: "(1) as accurate and reliable as possible; (2) consistent with other facts secured; (3) uniformly entered; (4) as complete as possible; (5) acceptable for tabulation; and (6) arranged so as to facilitate coding and tabulation. He should also spot comments that are useful in interpreting results."[23] She also presents general rules to include in editing instructions.

> 1. Editors should be thoroughly familiar with the instructions to enumerators and to coders, as well as with their own instructions. Deficiencies in instructions will be caught more readily if editors know what procedures the enumerators are requested to follow. Similarly, if they know the processes through which the edited schedule passes after it leaves the editing divisions, editors will understand why various procedures are adopted.
> 2. In no case should an editor destroy, erase, or make illegible the original entry filled in by the enumerator.
> 3. All available space on the schedule may eventually be used, so it is advisable to avoid all unnecessary marking of the schedule, unnecessarily large letters or symbols, or illegible entries, because these will need to be rewritten.
> 4. All marks on the schedule by the editor should be made in a distinctive color.

5. No answer should be changed without sufficient justification based on other data in the schedule.
6. Editors are authorized to make certain changes, but they should consult the supervisors for others.
7. Schedules to be discarded or rejected should be submitted to the chief editor, who consults with the sampling director before placing them in the inactive file.
8. All answers changed or supplied by the editor should be initialed so that if necessary the check editor can verify the reasons for change.
9. If any of the entries to be coded are illegible, confusing, or difficult to read at first glance, cross out original entry, but do not erase. Rewrite clearly.
10. Detailed instructions should be given on how to make alterations on the schedule. (a) To cancel any entry completely, the census procedure is to draw a horizontal line through the entry, e.g., (b) To cancel only part of an entry, the editor may draw oblique lines about one-sixteenth of an inch apart, e.g., 3500. (c) To correct an entry, the editor should cancel the original entry and write the new entry in a designated place (above or beside the old entry).
11. Each editor should be aware that his work will be check edited, and that he may have to justify his interpretations to others.
12. Editor's initials and date of editing each schedule should be entered on each schedule when it is edited. [24]

There are a few instances in which the coding will have been completed before the schedule reaches the editors. This will be the case if the coding has been done by the respondent, as is often the case in mail questionnaires when the respondent is asked to mark the category into which he feels he fits for each question. Another instance will occur when the interviewer places the respondents' answers into pre-coded categories at the time of the interview. In these cases it will also be the responsibility of the editor to check the coder's work for legibility and accuracy. However, a common procedure is still that of having the coding done in the office after the categories have been determined from the responses received. In the former cases, as we have said, the coding will be done on pre-coded schedules. The advantages of using such a schedule include the elimination of clerical errors

and loss of time in transcribing the data from questionnaires to coding forms or transcription sheets since the card punching operators can work directly from the schedules. Some disadvantages which tend to offset the advantages are listed by Parten:

> If the classes into which replies are divided on the precoded schedule contain unusually large frequencies in groups designated as 'all other' or miscellaneous classes, the data are not very meaningful. A classification set up on the basis of actual replies would break down the miscellaneous group into more significant categories.
>
> Another disadvantage of the precoded schedule is that the replies are classified in such general terms that it is difficult to detect errors in interviewing or reporting. Replies expressed in general terms may not appear to be inconsistent, but if the detailed facts were entered, the inconsistency might be evident. In precoded schedules the field worker is often asked to make a number of computations before classifying and recording the answer. Since the original figures are not available, the spotting of errors is either difficult or impossible. The same problem exists when the informant is asked to classify his own response. To check on his computations is possible when the basic raw data are lacking.25

Processes used by coders in the offices include coding on the collection schedule near the entries made in the field, placing coded entries on a transcription sheet, or using a code card. Code cards and transcription sheets have one quality in common that tends to make one wary of their use. They both physically separate the code from the raw data making it difficult to edit or refer from the code to the schedule. The procedure which is, in effect, a compromise between the respondent or interviewer coding in the field and the office coding on transcription sheets or cards is that of placing the codes on the collection schedule near the entries made in the field. This also represents an intermediary step in the coding procedure because it involves the use of all of the information provided by the respondent and also makes

it possible for the keypunch operators to work from the schedules, thus saving clerical errors caused by the mere physical distance between the raw data and the codes. It must be kept in mind, however, at the time of questionnaire construction, that if this process is to be used it will be necessary to provide enough space on the schedule so that after all editing marks are made there will still be enough space in which to place the code. Another device which should be used in order to avoid confusion in finding the code is to use an entirely distinct color for the final codes. Also, wherever possible, the columns on the punch card into which each code should be placed should be printed on the schedule. This would involve the determination of the number of columns each question will occupy before the responses are set. It is most often sufficient to provide two columns for any one numerical variable since this will allow classification into 100 categories from 00 to 99. Exceptions will occur as in the case of income questions but even these situations can be handled by grouping the data or, if one knows that he will wish to use absolute figures, by allowing enough space for these particular codes.

Parten also provides us with a list of general principles and suggestions to help the surveyor to design codes and coding procedures[26] which we will summarize here, adding our own comments which are necessary to bring the suggestions up to date since her publication was written in 1950 and there have been many changes in coding and machine processing since that date.

1. Use a more detailed classification than will appear in the final published tables.

2. If hand tabulation is proposed, the codes do not have to be expressed in numerical classes. It might be preferable to use letters or abbreviations rather than numerical symbols to express qualitative categories, since errors of coding are less likely to arise if the classification symbol resembles the word or phrases appearing on the schedule. If letters are to be used as codes, avoid symbols which may be confused in different styles of handwriting and printing.

3. If codes are to be placed on punch cards it is desirable to use ten or fewer classes. With older equipment it is also possible to use 'x' and 'y' or zone punches to provide a total of twelve possible categories in each column but it is no longer advisable to use these punches to record data as they have come to have different meanings in the newer computer systems. Therefore, if it is expected that the number of categories for any variable will exceed 10, it is advisable to plan to use two columns for that variable.

4. During coding, if some of the entries recorded by the enumerator do not need to be coded, the item or number to be punched should be encircled in a distinguishing color. If the codes are placed on the collection schedule near the field entries it would be advisable to code even those questions which do not require any changes in that specific place on the schedule designated for coding rather than just circling the number elsewhere on the schedule and making the keypunch operator look for it.

5. Check codes for accuracy and completeness before they go through the tabulation process.

6. If complicated arithmetic computations must be made before an item

can be coded, the calculation should first be done and verified, the computations should be coded.

7. Insofar as possible, coding should be a routine operation. Questions requiring special attention should be settled by someone designated to handle problem cases not by the coders. If the coding is done by a group of persons who specialize in one or two sections, a final review of the schedule as a whole should be made by an editor-coder.

8. The staff of code clerks, under the direction of a coding supervisor, should be drawn from editors and interviewers, or office workers who are familiar with the definitions and methodology of the survey.

9. Detailed written coding instructions should be prepared so that uniform procedures are followed by all coders.

10. When setting up codes for numerical data, decide what rounding procedure to use. The procedure must be specified in the coding instructions.

11. Select standard or commonly used classifications whenever possible. By using classes which have been adopted by other studies, one takes advantage of the background data which can be used for interpreting the findings and testing the sample.

In setting up the data for machine processing and tabulation it is very important that the researcher have a detailed picture of what it is he wishes to obtain from this study. This includes not only the testing of general hypotheses but also a picture of most of the tables he wishes to obtain. Too often the researcher is so tempted by the ability of advanced computer techniques to produce vast numbers of tables in a short period of time that he ends up with an office filled

with computer output. Of course he cannot be expected to anticipate all the results of his study before processing and will most likely find several areas he wishes to pursue after examining the results of his preliminary tables but he must not let desire for detail prevent doing justice to the larger and more general findings of the study. Another source often used by researchers in preparing the outline for their tables is the results of research done by others in his field in other locations. It would, for example, be advisable for the surveyor to consult the census volumes or other related works to get ideas for setting up tables. Reliance upon the results of tests made by others with regard to the wordings of questions as well as the forms of presentation of the data is frequently necessary.

The research directors should acquaint themselves fully with the tabulation facilities that are available in their particular locations and make it their responsibility to either hire a person who is familiar with that equipment to do their data processing work or see to it that a person or persons working on the study becomes familiar with the use of the machinery. Most statistical research and computer centers have available to potential users complete descriptions of their equipment and provide customer consulting services. It is essential that the persons constructing the questionnaire and code cards consult with the machine experts to determine exactly what form the data should have to take advantage of machine technology. The ideal situation would be to have a person connected with the study from the beginning who is trained in the use of the particular type of equipment which will be used for data processing. This will insure the proper design

of the study and will also insure that the person who is doing the data processing will be familiar with the intricacies of the study and will be able to choose the best data processing techniques to obtain the results desired by the surveyors.

One final note on the handling and processing of punch cards is necessary. From the moment the cards have been punched, verified, and declared ready for tabulation, a second and possibly third deck should be made which are duplicates of the first deck. The reason for this will become obvious after the cards have been used for a very few runs. There are always problems with cards being warped or frayed, machines being out of adjustment, or any number of reasons why a card may not go through the machine smoothly.

The final process in the research design through which the data will have to pass before presentation to the public is that of evaluation.

Statistical Analysis

Once the basic data are gathered, coded, and punched, some process that reduces and summarizes the many separate observations is necessary in crder to understand the data. Depending upon the specific purposes of the study and the preferences and training of the researchers, the analysis could be very complex or relatively simple and straight-forward. At all levels of complexity however there are two main concerns. The first concern (descriptive statistics) is to describe some finding. The second of these (inferential statistics) is the need to assess the degree of confidence one may have that a given finding, based on a sample, is similar to what you would obtain if you observed the entire population.

A simple example would be the percentage of a sample of dwelling units that were classified substandard by some criterion. The percentage is the descriptive statistic. Using statistical inference procedures (which can be found in any standard statistical text[27]), it is possible to arrive at a range within which the population percentage (given the sample data) can be expected to lie within a given probability. The confidence one may have that a sample percentage is indeed similar to the (unknown) population percentage depends primarily upon the amount of variability in the sample data and the size of the sample.

In specific applications of 1) statistical description and 2) statistical inference, misapplication frequently occurs. Especially frequent is the use of inferential statistics as if they were capable of detecting theoretical as opposed to statistical significance. To demonstrate, for example, that sample data indicate that the correlation

between two variables is probably greater than zero in the population cannot be used as evidence that the correlation is theoretically significant. Theoretical significance depends upon the actual size of the correlation, not the probability level. Simply by increasing the sample size one can assure that a given descriptual statistic will be statistically significant.

The choice of specific types of descriptive statistics and their accompanying "tests of significance" should be made in the light of the measurement qualities of the data. For our purposes it can be said that there are three levels of measurement.[28] The first level is simple classification, for example, persons can be grouped according to religion, Catholic, Protestant, Jewish, Other. The second level involves an ordering of the classes; a measure of housing quality, for example, may assign scores of good, fair or poor to each of a sample of dwelling units. The three classes can be ordered in terms of the amount of quality. While the second level permits ordering only in terms of more or less of some characteristic, the third level permits ordering of classes in such a way that an increase in amount of the property from a score of 3 to a score of 4 is the same amount of increase as from 7 to 8. In other words, the intervals between classes are equal. An example would be a measure of density of occupancy (persons per room). This does not exhaust all the possible types of measurement but most kinds of measures used in social science can be included under these three.

Statistical measures (both descriptive and inferential) have been developed for each of the levels of measurement.[29] In terms of describing the correlation or co-variation between two properties or

variables a coefficient referred to as lambda may be used when relating two classifications; when relating two ordinal variables one may use gamma and for correlations between two interval scales product moment correlation should be used. These are the descriptive statistics; each of them may be tested for statistical significance.

The previously mentioned misapplication of inferential for descriptive statistics has been especially common when analyzing classificatory data. Chi-squared analyses have frequently been used where lambda or a similar measure of association should have been used. High level of "significance" with chi-square can be achieved even though the association between two classifications is very low. Probability levels from analysis of variance techniques should also not be mistaken for measures of association. There are several such measures that can be used in conjunction with analysis of variance.

The basic process of social-science analysis, although complex in some senses, amounts to no more, and no less, than noting the covariation between or among two or more variables.[30] In studying the association between two variables the first step is to establish the descriptive relationship using the statistics appropriate to the level of measurement. Once it is known, for example, that variable A increases as variable B increases one must ask whether this is essentially a correct finding in the sense that there is a meaningful relationship between A and B. It may be that the relationship is spurious, that is, caused by some other variable that is related to both A and B. One example of this is the finding that crime and delinquency occur in the same areas as poor housing. The relationship, at least in part,

is spurious due to the fact that differences between areas in terms of socioeconomic level are responsible for both poor housing and high crime rates. Spuriousness is detected by "controlling for" social class. There are many ways to control for other variables in an analysis but in essence it is an operation that attempts to establish whether the correlation between the original two variables changes or not when another is introduced.

Thus, we might find a correlation coefficient of 0.5 between crime rates and housing quality for the whole city. When we calculate this coefficient separately for areas that are high and low in socioeconomic terms (referred to as partial relationships) we would expect to find that the coefficients would drop to perhaps 0.2 if the original relationship were spurious.

Reduction in the partial coefficients does not necessarily indicate spuriousness, however. Spuriousness is only indicated if the theoretical meaning of the analysis suggests spuriousness. A similar example where the partial coefficients would drop is the correlation one might find between the quality of housing and distance from central city. If they increase together one might ask why they should. In part the relationship is again due to variations in socioeconomic status--the people who live farther out can afford to pay more for housing or the people who can pay more for housing live farther out. In this example we feel that the reason for the original relationship has been accounted for. In the previous example we feel that the relationship has been "explained away."

The second step in analysis, once the researcher is satisfied that the result is not spurious, then, is to attempt to interpret the finding by searching for variables that show why a finding is as it is, as shown in the latter example.

Of course, partial relationships may vary in any direction from the original relationship. It is possible to control for, say, socio-economic level and find the original relationship unchanged in the middle class, reversed in the lower, and strengthened in the upper class on almost any combination of these. In such cases, it may be necessary to continue the analysis separately for each class level.

Specific techniques that should be applied in each case are beyond the scope of this report and can be obtained from standard statistics and methodology texts.

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SECTION III. TYPES AND QUALITY OF HOUSING AND CHARACTERISTICS OF FAMILIES

The design of the research proposed in this report is based on the premise that effective solutions for the problem of lack of housing in any urban area lie in ascertaining what, if any, dynamics of change are operating in the urban society. Certain conditions of housing imposed by urban living are being taken for granted--that people in cities must live in houses and that the houses will have to meet a level of quality needed to protect the welfare of the group. A third assumption is that the society as a whole will look for ways to help the population who are unable for one or another reasons to meet the standard of housing that has been established.

In order to provide assistance in housing at any one point in time, it seems clear that first the components of the situation, the housing and the people, must be defined in terms of their characteristics. At the present time, and not only in developing countries, the urban housing problem is defined broadly, in terms of its two predominant characteristics: a low-income population living in low-quality housing. Obviously, if this situation is static--a current standard of housing that is the maximum attainable by the society with a substantial number of people living below that standard and constantly being augmented by others with similar characteristics--a welfare type of solution is called for. If the situation is dynamic, on the other hand--an urban

population in motion whose standards and housing are improving as their circumstances change but who are being replaced by incoming groups--then vastly different types of solution are called for.

As pointed out in Section II, a cross-sectional survey has well-defined advantages for housing surveys. Nevertheless, like other cross-sectional surveys, it examines the housing situation of the selected sample at one point in time. By its nature, it imposes a static quality that may obscure the potential for dynamism the situation may have. Studies of slum housing, for example, have been useful for a number of purposes, but a sample limited to one type of housing and population does not have the scope necessary to understand the housing situation, since it can only show "what is" at only one level of society. Comparisons limited to families living in slum areas and public-housing projects, also valuable for other purposes, are equally inadequate. One reason is, of course, that, given the methods of selecting families for public housing, the project sample is likely to be only a biased sample of the population in need of housing. Since families in the projects exercise choice at least to the extent of not rejecting the move to public housing, further bias may be introduced. The results may explain why certain families prefer housing projects to slums. They cannot be generalized to predict potential action with respect to housing by a low-income population.

For this purpose, it is necessary to bring into the analysis a sample of the urban population whose characteristics have permitted a wider range of choice.[1]

The method proposed is an examination of a sample of populations living in types of neighborhoods (defined primarily on the basis of housing types) that are clearly differentiated from each other in some significant characteristics. The types of neighborhood considered necessary are slum areas (of the squatter settlement type), public housing, and better-quality private housing in standard developments. (These types worked well in San Juan, Puerto Rico. The number of types and the specific neighborhood types will need to be adjusted for a given situation to take account of the patterns in a given city.)

The focus of the research is on the low and lower-middle income urban population. Consequently, the neighborhood areas selected are within the reach of families at different levels of low income. The discriminating variable, however, is housing-neighborhood type, not a specific population characteristic (such as income). The purpose of the research is not to ascertain how an entire urban population below a selected income level is being housed. Census data have been used in this connection and have been usually adequate to demonstrate a large unfilled housing

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[1]See Alvin L. Schorr, Slums and Social Insecurity, Washington, D.C.: Government Printing Office, 1966, p. 34, where upward residential mobility of the middle class in the United States is compared with the situation of lower-income groups.

need. Rather, the purpose is to determine what the elements of dynamism are with respect to housing improvement: what are the specific controlling factors (characteristics and aspirations) and what is the needed action (public housing, better private housing, different location, home ownership, or other form of improvement as perceived by the families).

As with all research, the limitations of the method have to be recognized--four different groups of people, for example, at one point in time are not the same people over a period of time. Further, external or other conditions may have been an impelling force for one group which no longer operate or are without significance for another group. But these are cautions for the analysis, not an invalidation of the methodology.

Types of Housing and Neighborhood

Four types of housing neighborhoods are called for in the proposed design, each distinguishable from the others in some important characteristic, as indicated earlier. Each should represent a different level of cost or quality, or both. If the neighborhoods selected are kept within the range open to some group with lower incomes the distances in terms of housing quality between levels probably should be broad. The four types are: squatter-type slum neighborhoods, public-housing projects, and two types of better-quality standard private housing neighborhoods.

Four neighborhood types are recommended because of the relevance to the situation in San Juan, which required a considerable amount of prior analysis to arrive at appropriate types.

It is expected that practically all municipalities in Latin America will have three of the well-known types of housing neighborhoods: squatter slums, apartment-type public-housing projects, and the relatively low-cost, good-quality housing neighborhoods, usually suburban, which are more or less typical of lower-cost middle-class housing in practically every country. The other type of better private housing, however, is difficult to define for all cities. In some cities in the United States, the type of neighborhood is characterized by lower cost (than typical middle-class white-collar suburbs), smaller lots (that is, houses closer together), and location within cities. In the San Juan sample, the lower-class neighborhood area was an area

of older houses in a partly commercialized, densely-settled area near the central city. The principal criteria were: being within the range of aspiration, even though remote in actuality, of those living in the slums or public housing, and having a lower cost than the better of the two private-housing neighborhoods. The difference in cost should result from some feature of house, location, or neighborhood that creates the difference in cost by reason of being of lower (even though still standard) quality. In other words, the second private-housing neighborhood is not simply a lower-cost version of the first.

With respect to the houses, the squatter areas will probably have a large supply of improvised housing units (as defined for census purposes), frequently on public or illegally held land, usually around urban peripheries. There may be considerable variation among slum areas within a city, however. Some slum areas, for example, may have "improvable" housing; others may not.[2] It may be necessary, therefore, to include two types in this category if there are clear indications prior to a survey that can be used to differentiate the two types. Some slums may have achieved a certain amount of permanence in all respects except

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[2] See United Nations, Department of Economic and Social Affairs, Methods for Establishing Targets and Standards for Housing and Environmental Development, New York: United Nations, 1968, p. 43, for definition of "improvable."

the housing; others may be completely unequipped with any type of services. The slum housing neighborhoods should be selected on basis of their known objective physical characteristics, rather than supposed differences in the social psychology of the resident population. Public housing may have some differences; newer projects, for example, may have more amenities. An important consideration for public housing (and perhaps for other neighborhood areas as well) is that the majority of families should have lived there long enough to have become familiar with the advantages and disadvantages of their housing or to have become influenced by whatever ways this type of housing affects its residents.

Characteristics of the housing

A number of characteristics of the house and neighborhood enter into the analysis. Neighborhood and other location features are customarily obtained by observation or from general sources. The physical aspects of neighborhood quality are measured by density of the settlement, layout of the area, and urban services provided.

Specific features of the location on which data are needed are: approximate age of the area as residential; location with respect to rest of the city and to places of industrial or service employment; types of shopping facilities nearby; availability of schools (nursery, kindergarten, elementary, and secondary); other municipal services (transportation, water, sewer systems, street lighting, garbage collection and, frequently, paved streets); space around and between houses; gardens; presence of livestock; general cleanliness; recreation facilities for children and adults; volume of traffic, and nuisances. Layout of the area with respect to the city should be examined; that is, whether other land uses seem to be encroaching or whether there is room for expansion. How the area was first settled may be relevant in some cases; that is, for example, whether it resulted from a "planned invasion" of squatters; how the land was acquired, whether settlement was encouraged by the government, directly (as through designation of areas for rehabilitation), or indirectly (through encouragement of private builders).

Important characteristics of houses are their type, age, material, size, quality, cost, and how they are being used (as a housing unit only, business on premises or in house, rooms shared or rented, and so forth). The units discussed in this section are the general items of age, type and material of construction, and costs. Since costs differ appreciably by type of tenure and have different implications for owners than for renters, units of measurement related to tenure are included in the discussion. Other characteristics of the house are discussed with family characteristics or other variables, where their significance is demonstrated. Size, for instance, is discussed in relation to size of family, and service-facility items are considered under measures of quality.

Age and type of construction. These items are standard housing census items and one of their uses in sample surveys is to indicate comparability with census data. Age and type of construction are sometimes useful in an analysis of probabl costs of maintenance. Material of construction (that is, material of the outer walls) is one factor in durability of the structure and also in defining how well the house protects the family from the elements, neighborhood, and nuisances.

Type of construction is used here to include the two items of material used in construction and the type of structure,[3] as

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[3] "Structural type" is the unit used in censuses to differentiate between conventional (standard) dwellings and the various types of marginal housing units. Use of the term in this report varies from that practice.

freestanding, row, multistory, or other type prevalent in a particular area.

In sample surveys, data on age of the housing unit are collected only from owner occupants (renters are much less likely to know the age of the dwelling unit). Year or period of construction is used to denote the age. Where possible, the exact year of construction is ascertained for houses ten years old or less. The year of construction of older houses is usually obtained in periods of five or ten years. Census recommendations to select periods in terms of significant events (prior to World War II, for example) should be adopted, with periods perhaps referred to local occurrences Owner-occupants also are asked to supply information on whether the house was built by a builder-contractor, friends and neighbors, or self-built.

Tenure and costs. Three basic types of tenure are usually found in housing surveys: renters, owners, and rent-free. The rent-free group is usually small and frequently may be combined with renters for a large part of the analysis.

The implications of renting and owning for a housing situation are very different, and tenure is one of the most important variables used throughout the analysis. Home ownership in many societies is revealed as an ideal to be achieved or as a high goal that marks achievement. Attitudes and aspirations of renters and owners as to their housing differ markedly. The owned home has considerable economic significance as well. For low-income groups in particular, it may represent an important security, especially where economic conditions are unstable. A self-built home or a house free of mortgage may require only small expenditure, if any, for shelter during crises, while rent continues. An owned house also is a potential source of funds for temporary emergencies. In the San Juan sample, for example, respondents in the squatter slum neighborhoods reported short-term mortgages of small amounts.[4]

The principal cost of housing is, of course, the amount of monthly (or periodic) rent being paid for shelter space or, for owner-occupants, the initial cost of the house. In addition, data on certain on-going expenses of operation (water, electricity,

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[4] See also Richard Patch, "La Parodon, Lima's Market" in City and Nation in the Developing World, New York: American Universities Field Staff [illegible], 1968, pp. 177-192

gas, heat, or other utility) are collected, regardless of type of tenure. For owner-occupants, costs and types of maintenance and property improvements are recorded in detail.[5] For renters and those living rent-free, it is useful also to learn whether other services, such as furniture, are included in their housing.

Techniques of data collection on housing expenditure, classification of types of expenditure, problems of accuracy, and suggested solutions have received considerable attention in the literature on household surveys, since housing is an important item in total expenditure patterns.[6] In housing sample surveys, the data are used for different purposes, according to type of tenure. Among renters and those living rent-free, ownership of furniture, for example, indicates a certain investment in housing. Those living rent-free and paying for utilities are subject to some housing cost. For homeowners, the importance of the expenditure on utilities can be investigated as a separate item. For renters, the main purpose of costs of utilities is to have

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[5] Other costs of ownership, such as taxes, insurance, and the like, are optional units, since they serve little purpose in a general housing sample survey. Also, data on them may be obtained from official sources.

[6] United Nations, Statistical Office, Handbook of Household Surveys, New York: United Nations, 1964, is a useful guide. Other sources are publications of the United States Bureau of Labor Statistics and the International Labour Office, and the Case Studies prepared by the U.S. Census Bureau for the Agency for International Development.

comparable data on rents being paid, since there may be considerable variation in services furnished with rent, even within a housing neighborhood. In some municipalities, the extent to which sizable proportions of lower-income groups are accustomed to making the regular type of payment required by utilities may be important.

With respect to the value of furnishings included in contract rents (the cash rent actually being paid), one suggested technique is to deduct an estimated monthly cost from the rent paid for furnished housing units. In general, furnishings that may make a difference in rents are likely to be large items of household equipment (stoves, refrigerators, and so forth). Whether or not a special technique is needed depends largely on the size of the group in the sample -- in housing sample surveys, the difference in housing cost is usually too small to be of great significance.

The cost of utilities for renters who are paying their own are customarily added to their reported contract rent and the figure of gross rent thus obtained used in the analysis. Another possible technique is to subtract an average cost of utilities from the contract rents which include them. An average cost of utilities may be used under some circumstances, especially as costs of utilities as reported by respondents may be inaccurate.

The principal considerations with respect to costs of utilities depend on the importance of the item in the sample. In housing studies in the United States, the item has represented an important variation in costs between owners and renters, and between rental units, chiefly because of regional variations in the

relatively high cost of heating houses. Reid investigated utility costs (heat, fuel, and lighting) in her study of housing costs in relation to income and found only relatively small variation in demand for utilities by differences in income, the main factor in variation of heating costs being, as expected, climate.[7]

Whether or not similar homogeneity in demand will be found in municipalities in developing countries or when it can be expected is not predictable from information available. Further, the variations in availability among different utilities and practices in paying for them are too numerous for profitable speculation. It can be said that costs of utilities may be highly important for some low-income families. Back, for instance, suggests that having to make even small payments regularly for utilities means an added burden for families who move to public housing.[8] Turner points out that the added costs of municipal services, and especially of dwellings completely equipped with service-facilities, is a serious obstacle to low-income families not only in acquiring such a house but also in being able to pay for it.[9]

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[7]Margaret G. Reid, Housing and Income, Chicago, Ill.: The University of Chicago Press, 1962, p. 54.

[8]Kurt W. Back, Slums, Projects, and People, Durham, N.C.: Duke University Press, 1962, p. 37.

[9]John C. Turner, "The Squatter Settlement: Architecture That Works," Architectural Design, Vol. 38, No. 8 (August, 1968), p. 357.

Clearly, decisions with respect to how the costs of utilities should be handled will need to be made on the basis of accurate information on local practices. It is suggested that, where costs of utilities are likely to be an important factor in the housing decisions of families, attitudes toward the additional costs be explored in the same manner as other attitudes.

If there is a possibility that in some areas land rent is being paid separately by renters (or those living rent-free), the amount being paid may be combined with contract rent for some purposes of the analysis.

Contract rent is a good indicator of current housing costs in the different neighborhood areas and serves a variety of analytic purposes. Certain background information is needed in interpreting the data, particularly concerning factors that may be operating to change the usual relationship between current rents and current housing cost. Rent control is one example.

Since rent represents actual expenditure, the proportion of income being spent on rent can be computed, where desired. One interesting feature in the San Juan data on renters was that, though they were lower, rents in the slum neighborhoods were not markedly less than in the other two neighborhoods. In the lower-class neighborhood, rents were considerably lower than in the lower-middle-class neighborhood, but families in the former were spending almost as high a proportion of income on rent as were the latter (16.5 percent, compared with 18 percent). Considering the difference in the housing, the proportion of income being spent on rent in the

slum neighborhoods, 13 percent, seems high even though it compares favorably with rent-income figures in the other two neighborhoods. A complaint frequently made against public housing as costing a higher percent of income than private rental housing in slum areas did not appear to hold in San Juan, where such rents, on an average, were $17 a month and represented 11 percent of average income.

Although the group living rent-free may not be large, it should be possible to identify them where necessary. Additional information compiled for this group is the relationship of the head of the household to the owner of the house. If related, the degree of relationship is recorded; if not related, useful information would be whether the house is provided by an employer or some other person. Employer-provided housing is a form of income in kind. In household surveys, it is taken into account by adding an imputed rental value for the house to family income. In housing sample surveys, actual cash family income maybe more important for most analytic purposes, and the technique is not customarily used. Another consideration is that employer-provided housing is not a common situation in most cities and such a group is likely to be very small.

Determining the housing expenditures of homeowners is not usually a feasible operation in sample surveys. Where contract rent represents current costs of shelter space, it is an indicator both of housing expenditure and housing consumption. No similar unit has been devised as yet that expresses both expenditure and consumption for homeowners. Current market value, the indicator most often used, expresses the consumption level of housing for

homeowners. On the basis of data on estimated current rental value of owner units and actual reported expenditures on housing of homeowners as reported in an urban consumption survey made in the United States in 1941, Reid explored a possible relationship between homeowners' expenditures and consumption. Her finding was that reported actual expenditures were about 48 percent of the consumption level of housing indicated by estimated rental value.[10] Obviously, much more research of this type is needed. Where some groups may be spending little or nothing for shelter, current market value of the owned home can be a poor indicator of their housing cost.

Determining homeowners' current expenditures on housing is a matter of vital concern in household surveys, and the problems associated with it are fully set forth in the literature on that subject. Generally speaking, the tabulations of expenditures on operation, maintenance, improvements, taxes, and the like do not take into account the flow of services the owner-occupant receives from the house. Neither do they indicate, without manipulation, the proportion of expenditure that represents investment and the proportion that represents expense. The technique used in household surveys is to add net imputed rental value to income, the rationale being that the owner of a house is receiving this form of income as much when he occupies the house himself as when he receives rent from a tenant. Net rentalvalue is the estimated (imputed) current

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[10] Housing and Income, op. cit., p. 52.

rental value less expenditures made on housing items during an equivalent selected period. The imputed rental value is a selected percent of estimated current market value.[11]

The data on individual units of homeowners' costs and investments, nevertheless, are extremely important for housing analyses and much of it is pertinent throughout the analysis. They are, consequently, recorded in considerable detail.

Data on costs of owners include, in addition to those indicated above, original cost of the house, how the house was or is being paid for, and owner's estimate of current market value, supplemented by the interviewer's estimate. Usually, the two sets of estimates show surprisingly good agreement. In San Juan, the interviewers were instructed to estimate the market value of the house only when the respondent was unable to make an estimate or where the estimate by the respondent seemed far out of line.

Consumption levels of housing in the different neighborhood areas is a primary topic in the research design being proposed. As stated above, current market value is the indicator of housing consumption of owner-occupants. Data on current market values of owner-occupied homes is included in some censuses or may be available from other official collections of data. Current market value expresses in one unit depreciation of and interest on capital, owner's equity, property taxes, and like costs of

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[11] Discussion of the techniques used to determine imputed rental value can be found in Handbook of Household Surveys, op. cit., and other publications on family-living studies and household surveys.

ownership. It serves several other purposes in the analysis, only a few of which are mentioned below.

Current market value and original cost may be compared to show increase (or decrease) on the original investment. In addition to the usual determinants of market value, heavy demand may operate in low-cost housing neighborhoods to exert an abnormal effect on the price of housing. Speaking of the situation in the United States, Grigsby states:

> In the medium and upper-quality brackets the explanation of a slow rate of depreciation lies in the very gradual pace of deterioration and obsolescence...In the lower-quality inventory, where dwellings are already deteriorated and obsolescent, the slow rate of depreciation has to be explained on other grounds. Here the reason is simply that dwelling units which meet minimum standards of health and safety are in short supply. Were it not for this fact, the market value of structures which barely conform to local housing codes would drop to a much lower level, as happens with old cars and other consumer durables.[12]

In the San Juan data, for example, average current market value of the squatter houses was about $3,600. Depending on time of purchase or time of construction, to some extent, they had at least doubled in value, and some had more than doubled. The areas had been furnished with some urban facilities, but the houses were poor in quality. In addition, their environmental quality was low, as they were situated along a channel in which runoff rain water and sewer deposits from a large part of Santurce

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[12] William K. Grigsby, Housing Markets and Public Policy, Philadelphia, Pa.: University of Pennsylvania Press, 1963, p. 238.

collected before draining into the bay. Values were higher, as might be expected, in the other two areas, about $13,000 in the lower-middle-class area and about $11,000 in the lower-class, on the average, and had appreciated more rapidly. A similar rise in value is reported in slum housing in the new town of Ciudad Guyana in Venezuela, where ranchos in a two-year old clearance area were expropriated at a cost of $310 and in a ten-year old one at a cost of $390.[13] Such relatively rapid increases in value have some interesting implications for decisions on urban housing. So far as homeowning families are concerned, current market value expresses an important, if not the most important, asset, under conditions such as these.

Current market value of the house is usually closely correlated with current income. Discrepancies in this respect may indicate a disadvantaged group with respect to income change. Several studies in the United States, for instance, indicate abnormally high housing consumption, compared with current incomes, for large proportions of the aged. Incomes of that group, most of whom are retired, are relatively stationary, compared with incomes of those still in the labor force.

The housing consumption level of owners and renters may be compared for some purposes. In some housing analyses, the two

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[13]Rafael Corrada, "The Housing Development Program for Ciudad Guayana," in Charles A. Frankenhoff, ed., Housing Policy for a Developing Latin Economy, Rio Piedras: University of Puerto Rico, Social Science Research Center, 1966, p. 112.

groups have been combined. The comparison is valid, of course, only when contract rent and current market value reflect true housing costs (or, for some purposes, when they reflect value realized from the house.) One method of doing this is by using the imputed rental value described above to have an ownership figure comparable with contract rent (usually a monthly figure). If this technique is used, the appropriate percent of current market value to be used for imputed current rent probably can be determined more accurately from local authorities than by asking owners in the sample for their estimates.

How the house was or is being paid for is essential basic data. It should be possible to distinguish three groups for the analysis: those who are currently paying off a mortgage, those who have paid off a mortgage, and those who paid cash. The latter two groups will probably be combined, but the information should be available. Some United States studies, for example, have indicated a tendency for those who have paid off a mortgage to spend more than other groups on house-related items. Some owners may also use equity in the present home as a down payment on the purchase of a better one, although naturally a mortgage need not be fully paid up for this action to be carried out.

The data also should indicate whether current mortgages were assumed for the purchase of the house, for some other purpose related to housing, or for a general purpose. As mentioned earlier, where the house is an asset, it represents a source of funds for temporary emergencies or other purposes. If the house was paid

for in cash or a down payment was made, the source of the funds, as from savings, borrowed from friends, relatives, employer, or lending institution, should be asked, for general information on a subject about which little is presently known. Self-built houses may or may not have mortgages to cover costs of materials and equipment; in either case, information on actual practice is seriously lacking at present.

The type of mortgage currently held is important, as straight-term or amortized. Both types of mortgage are at the owner's risk, but some equity is being built up under an amortized mortgage while under a straight-term mortgage the owner may be paying only interest. Information on how the owner plans to pay off a straight-term mortgage is useful, if the use of that type of mortgage is fairly common practice in the area. Terms of the mortgage and the amount of monthly payments are standard data to be collected.

A group which, as indicated in Section IV, may be highly important are the first-time owners. A set of questions on home ownership prior to ownership of the present house is, therefore, included. This information is also important as a measure of housing mobility in the sense of passing from renting to ownership.

Data on ownership of land should be collected for homeowners, where it cannot be assumed that ownership of a house means ownership of the lot. If the land is not owned, the amount of land rent should be ascertained. Where the land is owned, whether it was purchased with the house, or separately, or how acquired,

and how paid for (cash or included in a mortgage) provides information on current practices. The ramifications of the land situation in all urban areas cannot be dealt with adequately here, especially since it may be important in some municipalities and of little consequence in others. The questions, therefore, should be designed on basis of thorough-going knowledge of the local situation.

The details needed in connection with data on homeowner's maintenance, repairs, and improvements, as well as the problems of collection, are discussed in Section IV, "Improvement of Owner-Occupied Housing."

Quality of Housing

The important aspect of quality of housing in a sample survey is its function as an indicator of the level of living achieved by the families in the different housing neighborhoods. Housing is an indicator of national levels of living, and quality of the housing of a country may be a more important indication of its value as a national resource than quantity of the stock alone.

> It is realized that many of these data do not lend themselves easily to international comparisons because of differences in climate, kinship, composition of families, traditions, and values.[14]

Quality in a dwelling unit is made up of both internal and external features.

> The quality of a dwelling is to a certain extent determined by its size, dimension, and layout. Space standards, daylight and sunshine conditions and habitability are examples of characteristics determining the quality in this respect. The quality of the dwelling is also determined by the internal equipment, i.e. hygienic installations and kitchen, laundry and heating facilities, and by the indoor climate and sound transmission. The latter are mainly determined by the method and materials used in the construction and maintenance of the building. Public services, such as watermains, common sewers, refuse removal, gas and electricity supply, are of importance for the dwelling's standard of comfort. Finally, daylight and sunshine conditions and noise level are influenced not only by design but also by town-planning factors.[15]

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[14]United Nations Statistical Office, International Definition and Measurement of Levels of Living: An Interim Guide, New York: United Nations, 1961, p. 12.

[15]United Nations, Economic Commission for Europe, Quality of Dwellings and Housing Areas, New York: United Nations, 1967, p. 7.

Concern over quality of housing is a public affair because of its relationship to public health, urban redevelopment, and estimates of housing needs. Various procedures to determine quality of the housing stock on a national basis are being followed in most countries. Consequently, examinations of quality in sample surveys should be made within the framework used for national determinations, supplemented by additional data pertinent to more localized inquiries. Obviously, sample surveys can collect more detail in order to analyze in depth the interaction between families and housing, to provide realistic data on operative standards for housing in relation to ability to pay, assessment of housing progress from the standpoint of utilization and wider distribution of amenities, and many other topics about which, at present, relatively little is known. Instructions on relating data on housing items to local conditions within an established framework may be pertinent:

> The indicators shown ...should be interpreted with due regard to certain background information concerning climate, culture, the degree of urbanization and the demographic, economic and social structure of the population... As levels of housing conditions improve, differentiation between countries may be expected to diminish and the significance of the indicators for this purpose to diminish also.... Certain standards are stated or implied in the indicators and since they represent agreed-upon minimum levels of housing, these standards should be adhered to for purposes of international comparison. However, for national purposes, adjustments may be made in the levels to suit prevailing housing conditions ....Adjustments of this nature may be accomplished within the procedures outlined, since the data needed to provide indicators with the standards required

> additional data is required, it could be obtained simply by the addition of further classifications to the items already proposed for collection.[16]

Comparability with census data provides a means of placing the data on housing from the sample survey in line with national norms and objectives and also with levels of housing achieved by other nations and thus helps to provide some realistic standards for judging housing situations.

> The first essential in discussing housing is to rid oneself of standards customary in Western countries. In this respect housing does, I think, differ in kind from some other components. In health, for example, one can judge levels against fairly universal standards; standards imported from abroad may be out of reach and unrealistic for present-day Jamaica, but there is some degree of international uniformity about the goal ultimately aimed at. Not so with housing. Indeed, to put the point at its most extreme, the very importance of housing is different in Jamaica than in, say, England. In the latter, to have a roof over one's head is a necessity of the very first order; in the climate of Jamaica, it is not of quite such urgent importance (although the importance of so constructing houses that they will stand up to hurricanes, earthquakes and severe rains is much greater).[17]

As already implied, standards in housing are set by groups of experts, usually at the national level. In other words, there is no one optimum standard or norm of adequate housing that is universally applicable. Optimum standards of adequate nutrition, for example, have been established by means of "physiological

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[16] Handbook of Household Surveys, op. cit., p. 64.

[17] C. A. Moser, The Measurement of Levels of Living, with Special Reference to Jamaica, London: Her Majesty's Stationery Office, 1957, p. 68.

vitamins" and take into account individual variations with age, sex, and physical activity.[18] The opinion of housing experts rests on a less firm foundation, since it is based on housing experience within a country, cultural attitudes and practices, and results of scientific investigations.[19] Considerations of health and safety, of the individual, the family, and the urban population provide the foundation. The manner in which these basic requirements may be met varies among countries. Further, standards tend to change over time. Some housing conditions may be temporarily acceptable that later would not be satisfactory either to private families or public agencies as standards rise with social change and economic progress. The characteristics and aspirations of the occupants may. in some circumstances provide excellent clues to the quality of the total environment. It has been pointed out that:

> Judgments of housing situations, of space, and space requirements, of design features and equipment items,

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[18]International Labour Office, The Worker's Standard of of Living, London: P.S. King & Son, Ltd., 1938, p. 36

[19]Quality of Dwellings and Housing Areas, op. cit., p. 4.

Two other considerations would seem to be relevant to the promulgation of standards. One is the private ownership of housing, under which the owner must assume the cost of compliance with regulations. The other is that standards of quality are usually applied after a large supply of urban housing has been built. Families who can afford a higher level of housing tend to occupy housing of better quality, and the nonstandard housing is utilized by lower-income families. The economic life of housing of poor quality thus may be considerably longer than its physical condition may warrant. Both municipalities and families are involved in what is essentially the same decision: not how much quality is desirable but rather, how much quality can be afforded at a given location at a given time.

There is substantial evidence that poor housing and poor health are correlated. One study linked specific diseases to specific housing characteristics and demonstrated a causal relationship. Acute respiratory diseases, for example, stemmed from multiple use of toilet and water facilities, inadequate heating, or ventilation, and inadequate and crowded sleeping arrangements. Similar housing characteristics contributed to

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[20]Richard U. Ratcliff, "Housing Standards," in William L.C. Wheaton, Grace Milgram, and Margy Ellin Meyerson, Urban Housing, New York: The Free Press, 1966, p. 392. For discussion of applicability of international and national standards, see United Nations, Statistical Office, Methods of Estimating Housing Needs, Studies in Methods, Series F, No. 12, New York: United Nations pp. 8, 11

and minor digestive diseases and enteritis were related to inadequate storage facilities for food and to inadequate facilities for personal hygiene. Accidents in the home, as might be expected, were definitely a result of structural deficiencies in the dwelling unit, poor lighting, and to overcrowding around work areas.[21]

The linkages established by Wilner between health and poor housing have not been, as yet, established for the less tangible psychological and social effects. There is abundant evidence of poor social conditions in many areas of low-quality housing, but it has not been possible to relate them to a specific housing characteristic and, sometimes, not to the general housing condition. A recent study explored the effects of different housing environments on the development of children under Project Head Start. In that study, no difference in school performance was found between children living in slums and children living in public housing. The author concludes:

> Rather than acting as a direct controlling influence in a child's growth and development, the housing environment may simply provide the setting or the conditioning variable which encourages or inhibits the influence of other variables in the social environment.[22]

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[21]Daniel J. Wilner, et al., The Housing Environment and Family Life, Baltimore, Md.: The Johns Hopkins Press, 1962.

[22]Robert Ray Rice, "The Effects of Project Head Start and Differential Housing Environments upon Child Development," Ph.D. dissertation, Cornell University, June, 1967, pp. 84-85.

suggested as a means of "accounting for differences in reaction between individuals of the same general background."[23]

Inadequate space in the dwelling is one indicator of a possible stressful situation but the evidence suggests that cultural definitions play a crucial role in determining the direction of effect. That is, a high value may be placed on privacy in some cultures, while in others isolation from other family members or from neighbors can be stressful situations. So far, at least, simple measures of crowding have not been precise enough to arrive at generalizations about psychological or social effects of inadequate space.

Sample survey investigations provide one means of pursuing investigations of this type, and there is clearly a substantial need for research on the subject. The topic is not specifically recommended for inclusion in a sample survey designed to measure housing conditions, especially where the focus is on improving housing situations, since experimental designs such as that used by Wilner are necessary for safe inferences about the factors involved.

Regardless of intercultural or intergroup differences in standards, the major aspects that usually enter into definitions of quality of housing are the external structural condition and internal space of the unit, the community services and household

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[23]Alvin L. Schorr, op. cit., pp. 12-13.

In housing studies and many national censuses, data are collected on services and facilities related to sanitation, artificial lighting, and preparation and storage of food. A unit of measurement is usually established to indicate overcrowding in the dwelling. Structural condition is surveyed either directly, through items related to state of repair, or indirectly, through data on age of house, materials used in construction, and type of construction (permanent or temporary). While some aspects of quality such as natural lighting, ventilation, and noise levels are not considered directly, information isavailable on them at the local level and, for some, indirectly from census topics. Material used in construction, for example, gives some indication of exposure to noise within housing units.

Frequently, the neighborhood may be seriously lacking in quality independently of the condition of the individual dwelling units. A number of factors enter into considerations of quality of neighborhoods, and regulations concerning them or evaluations of their effects are made by municipalities or other local authorities. As yet, however, no one "comprehensive but simple" method has been developed that can be applied on a national basis.

> The nearest approach to a special appraisal system for measuring the quality of neighbourhood conditions and facilities other than housing which affect the level of living in residential areas, is the American Public Health Association survey technique, Appraisal of Neighborhood Environment. The general satisfactoriness of a district is judged by a system of defects and basic

> associated with threats to health, safety and amenity, such as excessive land crowding, periodic flooding of low-lying areas, excessive noise, fire hazard, smoke or other nuisances from non-residential sources and traffic hazards or disturbance from major thoroughfares or railroads. This appraisal method, however, is detailed and expensive...[24]

This measure is, of course, heavily influenced by United States values and standards.

Several countries appraise the quality of urban neighborhoods in relation to width of streets, open spaces, proximity of objectionable industries, density, and similar features. Methods of neighborhood appraisal so far devised, however, are not as well developed nor as reliable as some of the methods of measuring dewelling quality, and, consequently, evaluations of neighborhood deficiencies remains "less formal and more subjective."[25] In the U. S. S. R. and some other countries, research is presently being conducted on the development of a comprehensive measure of the quality of entire housing areas. In the United States, the Bureau of the Census has as an objective the development of an index of housing quality that will also include neighborhood quality, within the limitations of what is feasibly possible in decennial censuses:

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[24] United Nations, Economic Commission for Europe, Secretariat, Report on the Urban Renewal Symposium Organized by the Housing Committee of the United Nations Economic Commission for Europe and Held in Geneva in June 1961, Geneva: United Nations, 1961, p. 27.

[25] Ibid., p. 28.

> individual units. For this, it is necessary to consider certain factors other than those peculiar to the structure itself. These other factors would constitute measurements of neighborhood or environmental quality. They would comprise, in part, such aspects of the environment as the presence of obnoxious odors, certain types of industry, high traffic density, high land use density, and the average quality of the individual units in a given area. Implicit in this research is the assumption that the basic criteria set forth above are the desired criteria. Measurements of housing and neighborhood quality should identify (1) the location and the quantity of housing with conditions that are detrimental to health and safety, and (2) the location and quantity of housing not meeting agreed-upon minimum standards for the well-being of the occupants.[26]

Although the neighborhood exerts a strong influence on the satisfactoriness of a dwelling unit, it would seem to be methodologically sounder to avoid mixing the two. The quality of a dwelling unit can be measured without concern for the neighborhood. Interpretations of dwelling-unit quality, of course, should be made in the context of the quality of the neighborhood. The latter, however, must be measured independently. To assign the score of neighborhood quality to a dwelling unit is not the same as nor a substitute for assigning the dwelling unit its own quality score.

In sample surveys, where quality of the house is one aspect of the research design, four components of quality may be taken into

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[26]United States, Bureau of the Census, Measuring the Quality of Housing: An Appraisal of Census Statistics and Methods., Working Paper No. 25, Washington, D.C.: The Bureau, 1967, p. 3.

services and facilities, density of occupancy, and availability of certain household equipment.[27]

It can be seen that there is no inherent relationship among the four indicators of quality in the sense that one causes another. It is to be expected, however, that these indicators will be closely related to one another. Each aspect requires a different unit of measurement. Each, in addition, for most purposes needs to be evaluated separately, since the causes of deficiency may be house-related, family-related, or location-related. A house, for example, may be in a poor state of repair because of faulty original construction, but it may lack sanitary facilities because no municipal services have been provided in the area. A housing unit of good quality may be overcrowded, but the overcrowding may come about because of family size as much as from house size. One component, the selected items of household equipment, is not a measure of deficiency as such, but of differences in levels of living.

For objective evaluation of levels of quality among the units in the sample, and comparison with national and international data, two aspects of quality, structural condition (including level of care and maintenance) and service-facilities available

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[27] Subjects such as inadequacy of ventilation, natural lighting, and the like, with techniques presently available, seem better suited to housing surveys designed to explore health conditions.

separately and together, are the basis for estimates of housing needs, urban planning with respect to housing, and local appraisals and action with respect to housing.

The following section first describes the units of measurements for structural condition and service-facilities, followed by a brief discussion of the Index of Quality developed for the San Juan pilot study. Measures of adequacy of space in the housing unit are described next, followed by a discussion of the use of selected items of household equipment and furnishings as indicators of housing levels and standards.

Structural condition

Structural condition is the most visible sign of poor or inadequate housing. At the same time, it has proved to be the most difficult aspect of quality to measure. Structural condition has received more attention at local levels than at the national level, since, usually, responsibilities for safety lie with municipalities. Further, interest in structural condition has been evinced principally in countries with large existing stocks of housing built at different times and to different sets of standards. Countries faced with problems of building large quantities of new housing for various reasons have been more

In countries where structural condition (or state of repair) of individual dwellings has been evaluated, it has been done principally through the use of a point-rating system in sample surveys. In national censuses of housing, age of structure and type of material used in the outside walls have been utilized as indicators of probable replacement needs.[29] In order to distinguish between housing suitable and not suitable for habitation, housing is categorized as "conventional dwelling units" and "marginal dwelling units". Similar techniques are recommended for the 1970 censuses of housing in order to have uniform data on housing conditions for international comparisons. Core dwellings, if they have one room in addition to the sanitary core are to be considered conventional dwelling units, as an indication of improved housing situation. Improvised housing units in and around urban areas are a subcategory under "Marginal Housing Units" and defined as follows.

> An improvised housing unit is an independent, makeshift shelter or structure built of waste materials and without a predetermined plan, for the purpose of habitation by one household and which is being utilized as living quarters at the time of the census.... There are many borderline

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[28] Quality of Dwellings and Housing Areas, op.cit., p. 3.

[29] United Nations, Techniques of Surveying a Country's Housing Situation, including Estimating of Current and Future Housing Requirements, Geneva: United Nations, 1962, p. 6.

The principal purpose served by the classification is providing data for estimating housing needs. One principal component of estimates of housing need is the number of dwellings required for households occupying living quarters of an unacceptable type. Among other types of urban marginal housing units, the improvised units fall into that category:

> Under almost all circumstances such places of abode represent unacceptable housing and they may be usefully grouped together in order to analyze the housing conditions of the population and for the purpose of estimating housing needs.[31]

Even with a focus on slum clearance, it seems apparent that one component of housing need is not identifiable from census data under the recommendations: the number of living quarters of an acceptable type in need of repair or replacement, for estimates of present housing needs, and living quarters that will require maintenance and repairs, for estimating future needs. This component is expected to be important in many countries.

> Substandard housing should be distinguished according to whether the units are beyond repair and need to be

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[30]United Nations, Statistical Office, Principles and Recommendations for the 1970 Housing Censuses, Statistical Papers Series M, No. 45, New York: United Nations, 1967, pp. 38-39

[31]United Nations, Statistical Office, Methods of Estimating Housing Needs, Studies in Methods, Series F, No. 12, New York: United Nations, 1967, p. 23.

> or through the provision of essential facilities....
>
> This estimate depends upon the identification of housing units...which, although of an acceptable type...are in need of repair or so deteriorated that they should be replaced.[32]

In developing countries, the assumption that all improvised housing is unacceptable may not be valid. Although squatters' shacks concentrated around the peripheries of major cities are "contrived shacks disposed without regard to layout and lacking even the most elementary facilities" and frequently constructed "on land to which they have no legal claim", some variations should be noted:

> Not all improvised housing units are constructed on illegally held land and the estimates should also take account of those units having similar characteristics which may have been erected on land that is owned or rented by the occupants or held under some other legal form of tenure.[33]

As Turner points out, in the stages of development represented by squatter settlements of different types, . . . settlements of a temporary nature may be found. They are frequently within cities, usually in highly congested developments. Some have developed into permanent, improving settlements; others have deteriorated beyond the stage of rehabilitation. Those that have improved have had certain advantageous location features: room for

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[32] Ibid., p. 50.

[33] Methods of Estimating Housing Needs, op.cit., pp. 38,39.

location), good original layout, and sufficient lot size to permit housing to improve to standard size and quality. Some have become full-fledged permanent settlements characterized by dwelling units that are structurally sound, but the full scale of urban services may not have been provided. Within these broad categories, a wide range of "squatter settlements" may exist, many of which have little in common with the traditional slum or provisional squatter settlement except the appearance of the units, which are in various stages of completion. While these different types may be separated geographically in some municipalities, in others one location which combines features favorable to the development of each type--nearness to employment opportunities for those seeking to become established in the city, possibility of acquiring legal land tenure to the better established, room for expansion around the unit and for services and facilities--may exhibit a combination of all types of "squatter" settlements. The colonias proletarias in and around Mexico City are another example.[34]

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[34]John C. Turner, "Uncontrolled Urban Settlement: Problems and Policies," International Social Development Review: "Urbanization: development policies and planning," No. 1 (United Nations, New York, 1968, pp. 107-130, and Regional and Urban Planning Implementation, Inc., A Program for Housing and Urban Development in Mexico City, Cambridge, Mass.: 1964.

distinguish between dwellings on the basis of structural condition but of the difficulties involved in doing so.

> Difficulty has been experienced, however, in establishing suitable criteria to distinguish substandard units and in the practical application of such criteria to the housing stock. Dwellings or other living quarters are sometimes considered substandard because they are in need of extensive structural repair (i.e., where important parts of the building like floors, roof, plaster, walls or foundations need major repair or replacement), because they lack certain essential facilities (piped water, toilet facilities), because of a combination of these factors, or because of a general deterioration of dwellings and of the neighborhood (slum dwellings). ...
>
> Special surveys conducted by trained inspectors would be the most suitable means of obtaining the necessary information for this type of estimate; however, in some cases it has been found that the data obtained during a housing census regarding the need for major repairs agrees fairly well with the proportions found to exist as a result of inspection surveys of the same areas.[35]

Present recommendations are that data on structural condition of dwellings not be included in the 1970 national housing censuses but be collected in sample surveys.[36] One consideration in the recommendation is that considerable technical skill is required to determine state of repair, particularly where it is also important to know whether the costs of improving it are economically feasible, which could not be provided on the scale needed for national censuses.

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[35] Methods of Estimating Housing Needs, op.cit., pp. 50-51.

[36] Principles and Recommendations for the 1970 Housing Censuses, op. cit., p. 49.

> is essential to consider not only the state of habitability in connexion with the arrangement and size of the rooms and the equipment such as for instance that for plumbing, lighting and w.c.'s (housing-technical criteria), but also the extent to which the habitability is dependent on the quality of the construction and the state of repair of the parts of the construction (building-technical criteria). The fact whether dwellings are or are not worth repairing from an economic point of view mainly depends on building-technical criteria and is to be established through a specific investigation with the aid of technically skilled staff.[37]

The United States, as a highly industrialized and urbanized country with a large supply of existing housing constructed according to changing standards over a fairly long period of time, has included data on structural condition of dwelling units in its censuses of housing, beginning in 1940. The criteria for structural quality are that the structure adequately provide shelter for the occupants and that it have no structural defects to the extent that it endangered physical safety. Failure to provide shelter or to prevent physical danger may be the result of poor original construction or of major defects in the structure--inside or outside walls, roofs, or ceilings, basement or floors. Frequently, both causes are present. The techniques used by the Census Bureau in collecting the data are described an Appendix.

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[37]A. Joolen, "Basic Information on the Housing Situation: present Housing Requirements," in United Nations, Economic Commission for Europe, Report on the Seminar on Housing Surveys and Programmes with Particular Reference to Problems in the Developing Countries, held at Zagreb, Yugoslavia, October, 1961, Geneva: United Nations, 1961, pp. 73-74.

and the subjective element thus introduced, particularly as the data are collected on a national scale, has been the principal weakness of the system. The Bureau has recently evaluated its ratings of structural condition of housing, as follows:

> The statistics are unreliable. Our best estimate is that if another group of enumerators had been sent back to rate the housing units of the United States only about one third of the units rated as dilapidated or deteriorating by either group of enumerators would have been rated the same by both groups of enumerators.
>
> The statistics are inaccurate. The 1960 Census evaluation program indicates that dilapidated housing in the United States, as determined by the 1960 Census is understated by at least one-third. Use of the 1960 Census statistics grossly distorts estimates of trend in dilapidated housing from 1950 to 1960. The statistics for blocks appear to be of very low accuracy. Comparisons of the relative quality of structural condition of housing between cities may be subject to considerable error.[38]

Although it might seem that occupants of dwelling units would be in the best position to evaluate structural hazards, self-enumeration of defects did not improve the data collected:

> The research to date indicates that ratings provided by the occupants of housing units would not provide a satisfactory alternative. A number of surveys were conducted to test the assumption that information supplied by householders about structural defects could be coded into a condition classification. Occupants, homeowners in particular, tended to understate the nature and extent of structural defects. A reversal of this tendency was noted among both renters and owners in the higher brackets of income, home value, and rent.[39]

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[38] Measuring the Quality of Housing: An Appraisal of Census Statistics and Methods, op. cit., p. 5.

[39] Ibid., p. 6.

up a lack of uniformity of practice in assessing structural condition and the probability of unreliable ratings so long as interviewers' judgments are the basis of the evaluations:

> Argentina, Guatemala, and Honduras have used three grades or designations: "Good," "fair," and "bad." Costa Rica has used only two of these: "Good" and "bad." It was left to the judgment of the enumerator to decide which designation it was proper to give in view of the danger that the structural state of the dwelling constituted for its inhabitants. Costa Rica limited the question to buildings; consequently, it did not extend it to all dwellings.
>
> For reference purposes, Guatemala determined that a dwelling was to be considered in "bad" condition if its roof was rather deteriorated and its walls cracked so that it was in imminent need of repair. Honduras gave similar instructions.
>
> Canada simply noted whether the dwellings "needed major repairs" but, ... laid down four points of reference for this: (a) Sunken or cracked foundations; (b) deterioration of roofs or chimneys; (c) unsteadiness of outside steps or staircases; (d) interior of the dwelling in urgent need of repair because large pieces of plaster had fallen from the walls or ceilings. The enumerator also had to decide what information to record....
>
> A final type of designation was that used by Venezuela, which grouped unoccupied dwellings (the data were not collected for others) as habitable and uninhabitable, but no instructions were given concerning the parts of the dwelling that the enumerator was preferably to take note of in classifying it, this being left exclusively to the enumerator's judgement.
>
> It appears, therefore, that there has been variation in the procedures followed by the different countries in the classification of dwellings: They all based this classification primarily on the good judgment of their enumerators.[40]

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[40] Inter-American Statistical Institute, Census of Housing: Analysis of the Concepts and Procedures used under the Program of the 1950 Census of the Americas, Washington, D.C.: Pan American Union, 1956, pp. 61-62.

> This type of study evidently is not simple, especially in a general dwelling census, its execution being better suited to specialized inquiries and the use of personnel specially selected for the purpose.
>
> One point which the countries did not consider, and which perhaps would have given greater help in rating the deterioration of dwellings, would have been the previous formulation of definitions concerning structural and interior surfaces; some idea of what the supports are for casing and staircases; definitions concerning the different forms of deterioration (such as holes through surfaces, worn out surfaces, broken surfaces, types of breakage, loose surfaces); seriousness of deterioration; extent of deterioration; etc. With these basic instructions, an earnest enumerator could possibly give an exact estimation of the condition of the dwelling for habitation.[41]

Obviously, it is not possible to arrive at a sound evaluation of the quality of a dwelling unit without taking structural condition into account. This aspect of quality has particular relevance in developing countries. To mention only a few aspects, structural condition of housing units should be known before decisions concerning municipal services are made. The question of rehabilitation, even of a temporary nature, would seem to be as important in developing countries as in the industrialized ones. Extensive interest in developing simple and safe designs for new housing may benefit from examination of techniques in use. Perhaps most important is Turner's thesis that classifying large areas of housing as slums because they exhibit some characteristics

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[41] Ibid., p. 62.

and hampers initiative in improving housing.[42]

Consequently, it has seemed worthwhile to explore the possibility of developing a technique of measuring structural condition that can be applied in housing studies and national censuses by individuals who are not necessarily building experts. It is conceded that ratings by technical experts using uniform criteria would undoubtedly provide a higher level of accuracy, but the cost of this method is likely to preclude its use on any large scale. The techniques developed by the United States Bureau of the Census for application by nontechnical personnel would seem to have greater possibilities for general use, if the subjective element of the enumerators' judgment could be eliminated or controlled. The system, for example, has produced reliable results under certain conditions. In its evaluation of accuracy of ratings, the Bureau found statistics on structural condition of housing within census tracts adequate:

> This finding is consistent with the others. The random errors of measurement (including enumerator variability) tend to cancel out on the tract level. Also, our hypothesis is that the enumerators within a city have a common outlook and are dealing with a common environment. For this reason intracity comparisons of structural condition may be adequately based while intercity comparisons may not be.[43]

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[42] Turner, op. cit.

[43] Measuring the Quality of Housing: An Appraisal..., op. cit., p. 5.

It has been pointed out that this measure, which is based on the presence of such factors as water, electricity, bathroom facilities, etc., is based on objective criteria--the actual availability of specified services and facilities to households. Consequently, it provides a more precise measure of quality than structural condition.[44] Further, the criteria for this aspect of quality are, as the World Health Organization has pointed out, universally applicable:

> To meet minimum health standards certain services and facilities are required. These include a water supply, either piped into the dwelling or readily available to the dwelling, a sanitary means for the disposal of household wastes and used water, facilities for the washing of clothes and household utensils and for the bathing of the body to maintain personal hygiene. In addition, it is necessary to provide facilities for the storage, preparation, cooking and consumption of food and for the storage and safeguarding of personal property. These services and facilities are required universally, irrespective of climatic or local environmental factors.[45]

Although several services and facilities may be included in the indicator, availability of plumbing facilities is the major criterion of quality, principally because of its public health aspects. A house may be considered substandard on basis of this indicator alone, without regard to its other characteristics. The rationale for this definition has been expressed by the United States Housing and Home Finance Agency as follows:

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[44] Ibid., p. 2.

[45] World Health Organization, Expert Committee on the Public Health Aspects of Housing, First Report, Geneva: The Organization, 1961, p. 21.

> dwelling and lack of running water, flush toilet, and bathtub or shower for exclusive use of the occupants appear to offer the best clue to substandard housing. If a house is dilapidated it is a potential threat to health and safety. An urban family that today shares a flush toilet with another family or is without access to any flush toilet lacks one of the sanitary facilities essential to health and decency in an area of concentrated population. Access to running water in the structure is also essential to proper health standards. Even if the houses without adequate plumbing are not dilapidated, and even if those which are dilapidated are equipped with plumbing facilities, they are likely to be substandard in other ways--in design, surroundings, and general lack of equipment and amenities.[46]

Since the provision of the service-facility items related to sanitation, particularly in urban areas, is a matter of prime concern nationally (and internationally), the question may be raised as to the value of this criterion over time as a unit of measurement of quality, once fairly uniform standards have been achieved:

> The criteria implied in the concept of "standardness," ...would tend to be more variable....There is concern that, with the installation of plumbing facilities in low quality housing, the standard-substandard classification will become a less useful indicator of quality of housing.[47]

Of course, the imminency of such an occurrence varies a great deal between developed and less developed areas. This problem points up the shortcomings of a dichotomous indicator of housing quality. Any fixed dichotomy or trichotomy will not adjust to

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[46] Quoted in Measuring the Quality of Housing..., op. cit., p.2.

[47] Measuring the Quality of Housing..., op. cit., p. 7.

surveys, if not censuses, to obtain a scale with a large number of possible values such that rising standards can be adjusted to it without destroying comparability with past measurements. Development of such a scale was the motivation for the San Juan pilot work on housing quality.

National standards, customs, and levels of housing attained have to be considered with respect to this indicator. There is likely to be considerable variation in the meaning of "standard housing" not only between countries or between urban and rural areas but also between municipalities at different stages of industrial-urban development. Other considerations, particularly economic ones, are likely to bring about marked differences between housing neighborhoods within municipalities. Making services available is usually the responsibility of municipalities, by providing water and sewer systems and enforcing regulations that require builders or owners to provide the facilities. Under conditions of rapid urban growth, such services are not likely to be available to all housing neighborhoods, even some recently developed ones. Some services, such as water for drinking, may be available and others, such as sewer systems, not, or households may provide their own under a variety of arrangements. Cost being a consideration, where much of the existing housing was constructed without regard to the availability of services, there may be wide variations in the facilities within dwellings.

for sanitary services and facilities should be selected within the established framework but supplemented by all additional data required to reflect local conditions.

Some minimum conditions below which housing is to be considered substandard have been established. For international comparisons of housing conditions, the two basic indicators selected are: the percent of occupied dwellings with piped water inside the dwelling or outside the dwelling but within 100 meters and the percent of occupied dwellings with toilets. For urban housing, a supplementary indicator is recommended: the percent of occupied dwellings with flush toilets. Piped water is considered essential because a protected water supply is needed to prevent the spread of disease.

> The supplying of water through pipes is the most effective way of protecting it from pollution and of ensuring its purity, provided that the water supply system is efficiently administered. Pure and safe water may be obtained from a community system, a private deep well or other sources but a system of piped water will be required in any case in order to supply adequate quantities of safe water to the population. It is almost impossible, especially in tropical areas, to maintain the purity of water when it has to be carried from a certain distance to the house and stored for hours or days in containers.[48]

The distance specified is considered to be the maximum distance for availability of water for convenience and safety. A flush

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[48]United Nations Statistical Office, Statistical Indicators of Housing Conditions, Statistical Papers, Series M, No. 37, New York: United Nations, 1962, p. 5.

of communicable diseases.

For purposes of international comparison of housing conditions in the 1970 censuses of housing, the availability of toilet facilities and water-supply systems to households are recommended topics, and the bathing facilities available are additional useful topics. Data on toilet facilities should indicate flush toilets inside dwellings intended for exclusive use and what facilities are available where no inside toilets are reported. Additional data may be collected on type of sewerage system. Information desired on water-supply systems, in addition to that indicated above, may be supplemented by items such as whether or not for exclusive use of occupants of the dwelling and whether or not hot water is available and the equipment used to heat the water. Bathing facilities require information on availability of hot water, as well as other variables:

> Information should be obtained on whether or not there is a fixed bath or shower installation within the premises of each set of living quarters. Additional information may be collected to show whether or not the facilities are for the exclusive use of the occupants of the living quarters and whether there is a supply of hot water for bathing purposes or cold water only. In some areas of the world the distinction proposed above may not be the most appropriate for national needs. It may be important, for example to distinguish between availability of a separate room for bathing in the living quarters, a separate room for bathing in the building, an open cubicle for bathing in the building and the use of a public bath house.[49]

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[49] Principles and Recommendations for the 1970 Housing Censuses, op. cit., pp. 50, 68, 69.

for bathing have been considered basic topics in housing censuses in Latin America. Categories for inquiries, though they may vary among countries,[50] therefore are available for the design of sample surveys.

Considerations similar to those summarized above apply also to other service-facility items: availability of electricity, fuel used for cooking, cooking facilities, and refrigeration (or other type of facility for food storage). As might be expected, there has been considerable variability among countries on the relative importance of the items and on the data collected concerning them. In the 1950 housing censuses of the Americas, for example, use of electricty for lighting and type of cooking fuel were topics in practically all the national censuses. Most countries inquired, in addition, about types of lighting other than electric. Only a few countries included topics such as whether the kitchen was a separate room designed for preparation of food and related activities, for exclusive use of the family, or other uses of the room designated as a kitchen.[51] For the 1970 censuses of housing, type of lighting is a recommended topic for all countries, while cooking facilities is an additional useful topic.

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[50]Room used for bathing, for example, may be a bathroom as defined in the United States or a room used only for bathing purposes.

[51]Inter-American Statistical Institute, op. cit., p. 66.

> lighting in the living quarters, such as electricity, gas, oil lamp and so forth. If the lighting is by electricity, some countries may wish to collect information showing whether the electricity comes from a community supply, generating plant or some other source....
>
> Information should be obtained on:
>
> (a) whether the living quarters have a kitchen, whether they have a kitchenette or whether there is no special place set aside for cooking; (b) on the kind of equipment used for cooking (stove, hot plate, open fire); and (c) the kind of fuel used for cooking (electricity, gas, oil, wood).[52]

As additional information, the item of exclusive use of the cooking facilities by the family may be included. Separateness of the kitchen for its specific function may be obtained as part of the data on number of rooms:

> It is recommended...that kitchens be included in the count of rooms provided they meet the criteria of walls and floor space. Kitchens or kitchenettes that are smaller than four square meters or that have other characteristics which disqualify them, should be excluded. For national purposes, countries may wish to identify and count kitchens as a separate group of rooms that may be analysed with respect to size and utilization, and to identify separately those used exclusively for cooking.[53]

The service-facility topics included in the San Juan pilot study, which were selected within the framework of the United States Census of Housing as adapted for Puerto Rico, are indicated in an Appendix. A brief discussion of the Index of Quality developed in the San Juan pilot study follows.

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[52] Principles and Recommendations for the 1970 Housing Censuses, op. cit., pp. 53-54, 60.

[53] Ibid., p. 66.

Through a combination of several techniques, we have established that, based on our data, a number of combinations of various specific items related to 1) structural condition, 2) services and facilities, and 3) housekeeping and upkeep can be used as measures of housing quality to assess the relative levels of different neighborhoods. In general there is a great amount of substitutability among scales based on the three groups of items as well as with combinations of them. The details of the development of housing quality indexes are given in Appendix I.

With the trend toward self-enumeration in national censuses, techniques for measuring housing quality based on objective conditions rather than opinion along the lines we have been moving would seem to be of high priority.

Adequacy of internal space

Adequate space within housing units is an indicator of quality because it is closely associated with health (physical and possibly mental) comfort, and amenity within the dwelling. While consideration has been given to combining spatial adequacy with other quality aspects, no such index has been developed and the usefulness of such a combination has not been established.[54] Spatial adequacy, therefore, is considered separately as an aspect of quality.

Observation and research indicate that crowding in dwelling units is usually a feature of housing at low-income levels. There is, usually, a close relationship between the size of the house and its cost. Cutting down on space is one of the simplest compromises made by low-income families to keep housing within an income range. The ability to increase the size of the house through remodeling, or the size of living quarters through moving, does not necessarily accompany increased family size. At the same time, high densities are not confined to the lowest cost housing. Indicators of density levels describe the existing situation and permit an assessment of deviations from an ideal or preferred one.

As with other indicators of quality, the ideal situation has to be defined, temporarily at least, in terms of national norms

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[54] Measuring the Quality of Housing: An Appraisal... op. cit., p. 7.

and economic possibilities. Certain minima have been defined in accordance with health requirements, and these, or similar, criteria may become standard.[55]

The measurement for space adequacy is based upon density of occupancy.[56] Measures of density of occupancy that have been devised are the persons-per-room index, persons-per-bedroom index, room use (extent to which rooms serve more than one purpose), and persons-per-square unit of floor or living space. These measures indicate density of occupancy since they relate the space available within the dwelling unit to the number of persons using it, in contrast to measures of the amount of space alone.

Some measures of space without regard to density of occupancy have been used in housing studies. Total number of rooms has been used as an indicator of "the total amount of privacy and specialization of functions offered by the dwelling."[57] Square feet

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[55]The standards developed by the American Public Health Association are one set of space standards which have been recommended as guidelines for developed countries by the World Health Organization (Expert Committee on the Public Health Aspects of Housing, op. cit., p. 19), and as "desirable levels of space" for developing countries. Those standards are set forth in American Public Health Association, Committee on the Hygiene of Housing, Standards for Healthful Housing: Planning the Home for Occupancy, Chicago: Public Administration Service, 1950. Another set of space standards recommended in the same publication is set forth in International Union of Family Organizations, Minimum Habitable Surfaces, Cologne: The Union, 1957.

[56]As opposed to population density; that is, density of settlement (an environmental characteristic). Low levels of occupancy may be found with high levels of population density, and vice versa.

[57]Janet Abu-Lughod and Mary Mix Foley, "Consumer Preferences: The Dwelling," in Nelson N. Foote, et al., Housing Choices and Housing Constraints, New York: McGraw-Hill Book Co., Inc., 1960, p. 216. A comprehensive discussion of measures of housing space is given in Louis Winnick, American Housing and Its Use, New York: John Wiley & Sons, Inc., 1957. Chapter 2.

(or square meters) of useful floor area or living-floor space serve as indicators of total space within the dwelling. Useful floor space "is the total area measured inside the outer walls of the living quarters, excluding cellars, non-habitable attics", and common spaces in multifamily units. Living floor space "is the total area of the spaces in the living quarters that fall within the definition of room."[58]

Data on total number of rooms and total floor area are highly useful measures of utilization of housing.[59] Data on floor area may be standardized and expressed in units of building.[60] For broad comparisons between types of housing and trends in house size, floor area provides a more precise indicator than other measures.[61] Useful floor space and living floor space have been included in the housing censuses of several European countries, and recommended as additional topics for all housing censuses in Europe.[62]

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[58] Methods of Estimating Housing Needs, op. cit., p. 47.

[59] United Nations, Economic Commission for Europe, Secretariat, Techniques of Surveying a Country's Housing Situation, Geneva: United Nations, 1962, p. 6.

[60] Quality of Dwellings and Housing Areas, op. cit., p. 8.

[61] C. A. Moser, op. cit., pp. 70-71.

[62] United Nations, Statistical Commission and Economic Commission for Europe, European Housing Censuses: The 1960 Series, International Recommendations and National Practices, New York: United Nations, 1964, p. 17.

For purposes of international comparisons, the difficulties involved in collecting adequate data on floor area prevented it from being included in the 1970 censuses of housing.[63] Similar considerations led to the rejection of living space in dwellings per person as a basic indicator of housing conditions:

> Because it was thought desirable to limit the number of indicators, however, and because the area of living space per person does not include the element of privacy, it was considered that indicators of density of occupation based on the number of persons per room would be more suitable. It should be noted also that the definition of room includes a minimum area ($4m^2$) therefore a minimum area per person is implied in the indicator "average number of persons per room."[64]

As indicated, useful floor space or living floor space may be combined with number of persons in the household into an index of density of occupancy, but it is, in general, less useful than some of the other measures:

> Area alone does not take into account the separation of living space into rooms required for various household activities or the need for privacy, therefore any proposed increase in the area of living floor space per person should take into account the existing number of persons per room and the desired persons per room ratio in order to achieve not only sufficient area per person but area which is divided into a sufficient number of rooms of the required types.[65]

The difficulties connected with obtaining information with an acceptable degree of precision on floor or living space area in

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[63] United Nations, Statistical Office, Principles and Recommendations for the 1970 Censuses of Housing, New York: United States, 1967, p. 49.

[64] Statistical Indicators of Housing Conditions, op. cit., p. 11.

[65] Methods of Estimating Housing Needs, op. cit., p. 47.

sample surveys are further compounded by the tendency of people to think of dwellings in terms of number of rooms or of activities related to rooms. Even with all relevant data at hand, the space requirements of families cannot easily be objectively determined without considerable detail on their living patterns.[66] While larger households would seem to need more space than small ones, the space needs of small households may vary independently of size of household, and, sometimes, independently of preferences.

It has been pointed out that:

> Ideally, a true measure of space would take into account: (1) total floor area, (2) room count, (3) bedroom count, (4) total number of occupants, and (5) age, sex, and relationship of occupants.[67]

While the eventual development of such an index is not beyond the bounds of possibility, the persons-per-room index is presently the one which is used internationally as the indicator of density of occupancy in dwellings. The index is constructed by dividing the number of persons in the household by the number of rooms in the dwelling. Thus, some standardization in the units of measurement, households and rooms, is essential if data from sample surveys are

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[66] Space requirements for different household activities have been the subject of a number of studies. Their methodology and findings are discussed in Glenn H. Beyer, Farm Housing in the Northeast, Ithaca N.Y.: Cornell University Press, 1949. The results of much of the research, as well as determination of space needs for health purposes by authoritative organizations, have been taken into account in setting minimum space standards in housing by the Federal Housing Administration. Since new construction that does not meet the minimum space standards will not be approved for FHA mortgages, and usually not for conventional mortgages, the minimum standards exercise marked influence on house and room sizes. No data on floor areas are collected or specified by the United States Bureau of the Census.

[67] Housing Choices and Housing Constraints, op. cit., p. 217.

to be comparable with census or other official data. The concept of household will be discussed under "Household Composition." With respect to the concept of "room," considerable variation in national definitions of room and of what rooms are to be counted as rooms has evolved.[68] For purposes of international comparability, the recommended definition of room for the 1970 censuses of housing is:

> A room is defined as a space in a housing unit or other living quarters enclosed by walls reaching from the floor to the ceiling or roof covering, or at least to a height of two metres, of a size large enough to hold a bed for an adult, that is, 4 sq. metres at least. ...Separate information may be collected for national purposes on spaces of less than 4 sq. metres that conform in other respects to the definition of room if it is considered that their number warrants such a procedure.[69]

All rooms used for dwelling purposes (including kitchens) that meet the criteria are to be included in the room count, while other spaces (passageways, verandas, lobbies, bathrooms, toilet rooms) are not to be counted even if they do. Rooms used for professional or business purposes should be included in the room count but not in calculating the number of persons per room.[70]

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[68] See Inter-American Statistical Institute, op. cit., pp. 23-27, for a discussion of variability among nations in definition of room and room counts in the 1950 housing censuses of American nations, and European Housing Censuses: The 1960 Series, op. cit., pp. 24-26, for recommended procedures to reduce variability in European housing censuses (pp. 40-41) on the same topics.

[69] Principles and Recommendations for the 1970 Housing Censuses, op. cit., p. 66.

[70] Although information on minimum room size is important in countries where there are large variations in room sizes over a large proportion of the housing stock, its inclusion in the concept of room introduces a source of confusion in sample surveys which will need to be taken into account in the interviewers' instructions.

The persons-per-room index has some easily recognizable limitations as a measure. Winnick discusses them as follows:

> The PPR ratio, of course, tells us nothing of the arrangements within a dwelling unit that affect utilization and, like any simple measure, is incapable of expressing the complexity of the phenomenon it is intended to describe. The PPR ratio of a given dwelling unit represents an egalitarian allocation of a given number of cubicles within a house among its occupants. Apart from the assumption that all persons are alike in their space requirements and that all rooms are alike in size and capacity to render satisfaction, there is a further assumption that all enumerated rooms are actually used....
> Moreover, the intensity with which we use housing space varies over the course of a day, with the days of the week, and with the season of the year....Not all rooms are simultaneously occupied, even in the case of households with PPR ratios higher than one....The PPR is probably most open to criticism because of its inability to differentiate households of various size and composition.[71]

In spite of its limitations, the persons-per-room ratio is a simple index to devise from standard information collected in surveys and censuses on number of rooms and number of household members, and gives an easily comprehended overall picture of adequacy of space.

Indexes of 1.01 or more persons per room are considered to represent crowded conditions in housing in the United States. For general purposes of indicating housing conditions, the percent of occupied dwellings with three or more persons per room has been selected as the "lowest level that would indicate overcrowding in all circumstances."

> The percentage of occupied dwellings with 1.5 persons per room and the percentage of dwellings with 2.0 or

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[71] American Housing and Its Use, op. cit., pp. 18-19.

> more persons per room are levels which have been suggested as more appropriate indicators. For some regions these measures may be useful in addition to the indicator of 3 or more persons per room which is recommended for international use. However, for international comparison the first limit, i.e. 1.5 persons per room, has not been included because it would be difficult to interpret its significance. Under any circumstances there will be a rather high percentage of dwellings with 1.5 persons per room some of which may not be considered as being overcrowded if they are dwellings of 4 or more rooms occupied by large households. To some extent the same argument is valid for the limit 2.0, since large households living in dwellings with 4-6 rooms or more may not be considered as being overcrowded, even if the density of occupation is two persons per room depending on the composition of the household.[72]

The indicator of overcrowding, 3.0 persons per room or more, is considered to hold under different climatic conditions, since:

> it is difficult to see where the reduction in the number of rooms could take place. The provision of kitchens, bedrooms and living rooms would seem to be equally necessary in tropical climates as in cold climates and it may be that the provision of verandahs, patios, etc., to provide for outdoor living is in addition to, but not instead of, the rooms normally required for households in colder climates.[73]

The level of 3.0 persons per room takes into account rural as well as urban housing conditions. Levels of crowding in urban housing are likely to be lower than those in rural housing. In Peru, for metropolitan areas, the level selected has been 2 persons per bedroom with one additional room. For Chile, the maximum acceptable level of density is 2 persons per room and 13 square meters floor space per room.[74] The level selected as the indicator

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[72] Statistical Indicators of Housing Conditions, op. cit., p. 4.

[73] Ibid., p. 8.

[74] Methods of Estimating Housing Needs, op. cit., pp. 48, 80.

of overcrowding, in other words, is selected on basis of known data on size of households and size of houses in a particular area.[75] But the chosen level, nevertheless, will be a norm or standard which may or may not be met by a majority of the dwelling units.

The general information from the persons-per-room ratio can be supplemented by the more specific information provided by a persons-per-bedroom index.

An index of rooms-per-person, a variation of the persons-per-room ratio, is sometimes used. This measure is no more than a reflection of persons-per-room since it involves merely exchanging the numerator for the denominator in computing the ratio.

The general information from the persons-per-room ratio can be supplemented by the more specific information provided by a persons-per-bedroom index. The latter index is a "refinement of the simple room count into a count of bedrooms." It

> reveals whether a five-room unit, for example, contains--besides living room and kitchen--three bedrooms or two bedrooms and a dining room. A large family could obviously be accommodated with greater ease in the former, whereas it would be overcrowded in the latter.

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[75] One study has explored a relationship between persons-per-room ratios and gross national product, on basis of data for thirty countries. A density of 1.5 ppr seemed to be obtainable at a gnp of about $500 per capita (in 1960 dollars). A density of 2.5 ppr was found among countries with a gnp of $150. The standard of a density of less than 1 ppr seemed to require a gnp of $1,000. Once that density was achieved, there was little improvement in ppr with rising gnp. Cited in John D. Herbert and Alfred P. VanHuyck, eds., Urban Planning in The Developing Countries, New York: Frederick A. Praeger, p. 85.

> Even this measure, however, does not consider the possible variations in household composition.[76]

As with rooms, a standard definition of bedroom is basic to the analysis. Some confusion has occurred between space used for sleeping and actual bedrooms, and a variety of rooms have been counted as bedrooms under different definitions.[77] For the 1970 censuses of housing, number of bedrooms is cited as an additional useful topic for inclusion, and the following procedure suggested for use:

> A bedroom is a room that is used principally and regularly for sleeping. Some countries may wish to count, in addition to bedrooms, all rooms regularly used for sleeping even though they are used principally as living rooms, dining rooms, kitchens, et cetera. Each country should indicate the procedure that has been followed.[78]

The persons-per-bedroom index suffers some of the limitations of the persons-per-room index, and, like that index, does not take into account differences in household composition. It does, however, serve to relate the number of bedrooms available to the size of the household or family, and more bedroom space is usually the critical need as families increase in size.

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[76] Housing Choices and Housing Constraints, op. cit., pp. 216-217.

[77] See Inter-American Statistical Institute, op. cit., and European Housing Censuses: the 1960 Series, op. cit., for discussion of some of the variability.

[78] Principles and Recommendations for the 1970 Housing Censuses, op. cit., p. 51.

> demand for extra space is exerted for bedrooms and social activity, while the hard core of the dwelling unit meets the extra demand through more efficient utilization as well as by a relatively small expansion.[79]

Room use is an indicator of "use crowding," and is designed to indicate situations where rooms are used for more than one purpose, such as living rooms used also as bedrooms. It has not been used extensively, but it "holds the promise of taking into account both space and family needs at the same time."[80]

Sharing rooms. Sharing the house or sharing specific rooms or facilities by more than one family unit are indicators of inadequate housing conditions. More than one family living in the same house (that is, "doubling up") may occur as a result of lack of economic resources, or, frequently, a lack of housing. Married children may continue to live with parents until established, and some related households may pool resources to obtain shelter. Data on household composition usually are adequate to identify the situations. It is essential in sample surveys to follow accepted definitions of "household" and "family" as considerable differences may be found between countries or municipalities. For example:

> in some countries a private household is the group of persons occupying the whole of a dwelling so that the number of dwellings is always equal to the number of households, while in others only those related by

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[79] American Housing and Its Use, op. cit., p. 17.

[80] Alvin L. Schorr, op. cit., p. 17.

> blood or marriage are considered as comprising households. The number of households depends not only upon the demographic structure and the living habits of the population, but it is also subject to change with the availability of dwellings, changes in income and the cost of housing. As a result of these factors it is difficult to determine which households or families are involuntarily doubled-up as of a certain date. The statistical concept of family also varies considerably among countries. For example, in some countries the family is understood to mean the primary unit of parents and children living together; in others it may include other related persons if under a certain age and if living in the same housing unit.[81]

Doubling-up on a large scale is an abnormal situation. The topic is included in sample surveys in order to identify doubled-up households in the analysis.

Sharing various rooms or facilities within rooms with members of another family from outside the household has implications of inadequacy that may be house-related, location-related or family-related. For example, in the San Juan Pilot study, only in the slum neighborhoods (and only about 10 percent there) wasthere any sharing of separate rooms with others from outside the household. The rooms shared in practically all cases were kitchens or bathrooms, or some bath facilities. Sharing of such facilities may perhaps be typical in areas where some houses do not have individual water supplies, where many families are not able to afford kitchen or bathroom equipment, at least temporarily, or where certain households have been able to obtain some urban services which are not available to the general population in the housing area.

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[81] Statistical Indicators of Housing Conditions, op. cit., p.11.

The topic is included in sample surveys with respect to sharing all rooms, each specified separately. The extent of sharing bathrooms or bathing or toilet facilities may be taken into account in the index of quality. If the San Juan data are fairly typical, sharing of most rooms is unusual, but the topic has to be included in order to identify the households where it takes place.

Household Equipment and Furnishings

Household equipment and furnishings are essential items of household operation related both to level of living and cost of housing.

The necessary nature of certain basic equipment in the house for preparation and safe storage of food is recognized by their inclusion in the index of quality. In some climates, heating equipment is treated in the same manner. In the United States, for instance, it is now commonplace for cooking stoves and refrigerators to be standard equipment furnished with the dwelling unit for both owners and renters. Similarly, the need for at least some minimum of furniture is taken into account by using the interviewer's evaluation of condition of the furniture as part of an overall quality index.

In addition to basic household equipment for cooking and preserving food, however, there are available a wide range of other goods and services related to comfort and convenience in carrying on

household activities and in providing facilities for other family activities, such as leisure and recreation. The need for them varies according to family situations and how the families concerned view the services provided as necessities or luxuries. Ownership of televisions or radios, for example, may have high priority where it means family-centered recreation, as opposed to family members looking for entertainment separately and outside the household.

In general, the equipment, though usually costly, represents an investment of family resources in that most of the items are durable and provide services for relatively long periods of time. Although not all the items can be considered as optional for all families, their purchase is frequently postponable and at the discretion of thehousehold.

The principal purpose of including household equipment and furniture in a housing survey is that their ownership or availability provides an indicator of the level of living a family has attained. Selected items of household equipment provide a measure of level of housing apart from the quality of the dwelling or the neighborhood. By the same token, desire or plans to obtain the equipment or furniture serve as indicators of housing aspirations. The rationale for this is that the equipment is designed to improve convenience, comfort, or style and that in carrying on family and household activities improved convenience,

environment.[82]

In a housing survey, the indicators desired are related to level of living and aspirations only with respect to the quality of the housing environment. Obviously, level of living and standard of living of themselves take in a wide range of topics: health, nutrition, education, conditions of employment, transportation facilities, housing, clothing, recreation, and other factors.

> In the widest interpretation, the level of living includes every single aspect of life, from the food one eats and the house one lives in to one's spiritual and cultural nourishment.[83]

"Standard of living" is the term commonly used to describe the existing situation, and its use in this respect frequently is encountered in the literature. By general consensus, however, the term "level of living" is to be used to describe the existing situation[84] and "standard of living" the living conditions which are aspired to.

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[82]International Labour Office, Methods of Family Living Studies, London: P. S. King and Son, Ltd., undated, c. 1940, p. 82.

[83]C. A. Moser, The Measurement of Levels of Living, op. cit., p. 7.

[84]United Nations, Statistical Office, Definition and Measurement of Levels of Living, An Interim Guide, New York: United Nations, 1961. For discussion of terminology and rationale, see International Labour Office, The Worker's Standard of Living, op. cit., especially pp. 7-14.

somewhat more optional than ownership of furniture. Moreover, differences in quality are fairly easily perceived and their evaluation simplified; that is, it is not necessary to have completely automatic equipment for a particular activity or other labor-saving devices, or television or telephone service unless or until the family places sufficient value on the service to justify the investment. Items of owned or available household equipment, therefore, serve as indicators of housing level of living. The items that will be selected as indicators depend to some extent on what is available to the society at large. The list is not a static one but, rather, subject to change over time as more goods and services become available in an economy and as levels and standards of living rise. There should also be some opportunity for lower-income groups to own the items; that is, the equipment selected should be available, new or second-hand, at different prices. The items most commonly used are durable household equipment and represent fairly substantial investments rather than small household appliances, and the list usually includes telephone service. Some examples are: radios, televisions, washing machines (automatic or semi-automatic), vacuum cleaners, , or other special equipment used locally.

In several Latin American countries, ownership of selected items of household furnishings and equipment, such as beds, radios,

the national housing censuses[85] (which should be used as a guide). As might be expected, there is considerable variation among the countries in the articles available, extent of purchase among different income levels, whether manufactured locally or available only as imports, and other factors influencing availability.[86] Studies of consumer expenditures also provide information on equipment available and its distribution throughout the population.

Certain objective housing conditions are necessary, of course, before the accumulation of some household equipment is feasible. Among other things, safe wiring installation is required for the extensive use of electric appliances; water has to be available inside the dwelling for any type of washing machine, and adequate water pressure and sewer connections for the efficient operation of automatic washers. Also, there should be sufficient space in the house for the operation and storage of the equipment.

Ownership may need to be distinguished from availability of some items of household equipment, such as washing machines, which may be furnished to renters (especially those living in public housing). Where renters are as well supplied, through ownership,

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[85] Inter-American Statistical Institute, op. cit., p. 67.

[86] See United States, Department of Commerce, Business and Defense Services Administration, Major Household Applicances: Production, Consumption, Trade, Washington, D.C.: The Department, September, 1960, for one discussion of some factors related to availability of household equipment in Latin America.

have been, they have made similar investments and are similarly encumbered should they desire to improve their housing situation by moving.

The information sought on items of household equipment is in the nature of an inventory of the pertinent applicances and services available in the household (usually from a checklist rather than open end, to forestall errors of recall as much as possible). In housing studies, as distinct from family-living studies, data on costs, when acquired, use of credit, and so forth are not collected for the items already owned. Not only would the usual problems of recall be involved, but also the practical impossibility of relating the purchase to family characteristics at the time it was made. The durable nature of the goods, also, makes their purchase more of an investment than a consumption expenditure. In addition, and particularly at lower-income levels, cost may be reduced by purchases of less expensive models, second-hand, or special bargains, and some equipment may have been received as gifts. Perhaps more important, a housing survey is a survey of family investment in housing rather than a survey of its total expenditure pattern. The relation between expenditures on housing items and other expenditures is best determined from surveys of consumer expenditures.

Information on types and characteristics of families likely to make purchases of household equipment and the extent to which they use credit is used in order to explore such questions as when, in

For this purpose, actual purchases of large (in terms of cost) items of household equipment within a specified time period is used. Since the items are at best infrequent purchases, and likely to be even more so at lower-income levels, the time period has to be fairly long.[87] Errors of telescoping and recall are both possible, but may be minimized by confining the question only to substantial purchases ($50 or over, possibly) rather than to include all items that might have been acquired. Since there is likely to be considerable difference between families who have purchased such items for the first time and those who are replacing earlier equipment, some information on this aspect should be available for the analysis; that is, it should not be assumed that families in late life cycle stages in a developing country are not first-time purchasers.

A complete inventory of household furniture is not made in a housing survey. The quantity of furniture a family owns is likely to be determined more by its characteristics such as life cycle stage than by a style of life, and the difficulties of obtaining

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[87] See Handbook of Household Surveys, op. cit., p.96, for discussion of problems with respect to collecting data in less developed countries, and United Nations, Statistical Commission and Economic Commission for Europe, Recommendations Concerning Family Budget Enquiries in Europe, New York: United Nations, 1966, p. 14, for discussion of recall problems and length of time periods with respect to purchases of durable goods. A two-year period was selected for this item in the San Juan pilot study.

readily apparent. Further, attempts to distinguish necessary from unnecessary household furniture are beyond the scope of a housing survey.

The question of whether households are well or poorly equipped with furnishings deserves a careful study in its own right.[88] In a housing survey, it is the possibility that furniture is inadequate in quantity or quality, or both, that makes it possible to utilize the desire to buy furniture as an indicator of aspirations to improve the quality of the housing environment. The question is usually open-end and items of household equipment, where mentioned, are included with other indicators. Where there are large differences in income, a scale of ownership is likely to reveal merely large differences between housing neighborhoods in the expected direction. Aspirational level, therefore, is an important indicator of the standard of living families with certain characteristics hope or plan to have.

One problem is to be able to distinguish in the analysis between desire for more necessary items (for example, beds, chairs, tables) because of large household size and desire for better quality of already available items (livingroom furniture, for instance.)

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[88]For a comprehensive study made in a developing country on expenditures and consumption on a national scale, see Lydia J. Roberts and Rosa Luisa Stefani, Patterns of Living in Puerto Rican Families, Rio Piedras: The University of Puerto Rico, 1949.

the design makes it necessary to be able to distinguish between lack of desire because of lack of need for more or better items and lack of desire because of a low aspirational level. Also, of course, the implications of a desire to replace still serviceable equipment and furniture are quite different from those related to a desire to replace equipment of inferior quality. In addition to the interviewer's evaluation of household furnishings, the question should be structured to permit categorizing the items desired as an "addition," "replacement," or "first acquisition."

Where desired, strength of intention to purchase the desired items may also be explored, as, for example, within some specific time period, such as six months, a year, two years.

Back reports on findings with respect to housing aspirations using plans to buy furniture as the indicator:

> Greater concern for housing conditions is also shown by the fact that residents of deficient housing are more likely to want to buy furniture. However, residents of deficient housing are inclined toward the purchase of basic furnishings, bedroom and living room sets. At the same time, the residents of nondeficient housing want to buy appliances, such as refrigerators and television sets.[89]

Some items of household furnishings have been used as

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[89] Slums, Projects, and People, op. cit., p. 49.

supplementary (to family income, for instance) indicators of socioeconomic status. In United States studies, the "living-room scale" and like indexes were poor indicators of socioeconomic status, and showed only small correlation with other indicators. Attempts to refine the instrument by adding other items and removing less significant ones did not improve the usefulness of the index. One reason for its lack of discriminating power was that it was based on consumer preferences which change rapidly and tend to become standardized. or, if not completely standardized. ownership of possessions shows too little variability to define differences in status.[90] Nevertheless, ownership or availability of the selected items of equipment is a useful indicator of levels of consumption of housing items related to comfort and amenities. In the San Juan pilot study, the major item of household equipment families most frequently had available was the electric refrigerator, in all housing areas. Radios and television sets were next most frequent, except in public housing, where the second most frequent item was an electric or gas cooking range. As might be expected, larger proportions in the lower-middle-class and lower-class neighborhoods had any of the items. Availability of any of the

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[90] Leonard Reissman, Class in American Society, Glencoe, Ill.: The Free Press, 1959, pp. 117-125. For a discussion of the methodology of the living-room scale, see F. Stuart Chapin, Contemporary American Institutions, New York: Harper and Bros., 1935; William H. Sewell, The Construction and Standardization of a Scale for the Measurement of the Socio-Economic Status of Oklahoma Farm Families, Stillwater, Oklahoma: Oklahoma A. & M. Agricultural Experiment Station, 1940. Other references are cited by Reissman.

lower-middle-class area. In that neighborhood, 80 percent owned or had an automatic or semiautomatic washer, 61 percent had telephones, 47 percent had other appliances. Freezers and dryers were owned by only 7 and 2 percent respectively, of the lower-middle-class neighborhood and were practically nonexistent in other neighborhoods. These findings are not surprising--on the contrary, even small proportions having some of the items is an indication of a high level of welfare. Washing machines were owned by about half of those in the lower-class neighborhood, a third had a telephone, and about two-fifths had other applicances. Telephones were scarce in the slum and public-housing neighborhoods--1 and 2 percent, respectively; washing machies were more plentiful in public housing than in the slums, and about a third of both groups had other appliances. The lack of some items in the squatter slums, and to some extent in the lower-class, housing areas may, as indicated earlier, be simply a difference between housing of good quality (adequate water, wiring, and space) and housing of lower quality.

Demographic data on families age, sex, marital status, and relationship to the head of the household of each household member, and data on migration status, fertility, occupation, education, and family income may be collected for the head of the household and/or the spouse.

Examination of the housing situation through family characteristics in a low-income population is a principal means of identifying at least the major compromises between housing need and family resources that have been made. Analyzing characteristics of occupants of different levels of low-cost housing will, it is believed, provide a firm basis for development of methods to improve housing that will reach larger proportions of that population. The emphasis is on what characterizes the families in the different types of low-cost housing and what their chances are for improved housing.

Data from the San Juan pilot study demonstrate that families in need of low-cost housing are likely to differ significantly from other families in ways that relate to potential housing choices. For example, family income among the male-headed families in the lower-middle class areas was on the average $3,800. They were regularly employed at relatively high occupational levels (skilled labor and higher), with a large proportion in white-collar occupations, were mainly in the productive ages (35-60), and had an average of 9.2 years of schooling.

In the slum areas, households with male heads had low incomes (an average of $1,800 a year), were mainly unskilled workers, had an average educational level of a little over 5 years, and over 50 percent were

might be expected, evinced characteristics of the economically handicapped-- over a third of the households had female heads, about a fifth were inmigrants from rural areas, low annual incomes (an average of $1,500), about two fifths were under age 30 or over age 60, the highest level of unemployment in the sample (16 percent), and occupationally concentrated at the unskilled level, in spite of an average education of 7 years (second only to that in the lower-middle class area). Considerable heterogeneity was found among families in the lower-class neighborhood areas, but occupationally they clustered around the skilled level, educationally at an average of about 6½ years, and had an average annual income of $2,700.

Even though such clearcut differences are not found among all neighborhood samples, the proposed design is still valid, since housing situation is defined by the interaction of combinations of characteristics rather than by one or two alone.

Censuses of population and housing, and other types of national surveys provide a framework of concepts and definitions for all of the above variables. The latest censuses should be consulted, in addition, in deciding upon the relevance of some topics, such as family size and fertility which are subject to change over time. Since the list should be comprehensive with respect to major characteristics likely to affect the housing situation of families, national and local background information should be used to ascertain the need for items not mentioned above, such as religious or ethnic group information.

The following discussion sets forth some principal considerations with respect to the variables cited. Another variable, stage in the

data on the household), is also discussed.

Household Composition

There has been marked variation in the definitions of "households," "normally resident household members," and "family," and, as a result, in the data collected on household composition in censuses and other official surveys. The definitions cited in this manual are those recommended for the 1970 censuses of population. National definitions and procedures should be followed, where there is variation, but, wherever possible, within the international framework.

Data are collected on households, although the analysis may also be in terms of families. In general, the residential group, the family and the household, as units of analysis will achieve similar results since in a great majority of cases they are identical. The reason is, of course, to have flexibility in the analysis, for which data on households are better suited.

The criteria for the concept of household are the "arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living."[91]

In sample surveys, the criteria for the design limits the selected households to households that are families. By international definition, households which have five or more nonrelatives present (boarders or lodgers) are classified as institutional households and not included in

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[91] Principles and Recommendations for the 1970 Housing Censuses, op.cit., p. 42.

specification is that the primary respondents be either some adult member of the household or the spouse of the head of the household or the female head of the household. The specification of the wife of the head eliminates households headed by single persons (which may be placed outside the definition of family) and households made up of all adult relatives or nonrelatives. Since the focus of housing surveys usually, and especially as discussed in this report, is on family housing, areas are selected in which families are most frequently living.

In housing sample surveys, data on household composition are recorded with respect to the relationship of the members of the household to the head of the household. The household head is customarily the person acknowledged to be such by the other members of the household. Demographic data on age, sex, and marital status of each household member are collected, in order to determine the composition of the family for the analysis. The age and sex of each household member are needed for meaningful tabulations on households, particularly in analyzing their housing situations and aspirations. Some problems have been encountered in collecting accurate information on ages of all members. Possible solutions and techniques for handling them are discussed in census publications and handbooks for household surveys.

Knowledge of marital status of the household members serves to identify the family unit and also the households where secondary or subfamilies may be living. Secondary families are nonrelated members of the household who live in the same house but who do not eat with the family (lodgers), while subfamilies are related to the head of the household (as, for example, a married son or daughter and spouse living with parents). Households other than the nuclear family households are not

reference to their space needs.

> When household size is augmented by the addition of other family units, unrelated or related to the head of the household (secondary or subfamilies), relatively large additional amounts of space are found. Unlike the case of children, where...the addition of children caused parents to seek more space, doubling up (that is, secondary families) may be either the result of the availability of extra space or the reason for larger dwelling units....In spite of the fact that secondary families are typically smaller than subfamilies they appear to use more space, probably because the greater need for privacy among unrelated adults requires more physical separation of household activities.[92]

The composition of the family is derived from the data on household composition. The nuclear family unit (or "conjugal family nucleus") is identified and will consist of one of the following units:

> A conjugal family nucleus consists of the following combinations: (a) a married couple without children, (b) a married couple with one or more never-married children or (c) one parent (either father or mother) with one or more never-married children. Couples living in consensual unions should be regarded as married couples.[93]

Families who have other relatives or nonrelatives, or both, in the same household will have additional categories for the necessary classifications. If some nonnuclear families are included in the survey, it should be possible to identify them when pertinent for the analysis. As indicated, the number of such households likely to be included in a general housing survey will be small.

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[92]Louis Winnick, American Housing and Its Use, New York: John Wiley and Sons, Inc., 1957, p. 90.

[93]United Nations, Statistical Office, Principles and Recommendations for the 1970 Population Censuses, Statistical Papers, Series M, No. 44, New York: United Nations, 1967 (Sales No.: 67.XVII.3), p. 48. Some of the analysis in a housing sample survey will be restricted to nuclear family units, while other parts will take in the entire household composition.

istics defining the type of family. The information collected should permit a definition of the following categories for the analysis: (1) whether or not the conjugal couple (if any) consisting of the head and his spouse are married by civil or religious ceremony or if the union is a consensual or common-law union, (2) if the head, male or female, without a spouse is single,widowed, divorced or separated. This information is important in terms of potential stability of the family unit and the probability of change, by remarriage, for example.

Although many consensual unions are stable and are so regarded, that type of marriage in other instances may reflect marital instability, which is a relevant consideration for housing. This type of union is less prevalent in some areas than others and may be so infrequent that it need not be included.

For the same reason, some information may be obtained on the marital histories of heads of households and their wives, such as: number and duration of previous marriages and how terminated, age at each marriage or of first marriage.

A high proportion of consensual marriages is usually associated with incomplete families. In the San Juan data, for example, while the proportion of consensual marriages was low for the overall sample, they were found more frequently among residents in public housing and the slums, ... There were some sharp differences in current marital status among the neighborhood areas, though the normal two-parent household predominated in each one. The smallest proportion of complete households was found in public housing, followed by the slum neighborhoods.

holds headed by females. This variable had considerable pertinence in characterizing occupants of public housing in the pilot study, where 35 percent of households living in public housing were headed by females, compared with only 14 percent in the lower-middle-class neighborhood. High percentages of incomplete families is related to the welfare function of public housing, not to any tendency for the public housing ambience to destroy families. The lower-class neighborhood had the second highest proportion--almost one fourth--of female-headed households.

Education

In a sample housing survey, education level of the primary respondent or respondents (and spouse) are obtained. Number of years of schooling completed is the most convenient measure. The data collected usually refer to "grades completed in school" rather than to number of years as such. It is recognized that this measure does not distinguish between differences in quality between rural and urban education or for variations in quality at different periods because of changes in educational techniques. Traditionally-oriented education, for example, is frequently considered to have different implications than education oriented toward urban-industrialism. Nevertheless, grade completed is one of the most straightforward and easily measured indicators of social status.

Additional topics related to education may be included. One is whether education was received at private or public schools. Another topic is whether or not education at the secondary level was general or vocational. Still another is whether or not special training beyond the

Education usually sets a limit on choice of occupation or occupational advancement and in that manner augments or restricts income. The relationships between education and housing factors have been shown to be similar to those of occupation. Winnick states:

> Housing expenditures by educational attainment were consistent with the findings by occupation. In given income classes, housing expenditures were higher for families with heads who had more schooling. In the $3,000-$3,999 income class, for example, college persons (thirteen to sixteen years of school) spent $627 on housing compared to $576 for those with nine to twelve years of school and $521 for those with eight years or less. On the other hand, homeownership rates were higher among those with less schooling. This is partly due to the higher average age of the less educated because of the historical trend toward more education.[94]

Under some circumstances, education may be a more stable index of economic status than occupation, since occupation at the time of a survey depends somewhat on current employment opportunities.[95] During periods of widespread unemployment, education probably provides a more reliable measure of potential earning capacity than occupation does especially at the unskilled level.

Education and age, taken together, can indicate whether or not there is a trend toward higher educational levels (and, thus, higher earning capacity) for younger groups. Educational trends are explored longitudinally by including the father's education. This is useful since

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[94] Louis Winnick, "The Housing Consumer in 1950: The Study of Consumer Expenditures, Incomes and Savings," in Nelson N. Foote, et al., Housing Choices and Housing Constraints, New York: McGraw-Hill Book Co., Inc., 1960, pp. 61-62.

[95] Housing and Income, op.cit., p. 203.

forecasters of rising standards, for example. In his analysis of intra-urban mobility among the San Juan sample, Okraku found that younger-age groups (and particularly those under age 35) had completed more years of schooling than older ones. This more highly educated group, who also had higher incomes, showed a strong inclination to spontaneously improve their housing situation by moving to higher quality dwelling units.[96]

Being able to start higher in the occupational scale as a result of better education may operate to make better housing an achievable goal for increasing proportions of the population, even though such groups may be relatively small at any given time. Thus, educational levels may tend to bring about articulate demands for both better housing and better neighborhoods. In the San Juan data, less than half of the men in the lower-middle-class neighborhood had only eight years or less of education, compared with sizable majorities in the other neighborhoods. The proportion in the slum neighborhoods was significantly higher than that of any other group--83.0 percent. In the San Juan sample, the neighborhood area with the second highest educational level among the male heads was public housing. Back, who also found more willingness to move to public housing among the higher educated, suggests that one group likely to recognize the opportunity provided by public housing for better housing at low cost is young and upwardly mobile. That group is likely to use the housing project as a stepping stone to better housing of their own.[97]

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[96] Ishmael Obuadabang Okraku, "Residential Mobility Intentions and the Family Life Cycle," unpublished Ph.D. dissertation, Cornell University, September 1968, pp. 143, 164.

[97] Slums, Projects, and People, op.cit., p. 106.

icance for income improvement at any point in time has to be defined in terms of the economic opportunity it provides.

Education of wives of household heads. Educational levels of the wives may have important implications for both the housing choices of families and for housing aspirations, as well as, of course, for other topics in the analysis. In general, the impact of deficiencies in housing are usually more keenly perceived by homemakers, who must cope with the difficulties involved.

Comparing educational levels of husbands and wives by age groups in the sample may well indicate similar trends toward higher education for both sexes. This has implications, of course, for family expenditure patterns as well as for training women to enter the labor force. In general, education may serve as an indicator of the level of housing quality that will be demanded and the ability of family members to achieve their aspirations.

Other units related to education. Another item of a social-cultural nature that may be inquired about, where warranted, is language spoken in the home.

There are a few types of language situations that may be encountered where this measurement may be useful. Instructions for population censuses, for example, recommend the inquiry "usual language spoken" where an estimated 10 percent or more of the total population speak a language or languages different from that of the rest of the population. "Mother tongue" (language spoken in parents' home) is appropriate for information to identify ethnic affiliations. Languages known or spoken may be

multi-lingual.[98] In the San Juan pilot study, respondents were asked how well they spoke English, since that language as well as Spanish had been taught in Puerto Rican schools and some respondents would have had residential experience in New York.

Literacy, as a separate topic from education, unless known to be prevalent in any of the housing areas selected, probably is not needed for sample surveys of urban housing. Although it cannot be assumed that zero years of education means illiteracy, that data would seem to be sufficient for most analyses.

Fertility

The extent of variations between family size in low-cost housing and average family size is relevant to decisions on low-cost housing and so are trends in urban fertility levels. The situation in developing countries, so far at least, is that, for the most part, urban birth rates tend to remain high. One source of concern relates to the demonstration effect of the upper class of a nation, where high birth rates are characteristic of all classes. The theory is that as the economic situation improves presently lower-income groups may imitate the behavior of the upper groups.[99] Morris has explored this hypothesis in a study of

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[98] United Nations, Statistical Office, Principles and Recommendations for National Population Censuses, Statistical Papers, Series M, No. 27, New York: United Nations, 1958.

[99] Philip M. Hauser and Leo F. Schnore, eds., The Study of Urbanization, New York: John Wiley and Sons, Inc., 1965, p. 226.

are carefully measured, lower-status groups have higher fertility than higher-status groups. The apparent lower fertility of rural lower-status groups compared to those of higher-status seems to result from measurement errors due to high infant and child mortality among the former groups.[100]

Some social scientists, on the basis of findings that indicated that smaller families tend to occupy better quality houses, have speculated as to the effect of housing in inducing lower fertility, either in combination with other factors or independently. Housing represents a durable consumer good, requires a relatively high commitment of family income that has to be met, and there is usually a direct relation between cost and the amount of space provided in better quality housing. Muller, noting trends in housing in the United States prior to the 1930's, observed:

> Where the number of children and good living quarters become competitors in the family budget, the choice is frequently made in favor of the latter. People would rather have fewer children than sacrifice the pleasant surroundings for larger accommodations.[101]

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[100] Earl W. Morris, "Acculturation, Migration and Fertility in Peru: A Study of Social and Cultural Change," Ph.D dissertation, Cornell University, in progress. [illegible] Whitehead

[101] Henry McCulley Muller, Urban Home Ownership, Philadelphia, Pa.: University of Pennsylvania, 1947, p. 55. Source cited is Warren S. Thompson, "The Effect of Housing upon Population Growth," The Milbank Memorial Fund Quarterly, Vol. 16, No. 4 (October, 1938), p. 360. See also Muller, pp. 30-31, no correlation between home ownership and fertility level.

countries that fertility is under sufficient voluntary control for the later effect upon fertility to occur. This topic may be more suited to a focused fertility-housing study than to a general-purpose one. One drawback is that techniques have not been sufficiently well developed to isolate the effects of housing on fertility from the effects of other variables, in particular variations in socioeconomic status. Whether or not respondents perceive a relation between fertility and housing may be studied by including a question on the effect they believe having another child would have on their housing.

Age at first marriage, for example, assumes some importance in housing considerations, where a general standard of one housing unit for one family has been adopted. Early age at marriage among people with few resources frequently has different implications than the same factor among groups with more advantages, even where their income levels may be temporarily comparable. Under some though not all circumstances, early age of marriage, combined with low education and low skill level, reinforces the likelihood that very low income may be permanent throughout a lifetime, especially for large families.[102] Changing age at marriage will have implications for rates of family formation and thereby will relate to the need for housing.

Fertility expectations have been shown to be relevant for residential mobility. Apparently, expectations of changes in stages in the family life cycle are anticipated, resulting in residential changes. In his

[102] Alvin L. Schorr, Poor Kids, New York: Basic Books, Inc., 1966, especially Chapter 3.

the expected finding that low-income families tend to move more often than high-income ones. However:

> the situation is different in the case of tenure status, fertility expectations, and age. A different pattern emerges when these controls are introduced. The major conclusion that one is led to by this pattern is that where the housing needs of a family exert pressures to change housing, high income provides the means to meet the pressures and is therefore related to high residential mobility. Thus, while high income restrains the mobility of home owners compared with low incomes, it boosts the mobility of renters, a group already known for its high rates of mobility. Similarly, although in the entire sample, as well as among families with completed fertility, income and mobility are inversely related, the two variables show a strong positive correlation among families who expect to have more children.[103]

A study focusing on the measurement and analysis of fertility and family size behavior and attitudes among the San Juan sample has indicated that all the topics used in full-scale fertility studies would not be necessary in a housing or other type of sample survey where fertility is not the principal topic, although a basic core of such data is necessary for determination of a number of factors crucial to the study of housing.

Migration Status

The topic of migration is discussed in depth in Section V. It is included in this section merely because the analysis should attempt to establish the significance, if any, for attitudes and behavior, of rural

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[103] Ishmael Obuadabang Okraku, op.cit., p. 156.

origin, length of urban experience, or having been born in the present city, and so forth.

Where a study of migration is included in the survey design, an index of migration status can be constructed from the material provided under that topic, and used, as another demographic characteristic of families. Where migration is not a major topic, the framework used in national censuses of population should be followed. Units of measurement currently being recommended for international use in population censuses are as follows:

Place of birth. Sufficient detail should be obtained so that the locality can be identified and classified according to size.

Length of time has lived in the city. It should be clear that the period referred to is length of time in the city, not length of time in the residence (which is a separate question).

Place of previous residence. Locality or subdivision in which lived immediately preceding move to the present city. (A separate question should be used to obtain the specific information needed on places of previous residence within the present city.)

The list can be expanded, of course, to include other units of local applicability. It is probable that migration data should be obtained in all cases for the head of the household and, wherever possible, for the wife of the head as well.

may not be typical of other countries because large numbers of prospective in-migrants from rural areas may have gone to the United States rather than to Puerto Rican cities.[104] Nevertheless, it also may indicate the probability that the characteristics of in-migrants to cities change as a country's development proceeds. In the San Juan sample, for instance, there was a large representation of in-migrants from other urban areas. Of those living in the lower-middle-class neighborhood 59 percent had come to San Juan from smaller cities and 6 percent had come from other large metropolitan areas; in the lower-class neighborhood, 57 percent had come from other urban areas, as had slightly over half of those in public housing. About one fifth of those living in public housing had come from rural areas; only 10 percent of those in the lower-class neighborhood had, and about 13 percent and 12 percent in the lower-middle and s m areas. Interestingly, of the total group of migrants to San Juan from rural areas, slightly over half had high incomes (that is, over $2,500 a year, the average annual income of the sample), a proportion that equalled or exceeded that of in-migrants from metropolitan and large urban areas. Those born in San Juan had the smallest proportion (35 percent) in the higher-income group.[105]

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[104] There is evidence, however, that migration to the United States included large proportions of "urban dwellers." One study, where the sample was drawn in New York City, reports that the migrants from Puerto Rico were characterized as being previously residents of cities and had a higher level of skills and better education than the Puerto Rican population in general. See C. Wright Mills, Clarence Senior, and Rose K. Goldsen, The Puerto Rican Journey, New York: Harper & Bros., 1950, p.25.

[105] These data are cited merely to indicate that rural origin should not necessarily be equated with low income and low status in all cities. Other characteristics explain the higher incomes of the rural migrants--younger age and better education are probably the principal reasons. See Okraku, op.cit., Table 33, p. 110.

The measure of income recommended is family income rather than earnings of the head of the household, in order to take into account all sources of income.

Recommendations and instructions concerning the concept of income are available in censuses of population and housing and also in handbooks of household surveys. The latter, in particular, discuss specific problems related to the collection of information on income and the techniques used to resolve them.[106]

For housing studies, as for general-purpose household surveys, the reported income may be an approximate figure. The principal use is to be able to classify families by income level in the analysis of housing situation and other data. Under some circumstances, in order to have reliable data on income, a checklist of possible sources may be used in the schedule. One purpose of such a list would be completeness of the data on total income reported, since income from sources other than earnings are easily overlooked. Another purpose would be to exclude from reported income windfall gains of various types which are not items of regular income. This latter objective is less relevant for general sample surveys, where the number of families with that type of income is likely to be too small to carry significance. A more relevant purpose might be to distinguish between the precarious income of some families and the more stable income of others. Data

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[106] See Handbook of Household Surveys, op. cit., for recommendations concerning household surveys on an international level.

later, can provide information on this point, however. Collecting detailed information on income components may be difficult and time-consuming. Since their use in the analysis in a sample housing survey is limited, sources of income is considered more or less an optional topic for the majority of situations.

Current family income is a basic characteristic needed for full analysis and correct interpretation of other data, (social and economic status, for example) rather than an indicator of housing. There is as yet no widely applicable proportion of income that a family "should" spend on housing. Guidelines on maximum proportions of income that can safely be spent have been provided by the "judgement of experts" based on experience and research on family expenditure patterns. Some of these guidelines, which have been used extensively in approving mortgage loans in the United States, are:

1. A home buyer should pay no more than two or two and a half times his annual income.
2. One month's house expenses should not exceed one week's pay, or between 20 and 25 percent of his monthly income.
3. One week's pay should equal 1 percent of the price of the house; i.e., $60 a week for a $6,000 house; $100 a week for a $10,000 house.[107]

Variations of the scales are frequently used in estimating the ability to pay for housing of different income levels in other countries, especially developing countries. How much a family can spend on its housing is best considered in relation to its total income-expenditure pattern adjusted for family size and composition,

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107 Glenn H. Beyer, Housing and Society, New York: The Macmillan Company, p. 260.

expenditures and family-living studies.

As indicated earlier, housing consumption expressed in terms of current rents and market values provides a measure of a family's level of living with respect to a major basic consumption item. That level is usually highly and positively correlated with current income. The current housing situation of most families usually represents a decision made in the past, when income and other family characteristics, as well as objective conditions, may have been quite different. Housing decisions tend to be long range and made less on the basis of a family's current income than on its usual level of income.

One of the postulates set forth by Friedman in his theory of the consumption function is that a family's income in a given year is frequently made up of both permanent and temporary components.[108] Expenditures, and large expenditures inparticular, are judged likely to be made in relation to the "permanent income" component without regard to unexpected gains (or losses). Taking account of permanent income might make estimates of housing requirements more realistic:

> It would seem that analysts who use the number of low-income families as a measure of housing need grossly exaggerate the housing problem of this group. Equally guilty are those who compare the distribution of family income with the distribution of prices and rents of new housing to illustrate the seriousness of the current situation. Analysis of the relationship of income to

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[108] See Milton Friedman, A Theory of the Consumption Function, Princeton, N.J., Princeton University Press: for a discussion of the theory and the different "horizons" used in gauging normal income with respect to different expenditures, including housing.

> housing expenditures would be much improved if some adjustment were made for the transitory income component and also for variations in the asset position of household heads with similar earnings.[109]

Satisfactory means of measuring permanent income for such purposes have not been developed. An attempt at approaching such a concept was included in the pilot study. Not only was current family income asked, income expected five years from now was also obtained on the expectation that the transitory income component would not affect the latter as greatly. The slope of rent-income curves did not differ significantly between current income and expected income. Reported current income, as income at one point in time, is problematic because:

> Families in any given annual income group are comprised of three classes: families who are usually, or have expected to be, in this income class and whose spending habits are presumably fully adjusted; families with customarily lower incomes who have received extra income (overtime, bonus, temporary employment of the wife) but whose spending behavior has not yet, and may not, adjust to higher income; families with customarily higher incomes who, by the use of credit or savings, are maintaining former (and higher) consumption standards. In general, lower-income groups are more heavily weighted with families in the second class and higher-income groups more heavily weighted with families in the third class, the weights being affected, among other things, by the trend in national income.[110]

The concept of transitory income as applied to housing studies involves consideration of a wide range of conditions related to both demand for and supply of housing. Using census and other data, Reid

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[109] William G. Grigsby, Housing Markets and Public Policy, Philadelphia, Penna.: University of Pennsylvania Press, 1963, pp. 270-271, fn.

[110] Louis Winnick, "The Housing Consumer: Sovereign or Subject?" in Nelson N. Foote, et al., Housing Choices and Housing Constraints, New York: McGraw-Hill Book Company, Inc., 1960, p. 25, fn.

attempted to devise methods that, insofar as the data permitted, eliminated the effects of transitory components in income. Her findings, summarized briefly, were:

> For a population in general the two main conditions of change that affect housing consumption are normal income and relative price of housing. Rise in normal income tends to bring a marked improvement. ...Rise in price of housing may, however, offset the effect of rise in normal income. If the future is like the past, the secular rise in normal income appears likely to bring improvement in housing in spite of a greater rise in the price of housing than of other consumer products, and in spite of many new products entering the market to compete for a share of the consumers' dollars.[111]

As Reid points out, such a conclusion may seem obvious, but the basis for reaching it represents "a break with the past as housing-income relations have usually been interpreted in the economic literature" and permits an examination of "which tendencies are the most reliable indicators of basic behavior." [112]

One important question, in all countries, is whether or not improvement in housing situation follows an improvement in income situation. It seems to be fairly well established that level of housing tends to rise as income increases but, the exact relationship depends upon other family characteristics (or objective conditions such as increased costs). Studies using cost-income ratios (current-income related to a selected figure of current rents and current market value or other indicator of housing cost) have shown, in general that housing consumption rises with increased income but "at a slower rate

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[111] Margaret K. Reid, Housing and Income, op.cit., p. 386.

[112] Ibid. See also Richard F. Muth, "The Demand for Non-Farm Housing," in Arnold C. Harberger, The Demand for Durable Goods, Chicago, Ill.: The University of Chicago Press, 1960, pp. 29-96, for an analysis of permanent income in relation to housing demand and supply.

than income increases.[113] Reid's study of normal income and housing led the author to conclude:

> The evidence implies that high quality housing is one of the important luxury components of the American standard of consumption. With increase in normal income, other things being held constant, a marked rise in housing consumption is to be expected, but such rise will be checked if the price of housing rises faster than the price of other consumer products.[114]

Obviously, at their present stage of development, techniques to determine usual level of income may not be very fruitful in sample housing surveys. Nor do sample surveys provide the data or the scope necessary to determine highly accurate housing-income relationships. (Since household size, family life cycle, and several other variables are so important in such an analysis, extremely large samples would be required.) At the same time, it is highly desirable to include a longitudinal dimension in the study of housing-income concept, wherever possible. One technique suited for use in sample surveys is the direction of income change between past and present, and expected direction of income change between the present and the future. Direction of income change may be used without data on amounts of past or expected income and avoids the usual problems of recall and prediction over a relatively long period of time. Periods of five years in either direction were utilized in the pilot study in order to have a comparative period long enough for effective change to take place and for the

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[113] Glenn H. Beyer, Housing and Society, op.cit., p. 261.

[114] Housing and Income, op.cit., p. 7. Among the "other things" held constant were family characteristics such as size and composition of household, age of head, and similar variables.

direction of change to crystallize.

Job stability is, perhaps, the best indicator likely to be included in a sample survey of the base "permanent income" on which housing decisions may be based. It is well-known that white-collar occupations, in general, under most conditions of employment except severe economic depressions, have had relative security in both employment and salaries.

Income analysis in sample housing surveys is basic to the attainment of a primary objective of such a survey, the interrelationships of the family and the housing it occupies and the interplay between family characteristics, aspirations, and ability to pay.

Other items related to income. Some other items, most of which are included in housing sample surveys for general analytic use, have implications for family income as well as housing. These items are: number of wage earners, labor-force participation of wives and other family members, renting out rooms, and propensity to save. Some of their implications are summarized briefly below.

Number of wage earners. This unit of measurement is not a standard one in housing studies but it may assume importance in some areas. If the San Juan data are typical of other municipalities in developing countries, most of the households in the low-cost neighborhoods are likely to be nuclear families with one principal wage earner and few "other adults" in the household. Back's data, however, indicate the probability of other situations and also some negative implications of only one wage earner in a low-income family when combined with other circumstances. Families in his sample, for

instance, who lived in the housing projects tended to have only one income receiver, usually in "jobs at the lowest step of the occupational scale, laboring and service jobs" and sporadic employment. Among families still in the slums at different stages of the relocation process, low income from poorly paid occupations or actual unemployment were frequently offset by the presence of more than one wage earner in the household.[115]

Labor-force participation of wives. So far as some families are concerned, the most dependable source of additional income may be the ability of wives to move into the labor force temporarily or permanently. This situation on any large scale is much more likely to be one to be anticipated rather than existent in a developing country, among middle-class sectors, because, where employment of women is a matter of acquired skills and educational level, external economic conditions have to favor their employment. Routh's summary of operative factors in changes in employment of women seems typical of developed countries:

> Full employment, wider occupational choice, improved educational opportunity, increased demand for professional skills, higher productivity and real incomes, shorter hours, earlier marriage, mechanization of housekeeping, have interacted to bring about a social change since 1951 that may be of outstanding importance for the future: that is, the return of married women to the work force. In some cases employers have made special efforts to make use of this reserve of labour, notably by the recruitment of part-time workers. But the unused potential is still

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[115]Kurt W. Back, Slums, Projects, and People, Durham, N. C.: Duke University Press, 1962, pp. 32-33. See also Gertrude Bancroft, The American Labor Force: Its Growth and Changing Composition, New York: John Wiley & Sons, Inc., 1958.

very great.[116]

Among lower-status groups women may quite frequently be employed as domestics and as ambulatory sellers of food such as, for example, the women who cook and sell "anticuchos" on the street corners of Lima.

The San Juan data indicated that more women in the most expensive low-cost housing neighborhood than in the slums or public housing were in the labor force.[117] To illustrate the probability of differences among both cities and countries in this respect, it should be noted that in Germani's sample in Buenos Aires, 21 percent of the women who had recently migrated to the city were "gainfully employed," in service occupations, for the most part, and the proportion among the native-born women was lower. Very few of the city-born women (the highest level) were employed outside the home.[118]

While labor-force participation of women was relatively slight in the San Juan sample, it is important to note that the women who were employed were more frequently those with higher educations. When educational level of women under age 50 was compared with that of their

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[116] Guy Routh, Occupation and Pay in Great Britain, 1906-60, Cambridge: Cambridge University Press, 1965, p. 49.

[117] Robert H. Weller, "Female Work Experience and Fertility in San Juan, Puerto Rico: A Study of Selected Lower and Middle Income Neighborhoods," unpublished Ph.D. dissertation, Cornell University, September, 1967.

[118] Gino Germani, "Inquiry into the Social Effects of Urbanization in a Working-class Sector of Greater Buenos Aires," in Philip H. Hauser, ed., Urbanization in Latin America, New York: Columbia University Press, International Documents Service, pp. 220-222.

husbands, the women were found to be as well educated as the men. The women living in the middle-class neighborhood clearly enjoyed the greatest educational advantage, the distinctions being wider among women than among men between neighborhood areas. Average years of education of women in the lower-middle-class neighborhood was 10, compared with 7 years in the lower-class area, and 5.4 years each among those in slums and public housing. Three quarters of the lower-middle-class neighborhood women had 8 years or more of education, a proportion that declined by housing type to 47 percent for those in the lower-class neighborhood, 30 percent in the slum areas, and 28 percent in public housing. In education, women in the lower-class neighborhood showed considerably more similarity to the women living in the slums and public housing than they did to those in the lower-middle-class area. As might be expected, women with more than high-school education were concentrated mainly in the lower-middle-class neighborhood and even there were only a small proportion (9.8 percent).

Separate data on income or occupation of other wage earners in the household may not be needed in the kind of sample survey under discussion. Their contributions to the household are reflected in the overall total family income. Where labor-force status of wives is likely to be an important item for general analytic purposes, the following items would be useful: occupation, employment status, whether employed at home or away from home and whether part time or full time.

Renting rooms or apartments. This unit as included in housing sample surveys refers to renting rooms or apartments in the same housing unit occupied by the family. Income received from renting separate living quarters is, of course, part of family income where the situation occurs but is not separately considered. While the ownership of several houses has interesting implications, the probability of a large number of families in that situation being included in a sample survey is considered to be too slight for analytic purposes.

Rental of rooms or apartments in the same dwelling unit is used to supplement the data on household composition. As indicated, lodgers increase the space demands of the household but frequently are not reflected in reported income.[119]

Renting rooms or apartments was of negligible importance in the San Juan sample. Among the small group who reported sharing the dwelling unit with another family, in only one case each in the lower-middle-class and lower-class areas and four cases in the slum areas was a room or apartment rented out. In general, a combination of small houses and relatively large families will not leave much extra space for rental purposes. Even where there is rapid expansion in employment opportunities, young single men and women of low incomes--the most likely source of renters--may continue to live with relatives or friends until they form their own households.

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[119] Housing and Income, op. cit., p. 57.

Propensity to save. Information on family savings is useful and of particular relevance to housing. It is frequently stated, for example, that families will save for housing whether or not they can save for anything else. Indicators of savings directly for housing are savings as the source of cash payments for a house or for the down payment. Another such indicator is whether cash payments were made for major improvements and repairs to the owner-occupied dwellings. Among renters, who frequently express a desire to own, the extent to which they are accumulating savings toward that objective would reinforce other data on actual intentions. Some less direct indications of tendencies to save are the use of cash for durable consumers goods, such as automobiles, household equipment and appliances, furniture, and the like. A more direct measure of saving habits is whether or not the family saves regularly from its income (amount not specified). The latter measure indicated for the San Juan sample that substantial proportions in all neighborhood areas saved regularly out of income.

Occupation

The classification of employment and occupation is a subject that has received much attention at the international level, particularly by the International Labour Office.[120] The principles, definitions, and procedures that have been evolved have been recommended for international use by a number of organizations, including the Inter-American Statistical Institute. It seems probable that forthcoming national collections of data will subscribe to the major classifications set forth by the International Labour Office, with variations that reflect national conditions. In the United States, for example, the basis for the definition of "unemployed" is the same as that for the recommended International Labour Office definition--not working but seeking work--but the United States varies from the I.L.O. definition by specifying a base age limit of 14 years and in its definition of a reference period.[121] Other similar national variations are likely, and, of course, should be taken into account.

In general, data on employment situation are collected only for the head of the household in housing sample surveys and include: type of activity (in or not in the labor force); employment status (employer,

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[120]See International Labour Office, International Standard Classification of Occupations, Geneva: The Office, 1958, and publications in other years under the same title.

[121]United States, Department of Labor, Bureau of Labor Statistics, Conducting a Labor Force Survey in Developing Countries, Washington, D. C.. The Department, 1964, p. 9.

own-account worker, employee); type of industry in which employed (or place of work, since type can be ascertained from background information); number of hours worked per week; and occupation.

An additional topic that has been included in surveys in developing countries is secondary occupation of the household head. This item was of negligible importance in the San Juan pilot study and Germani reports a similar finding for the Buenos Aires study on migration.[122] Since the practice is likely to vary among municipalities, it is suggested for inclusion as an item. The additional data as recommended for the primary occupation are not likely to be sufficiently usable in a sample survey to warrant inclusion.

Other topics pertinent to housing surveys relate to occupational mobility: employment history of the head of the household, which includes length of time on present job, and father's occupation. Where sons are also primary respondents, data on their occupations makes possible a three-generation comparison of occupational mobility.

Employment situation. Much of the data on employment situation is not used separately but is combined into relevant categories for the analysis. Occupation and employment are separate topics since occupation is a basic characteristic that has implications for a

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[122]Gino Germani, "An Inquiry into the Social Effects of Urbanization in a Working-Class Sector of Greater Buenos Aires," in Philip M. Hauser, ed., Urbanization in Latin America, op. cit., p. 222.

number of social topics as well as economic ones. The groupings of data on employment situation should reflect the local situation and be comparable with census classifications. The following distribution is proposed as a minimum, with the recognition that for the analysis (in a sample survey) several categories will need to be combined:

Employed, regular and full-time
for self
for others

Employed, regular and part-time
for self
for others

Employed, irregularly and part-time
for self
for others

Unemployed
Retired
Students, disabled, others

The category "regular" is derived from data on type of economic activity or place worked and is intended to identify those who have normal employment as customarily understood in industrial-urban society. A classification of "regular full or part-time work for self" is intended to distinguish between those who have skills and training which can be employed (for example, professionals, skilled labor, craftsmen) and the own-account worker in low-paying activities. The use of "type of activity" also permits a distinction between regular paying jobs and temporary or sporadic types of employment. It has been observed in some developing areas, for example, that large proportions of the urban population tend to be employed, but the implications of employment for income and stability vary.

> In fact, from a simple observation of the pattern of urban life in Latin America, genuine unemployment does not appear to be a characteristic feature. This is confirmed by some fragmentary statistics. Almost everybody of working age--with some few exceptions--is doing and earning something, no matter how little. This obviously means that urban economy has somehow managed to absorb virtually all the surplus labour into the various activities operative in urban areas. As indicated above, this has been achieved through institutional arrangements whereby a variety of public and private services are staffed far beyond their needs, or through a deliberate investment policy aimed primarily at employing surplus manual urban labour in simple types of construction and maintenance work or through the highly flexible labour-absorption capacity of various branches of small, poorly productive industries, trade, petty services, domestic service and casual work.[123]

Detailed instructions are available in several standard references for the classifications of regularly employed, self-employed, own account, length of workweek, and other units.[124] The references also suggest various ways of coping with the problems of data collection on employment.

The category "Irregular or part-time" employment[125] is one example of a classification that can be used to distinguish between regular part-time work and irregular employment. Briefly, the principal

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[123] Economic Commission for Latin America, Secretariat, "Creation of Employment Opportunities in Relation to Labour Supply," in Philip M. Hauser, ed., Urbanization in Latin America, New York: Columbia University Press, International Documents Service, 1961, pp. 130-131.

[124] See: Principles and Recommendations for the 1970 Population Censuses, op.cit.; United Nations, Statistical Office, Handbook of Household Surveys, op.cit.; Conducting a Labor Force Survey in Developing Countries, op.cit. The terminology sometimes varies between publications.

[125] This classification was used by Kurt W.Back in his Puerto Rican study of slums and housing projects. See Slums, Projects, and People, op.cit., Table 5, p.30.

distinction is that the regular part-time worker works less than a normal workweek more or less by choice and is engaged in a regular job. The distinction is important in order to be able to distinguish part-time work as normally defined from underemployment. It is not believed that the sample in the type of housing survey proposed in this manual would be large enough for any meaningful pursuit of the topic of underemployment beyond the category mentioned--which may not be of equal importance in all areas. The purpose is to categorize respondents rather than to establish unemployment rates. Underemployment, for example, may be visible or invisible. Visible underemployment takes in those who are working less than the normal workweek and are looking for or would take additional work. Invisible underemployment refers to full-time workers whose pay is abnormally low and has a subcategory of "disguised underemployment" for those engaged in activities that do not "permit full use of capacity or skills."[126] Not only is a large amount of otherwise unusable data needed, but techniques to measure underemployment have not as yet been well enough developed to be adapted for use in relatively small-scale sample surveys.[127]

Some European countries have used an index of employment and

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[126] Handbook of Household Surveys, op. cit., pp. 75, 78.

[127] See Conducting a Labor Force Survey in Developing Countries, op. cit., for discussion of the problems of measurement, and the references cited.

occupation called "socioeconomic group" composed of employment status, occupation, and type of activity for the purpose of identifying "different population groups which are...reasonably homogeneous and fairly clearly distinct from other groups in respect to behavior and which, therefore, can be used to establish the relationship between socioeconomic position of individuals and households and many demographic, social, economic, and cultural phenomenon."[128] Whether or not it fully serves the expressed purpose, it may be adaptable for the practical purpose of distinguishing between levels of employment under some local employment situations. The technique has not as yet been used to any extent (if at all) in tabulations of national data by the American nations.

Occupational classification. The classification of occupations into major, minor, and unit groups as developed by the International Labour Office is the recommended classification for use in national population censuses.[129] The rationale for any classification of occupations is, basically, that it reflect the structure of the national labor force. Consequently, although the national systems

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[128] European Population Census: The 1960 Series, International Recommendations and National Practices, op. cit., p. 22. Some basic categories and uses of the measure are discussed on pp. 22-28.

[129] International Standard Classification of Occupations, op. cit., and Principles and Recommendations for the 1970 Population Censuses, op. cit.

should be convertible to the international recommendations, some major variations can be expected.

Some minor problems of classification are likely to be encountered in sample surveys in urban areas. For example, a few "farm workers" may appear in the sample, who will have to be classified into other categories on basis of employment status as employers or employees. The category "mine workers" includes oil-well operations, which may be a source of employment in some municipalities, and workers may need to be distributed according to level of skill required. Some occupations that may be important for analytic purposes will need to be distinguishable from others in the same major category. For example, the category "sales workers" includes street vendors, peddlers, and the like, as well as other occupations normally considered as white-collar.

The purposes served by occupation as a variable in housing analysis, therefore, will usually be the major criterion for the classification of the relatively small proportions in each of a number of occupations found in a sample survey into meaningful groups. Occupation has important economic and social implications for housing. Not only is it, normally, the principal determinant of family income but it is also the primary determinant of income increase or decrease, the stage in the family life cycle when peak income may be reached, and stability of the income level. Likewise, as a social variable, occupational mobility is a key means of upward social mobility, and the occupation of the household head frequently defines the social

status of the family. Further, social status variations may have some effect on taste and preference levels which relate to the quality of housing that will be needed.

Some differences in income by occupation seem to be inherent in a nascent industrial-urban employment structure and tend to endure, as, for example, salary levels.

> Pay structure, too, is indicative of a country's stage of development, a large rural and small urban population going with great inequalities of pay between unskilled labourers and craftsmen and between manual workers in general and professional, administrative and clerical workers. Later, with diversification of the labour force and the spread of literacy, the gulf is narrowed, though what happens in subsequent stages of development is more obscure. Some writers claim to have discovered an inherent tendency for inequalities to disappear as industrial societies mature; other dispute their claims.[130]

If the differences are likely to be sharper in some developing countries, the usual distinctions between professionals and other white-collar workers, skilled and semi-skilled, and the unskilled assume more importance, particularly in combining various occupations into groups large enough for significant statistical analysis. It is not expected that a large number of professionals will be represented in low-cost housing areas. In the San Juan sample, only 6 percent of those living in the lower-middle-class neighborhood were in that category and only 1 percent each were in the lower-class, slum, or public-housing neighborhoods. If a substantial proportion is found at lower housing levels, the occupations may be some that exercise

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130 Guy Routh, Occupation and Pay in Great Britain, 1906-60, Cambridge: Cambridge University Press, 1965, p.2.

an attraction independently of salary levels. In a panel study on education and change in Puerto Rico, Brameld suggests that teachers may not try to obtain higher salaries available in other occupations because the status of that occupation overrides economic interests.[131] In otherwords, although many teachers would be forced to live in poor housing, their problem is not necessarily a housing problem.

Social mobility. While a full-scale study of social and occupational mobility is not a necessary part of a housing study, some determinants of mobility may help in defining groups likely to benefit or be disadvantaged from occupational changes that may be accompanying different stages of economic development. There is likely to be a relationship between improved circumstances represented by stable occupational change and improved housing.

Turner, for example, postulates that three alternative housing situations: "slums of despair," "slums of hope," and "progressively developing or self-maintaining neighborhoods," represent "alternative directions of change of habitat," in response to change in socio-economic conditions. The first includes low-quality or downgrading residential environments with a population downwardly mobile or unable to be upwardly mobile. The second is made up of poor or deteriorating environments with a population likely to be upwardly motivated. The third is a better or improving environment and a population either upwardly motivated or who have attained means to support the status ...

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[131] Theodore Brameld, The Remaking of a Culture: Life and Education in Puerto Rico, New York: Harper & Brothers, 1959, p. 80.

achieved.[132]

Where data on occupational mobility are being collected, as much as possible of the entire working life should be included. Questions here seek to improve recall by referring occupation to some event in the respondent's life, as, for example, occupation held at time of first or present marriage or birth of first child. A similar technique is used in inquiring about father's occupation, using time of respondent's birth as the reference point, supplemented by a question on whether or not all of father's working life was spent in that occupation. These data do not give complete data on working-life histories. They do, however, provide adequate information on the existence of mobility, its direction, and the rate of change between generations.

In an examination of intra-generational and inter-generational mobility where these two aspects of change were considered simultaneously ratherthan as separate problems, Blau and Duncan explored the interaction of the four principal determinants of occupational mobility: father's education and occupation and son's education and first job. Their findings were that, while the first two exerted considerable influence, the latter two had more. The effects of each of the four factors are stronger at various career stages rather than cumulative. The effects of education as

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[132]John Turner, "Three Barriadas in Lima, Peru, and a Tentative Typology," Paper based on Work in Progress and prepared for the Comparative Urban Settlements Seminar, Syracuse University, October 21, 1968, pp. 32-33.

well as of social origin (father's position) become less important, however, for subsequent success with advancing age, while past career increases in significance.

> Thus, the entire influence of father's education on son's occupational status is mediated by father's occupation and son's education. Father's occupational status, on the other hand, not only influences son's career achievements by affecting his education and first job, but it also has a delayed effect on achievements that persists when differences in schooling and early career experience are statistically controlled. ...Education exerts the strongest direct effect on occupational achievements... with the level on which a man starts his career being second.[133]

Since the effects of the factors are not cumulative, Blau and Duncan feel that a low-income population is not permanently barred from opportunity for occupational mobility. Where low income and sociocultural lacks are the only disadvantages, that is, where discrimination because of race or ethnic origin is not present, the effects of poor circumstances may be redundant rather than cumulative.

With respect to Puerto Rico, Tumin states that high-school education was the crucial amount needed for ascending the occupational ladder: 50 percent of his sample with less than high-school education were in low-status jobs. However, educational level exercised more effect on mobility after initial entry into the labor force rather than on the point of entry. He found a positive association between occupational level and rate of mobility--the lower

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[133]Peter M. Blau and Otis D. Duncan, The American Occupational Structure, New York: John Wiley & Sons, Inc., 1967, pp. 402-403.

ranking the occupation, the lower either in-mobility or out-mobility. Clerks and office workers, the borderline between heads and hands work, sent a disproportionate number upward, were the receiving category for downwardly mobile from upper levels, and recruited relatively few from lower ranks.[134]

Germani found, in Buenos Aires, "the well-known pattern of occupational upgrading of the city-born and their replacement in the less favored positions by newcomers." Almost one half of the sons of manual laborers who had been born in the city had reached nonmanual positions. The rate was lower for in-migrants: the lowest rate was among third-generation descendants of the foreign-born who had been born in the less developed rural regions. Second-generation sons of the foreign-born, on the other hand, who had been born in the more developed rural regions, were in an intermediate position. When mobility within the manual strata was examined, however, he states:

> It can be seen that even the less favored migrants experienced "mass" mobilization: 72 per cent of third-generation Argentines born for the most part in less developed regions and children of unskilled workers had reached skilled occupations or higher positions. This rate was even higher for the city-born (87 per cent). It is true that migration does not necessarily involve upward mobility: in Buenos Aires some 60 per cent of the migrants of nonmanual background had descended to manual occupations. Most of these persons, however, were born in families of artisans, small shopkeepers, small rural landowners

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[134] Melville M. Tumin and Arnold Feldman, Social Class and Social Change in Puerto Rico, Princeton, N. J.: Princeton University Press, 1961, chapter 24.

or tenants; that is, from lower "own account" operations.[135]

Another type of mobility has to be taken into account--mobility at the same occupational level. This type may be more relevant to the population living in low-cost housing areas and may be the only type of occupational mobility a large proportion of the group enjoys, especially those at the skilled or white-collar level, where movement to higher (or lower) levels is not frequent. Expected and past mobility of the same sort can be asked about as well. The assumption is, of course, that upward changes in income are a compensation for greater responsibility, longer service, ability, skills, or the like--that is, that there are differences in levels within an occupational structure. Downward changes do not necessarily mean the reverse; they may be a response to economic turndowns or to conditions in a particular type of industry, or change to retirement status. Changes in income may be purely the result of cost-of-living increases, or some similar device, but they represent mobility (when upward, as they are most likely to be) in the maintenance of access to goods and services. Income here is, of course, income from husband's or chief wage earner's occupation.

Occupation and social class. Occupation provides one objective index of social class and has been the one most frequently used in

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[135]Gino Germani, "The Concept of Social Integration," in Glenn H. Beyer, ed., The Urban Explosion in Latin America, Ithaca, N. Y.: Cornell University Press, 1967, pp. 185-186.

studies of social mobility as well as in more general studies. Other criteria of social class that have been used are (1) how the person lives, (2) what others think of him, and (3) what he thinks of himself.[136]

Occupation is considered suitable as an indicator of class in an industrial society because economic criteria as well as less tangible prestige criteria have an effect in defining the stratification system:

> Occupational position does not encompass all aspects of the concept of class, but it is probably the best single indicator of it (although more refined measures should take economic influence directly into account). Conceptually, there is a closer relationship between economic class and occupational position than there is between occupational position and prestige status. But there is also some relationship between the latter two because many occupational pursuits (notably those involving physical labor) are incompatible with the "honor" of belonging to the higher prestige strata. In addition, the maintenance of the "proper" style of life of these higher strata requires considerable economic resources.[137]

One principal criticism of occupation as an indicator of class is that it has been used to define class rather than to measure it. Another criticism is related to the more or less arbitrary classification of occupations into a relatively small number of groups in a

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[136]Leonard Reissman, Class in American Society, New York: The Free Press, 1959, p. 116.

[137]The American Occupational Structure, op. cit., p. 6.

hierarchical order, the order being based chiefly on the judgment of the researcher or the combined judgments of a sample group asked to rate occupations according to their prestige. Another drawback is that an occupational index as presently developed cannot make fine distinctions between occupations within a range where only small differences in prestige exist.[138]

Much more could be said, particularly about definitions of social class. In housing studies, of course, the concern is not always with measuring the social class position of the respondents but rather with a level of living that has been attained. Where the different occupational levels are clearly distinguished by differences in income and job security, the defects of occupation as a single measure would not seem to prevent its being one index of the style of life, as expressed in housing, a lower-income group has been willing to invest in.

Some indications of the flexibility possible in occupational groupings for different analytic purposes may be seen from the following examples.

Tumin, in his study of social class and social change in Puerto Rico, which comprised rural and urban population both, devised a scheme of eleven categories which represented "a rough rank ordering on the criteria of income, education, and prestige," with other job characteristics not considered, such as range of tasks, conditions of

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[138] Class in American Society, op. cit., pp. 145, 161.

work, amount and quality of prior education and experience, and whether service-oriented, industrial, or managerial. He defines the problem as follows:

> The aim of these assumptions is to arrive at some model of an occupational ladder with places for various categories of jobs; on such a ladder the change from any one rung to another equals a comparable change at all points on the ladder. Too many rungs...would lessen the usefulness of the conception...Our mode of classification had to account...for the existence of two distinct ladders, one which is primarily concerned with agricultural occupations, and the other with industrial jobs.[139]

Thus, sharp distinctions were maintained between occupations that were nominally the same but referred to different sectors. Similarly, distinctions were made in other categories, in accordance with whether the occupation claimed was white-collar or not (sales people, for example, would classify sales personnel as ordinarily understood with the street traders and others of very low income and different life styles; these latter were included with service workers as "blue-collar salesmen").[140]

Back graded occupations of the currently employed according to "the degree to which they conform to the social change which is occurring in Puerto Rico," as follows:

> The high status jobs, with some exceptions (noted below), are the usual grouping of professional, semiprofessional, managerial, sales, and clerical. They are combined here because of their low incidence in our population. Next come the jobs adapted to the industrialization of the country--skilled and semiskilled occupations. These are

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[139]Tumin, op. cit., pp. 321-322.

[140]Ibid., p. 322.

> presumably the two forward-looking occupational groups. The traditional groups are of two kinds. One consists of occupations which, by usual classification, would be considered as managerial or sales. But under Puerto Rican conditions they are actually marginal occupations. These are the owners of roadside stands, small groceries and bars, and lottery salesmen. The other group consists of the usual service workers and laborers.[141]

In the study of intra-urban mobility based on data collected in the San Juan pilot study, Okraku used three groupings, "based on the extent to which the reported occupation involves manual work and also on the level of education it requires."[142]

The preliminary analysis of the San Juan data indicated that 41 percent of the currently employed occupants of housing in the lower-middle-class areas were in white-collar occupations, compared with negligible percentages living in any of the other neighborhoods. When skilled workers were included with white-collar ones, some 63 percent were in the combined group, with the proportion descending by housing type to only one fifth of those living in public housing. Half of the male heads of households living in the lower-class neighborhood likewise were skilled workers. The occupants of the slums and public housing, on the other hand, were more concentrated in semi-skilled and lower occupations (57 percent and 62 percent, respectively). It should perhaps be noted also, because of the

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[141] Slums, Projects, and People, op. cit., p. 47.

[142] Ishmael Obuadabang Okraku, op. cit., p. 146.

implications of growth of white-collar occupations, that the lower-middle-class neighborhood, in addition to its superior housing quality, was predominantly an area of owner-occupied, single-family homes, most of which represented first-time ownership and had been purchased by means of long-term, amortized mortgages.

Stage in family life cycle

The concept of stages in a family's life cycle as first developed was used to study the implications of changing family composition for expenditure patterns and levels of living among rural families. Glick[143] was among the first to explore the possibilities of the concept for describing the interaction patterns of family life at different stages in its history. The concept is in the process of further development, primarily through research on the content of family life, in which the family life cycle is viewed as a process. The quality of interaction among family members changes as a result of changes in the content of their roles as family members at different stages. One criterion of change in stage in the family life cycle, thus, is change in family size. The childless young family becomes an expanding family with the birth of their first child, and this stage continues until fertility is completed, when it becomes a stable family. As children grow up and leave home, the family enters the contracting stage and reaches the post-parental childless stage after the youngest child leaves the parental household. A second criterion, age composition of the family, denotes changes within these categories, as when the oldest child (and youngest child) shifts from infant to preschool child, from preschool child to adolescent, and from adolescent to young adult. The third criterion expresses the changes in the role content of the husband when

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[143] Paul C. Glick, "The Life Cycle of the Family," Journal of Marriage and the Family, Vol. 17 (1955), pp. 4-9, and, by the same author, American Families, New York: John Wiley & Sons, 1957.

he retires from active work and divides the post-parental childless stage into post-parental middle years and retirement aging.[144]

At each stage of the family life cycle, the housing needs of a family are different. The different requirements of families for housing according to ages of children are explained by Beyer as follows:

> One of the first housing needs when children arrive is an extra bedroom. The lack of an adequate number of bedrooms becomes more intolerable as the children grow older and as their numbers increase (especially if they are of opposite sexes). Below the age of eight (or, perhaps, six as some studies have recommended), children do not assert their independence and demand separate bedroom facilities. Such facilities may be desirable, especially in times of illness or when there are guests, but economics probably is the important factor. With the approach of adolescence, however, not only do children want more privacy from their parents and their brothers and sisters, but for opposite sexes privacy is generally recognized as a requisite. Teen-age children have their own friends, their own activities, and their own possessions. Their housing requirements continue until they leave for college or leave their family to join the labor force or to get married.[145]

Implications for space at different stages are, of course, related not only to family size but also to different activities carried on in the home, some of which carry through all stages, while others are relatively temporary in nature. Child care, for example, usually becomes a less important demand on space. The same activities also may place more or less demand on space at different cycles. The entertaining

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[144] Reuben Hill and Roy H. Rodgers, "The Developmental Approach," in Harold T. Christensen, ed., Handbook of Marriage and the Family, Chicago: Rand McNally, 1964, pp. 171-211. The authors trace the development of the concept of the family life cycle and discuss the use of the variable in a number of different types of studies.

[145] Housing and Society, op.cit., p. 284.

carried on by young couples with one or two small children ordinarily does not require a large amount of additional space. As children grow up, leisure activities in the home may require not only larger rooms but more of them.[146]

The quality of the neighborhood environment becomes important at various stages, both in its social aspects and in the facilities provided. It may be subordinate to more pressing wants of the childless couple, but outdoor space and protection from hazards for young children, the quality of community facilities such as schools and relatively safe access to them, as well as a range of other urban facilities, come to have high priority once the family moves into the expanding stage.

Abu-Lughod and Foley in their analysis of housing change with family life cycle change introduce the concept of the housing cycle, that is, "the progression of housing choices made by families at each stage of expansion, change, and contraction," and indicate the housing choices and compromises made between pressures of need and pressures of income. Location features and low rent are guidelines for young childless couples whose incomes are low. Expanding families may purchase a house of a size, quality, and location dictated by needs and limitations on income for financing or may rent a single-family house, where available. Though they may remain within the city limits, location features tend to be more important than in the preceding stage, but they have different characteristics: the emphasis is on improved environment for children--parks, recreation facilities, schools, and quality of schools. Desire

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146 See Ibid., Chapter 8, for a full discussion of design features related to different stages in the family life cycle.

to own a new house at this stage in the United States has meant usually a move to the suburbs. At the contracting stage (child-launching), the family has its best, and usually first, opportunity to have the home they want.

> Because of their changed motivation and less stringent economic limitations, purchasers of second homes constitute a quite different market from first-time buyers. For the first time, price is not the overriding factor. At last the family intends to get what it wants. If such cannot be found on the market, this age group is more likely than any other to have a house custom built for it.[147]

This home (if it is acquired) is likely to be retained well into the contracting family stage, particularly where the home is family-owned, as is likely, until widowhood, after which it may or may not be retained.

The concept of the family life cycle has also been extended in housing studies to take in what has been termed the "income cycle" of families, that is, the increasing income that (normally) accompanies increasing age of male heads of households until the occupational peak is reached, followed by a decline after retirement age. Studies of income change and family life cycle change indicate that income peak is customarily reached in the early stages of contracting size, when children are beginning to leave home. Duncan and Hauser found in their Chicago study an irregular, though similar pattern, with relatively high

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[147] Janet Abu-Lughod and Mary Mix Foley, "Consumer Differences," in Nelson N. Foote, et al., Housing Choices and Housing Constraints, op.cit., p. 111. Detail is being cited, not to generalize from United States experience, but because, given similar circumstances, similar considerations may be involved. Also, it is important to note in cross-sectional comparisons, that the future housing experience of young, newly formed households of higher education and occupations may be quite different from that of other households in the same age group and from that of older households in the same sample.

income among young couples, a decline among young couples with a pre-school-age child, a rise in income among families in the expanding stage, and a decline among older couples.[148]

Other needs of the family likewise increase or change in response to changes in the life cycle and some of them are likely to take precedence over housing needs. Using age of head as an index of family life cycle, Reid describes changes in housing consumption with age for households of different numbers of persons:

> Several conditions would lead one to expect housing consumption-income ratios to vary with age of head: In the first place, income tends to change with age; this change is likely to be anticipated, and housing decisions seem likely to have a long horizon, if only because changing a dwelling unit entails economic and, perhaps, social cost also....Variation in housing-income ratios with number of persons is to be expected if only because an additional person in the consumer unit is more likely to bring higher food than higher housing consumption. Such difference might be interpreted in terms of economies of scale, in that two or more persons can take turns sharing the same bathroom, or even the same bed. The effect of an additional person on consumption of food and housing can of course be otherwise interpreted. An additional person without a corresponding increase in income represents a lower normal income. If high-level housing consumption has a higher luxury component than high-level food consumption, then fall in housing consumption and rise in food consumption with an additional person present would not be surprising.[149]

Low-income families do not follow the "typical" housing pattern, even though they move through the same stages of the family cycle and experience much the same housing needs. Their failure to translate their

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148 Beverly Duncan and Philip M. Hauser, Housing a Metropolis--Chicago, Glencoe, Ill.: The Free Press, 1960, p. 243.

149 Housing and Income, op.cit., pp. 59, 69.

needs and desires into action stems from the lack of "financial assets and job stability necessary to achieve their housing goals."[150]

Rodwin reports the experience among lower-income groups in Boston. Movement out of the slums and deteriorating neighborhoods was made possible for the skilled workers only with the development of transportation and the provision of specially lowered fares, as well as better wages. Immigrant groups (characteristically low-income families during the period of the study), in addition, moved within areas relatively well defined by costs of housing and family income: the lowest income groups remained in the slums; the middle-income range moved to middle-cost areas, and the higher incomes moved to higher-cost areas.[151]

The Abu-Lughod and Foley study includes families with moderate incomes as well as those with higher incomes. Their figures on home ownership indicate a somewhat higher proportion of expanding families at the skilled and semiskilled occupational level taking on home ownership than among white-collar and professional groups, though the difference is small. Ease of financing and difficulty of finding rental quarters tend to operate together (in the large cities of the United States) to induce home ownership at this stage, since neither type of tenure provides a house that meets the family's needs at a price they can afford.[152]

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150 Housing Choices and Housing Constraints, op.cit., p. 121.

151 Lloyd Rodwin, Housing and Economic Progress, op.cit., pp. 91, 103, 205 fn. For a discussion of the family life cycle experienced among low-income families whose situation tends to be permanent as a result of the interaction of several characteristics, see Alvin L. Schorr, Poor Kids, op.cit., especially Chapter 3.

152 Housing Choices and Housing Constraints, op.cit., pp. 105-106.

For families at low-income levels, the same location features may remain of prime importance throughout the life cycle. When they can move to improve housing conditions of dilapidation or crowding, they usually move within reach of the same location advantages.

> First, he has developed a flourishing social life, flavored largely by the environment in which he lives. Since disaster may strike any family, there is a good deal of neighborly assistance to be had in times of stress. This is an asset unwillingly relinquished for a new, certainly more reserved, and possibly hostile environment.
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> Secondly, the low-income resident has become thoroughly familiar with the city services which alleviate his most dramatic needs, such as free public health services which provide outpatient treatment....Outlying districts are much less prepared to handle large-scale health and hospital treatment for the needy, if indeed these public services exist there at all.
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> Thirdly, the proximity of a variety of labor markets for unskilled and semiskilled workers is of primary importance in order to provide the maximum of alternatives if the worker is dismissed or an economic downturn appears. The low-income worker fears being trapped in a community with only one employment source.[153]

The desire for home ownership exists, though less strongly than among the families with better prospects:

> The only (and comparatively weak) counterpressure to the desire to remain within the city is the wistful desire on the part of the low-income consumer to own a home. Several surveys made since 1935 reveal that between 40 and 44 percent of low-income renters (and low-income consumers are renters) want to own their own homes. Among the few who had managed to achieve homeownership, fully 81 percent were satisfied with this tenure, despite the obvious burdens which it places on those of limited means.[154]

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[153] Ibid., pp. 123-124.

[154] Ibid.

Glick and Parke suggest that income per family member may be a better indicator of the changing purchasing power of the family at different stages than family income. In a study utilizing census data in which social and economic data on families at successive life-cycle stages were, for the first time, available, peak family incomes tended to occur, on the average, when the husband was between ages 45 and 54. At high income levels, the peak income occurred later, while at lower incomes (around $2,000 per annum) peaks usually were reached around age 40. Even though family income tended to rise during the expanding stage, however, when expressed as income per family member only a small gain in income was found. On the other hand, family size tends to decline faster than income in the later stages. While family income was at its peak usually in the contracting stage, income per family member continued to rise into the later stages and to reach a peak when the husband was between 55 and 64 years of age.[155]

The analysis of the interrelationship among income, family cycle, and housing spells out the extreme importance of stage in family life cycle in housing studies: for design, location, residential mobility, tenure, and, in fact, every phase of the analysis.

It is apparent from the nature of the family life cycle concept that it expresses a number of demographic and social characteristics in the national population, among them age of marriage, age differences between ages of men and women at time of marriage, number and spacing of children,

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[155]Paul C. Glick and Robert Parke, Jr., "New Approaches in Studying the Life Cycle of the Family," Demography, Vol. 2 (1965), pp. 189-202.

and practice of birth control. In the United States, census data have been used to develop the components of the measure. Abu-Lughod cites the median family at the time of her study:

> A native-born family consisting of husband and wife, married at 23 and 20 years respectively, was augmented in size by two, or occasionally three, children. The first child was born before the husband's twenty-fifth birthday, the last before he reached the age of 30. Family income ranged in 1950 from a low of $3,000 per year at marriage to $4,000 at age 25-34 years and reached a peak of $4,500 by the time the husband was 45 or 50 years old. The median husband will die aged 64; his wife, surviving him by 8 years, will die aged 72.[156]

Using revised and updated estimates of trends in life-cycle stages during the twentieth century based on the latest available census data and revised techniques for estimating intervals between the stages, Glick and Parke report some demographic changes which have had substantial effects on the typical family life cycle. Marriages are tending to be made at earlier ages; women are two or three years younger when their fertility is completed, four or five years younger when their youngest child is launched, and have an additional nine years of married life.[157]

The measure does not reflect number of children in a family, an important aspect for design. When the birth rate of a country is relatively stable, average number of children that can be expected in families is implied in the census data. Where its effects are important considerations for certain topics, number of children (like number in household) has to be used as a separate measure.

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[156] Housing Choices and Housing Constraints, op.cit., pp. 96-97.

[157] Glick and Parke, op.cit.

In addition, the concept of the family life cycle does not reflect long-term changes in mortality rates or short- or long-term changes in the national birth rate. These limitations have to be considered when generalizing survey findings to the general population. Okraku has summarized them in relation to their application in a developing country:

> It must be pointed out that these stages of the family life cycle are derived from characteristics of an average family and are subject to defects normally associated with measures of central tendency. A further, and perhaps more disturbing, drawback of the concept of the life cycle as used by Glick and other writers is that while it is derived from static data pertaining to one point in time, it is usually utilized to expound a dynamic pattern of family behavior. It assumes that the characteristics of families observed at a particular point in time will prevail at other points. In this respect it is similar to such measures as the gross reproduction rate and the net reproduction rate that were often used by demographers to explore long-range patterns in reproduction although they were obtained from data which were severely time-bound. In the absence of large-scale shifts in socio-economic patterns, the life cycle derived from static data can safely be used to depict sequential behavior. However, its reliability in this regard is greatly limited under conditions of rapid change. In view of this, extreme caution must be exercised in applying it to a country like Puerto Rico, which is experiencing massive changes in its social and economic structure.[158]

It should be pointed out, also, that the income cycle and the housing cycle suffer from the same limitations as the family life cycle. Given a situation of relatively low incomes and low occupational levels, it is doubtful that a progression of rising income can safely be assumed; at the least, different income cycles for each housing area seem

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[158]Ishmael Obuadabang Okraku, op.cit., p. 129.

likely. The pattern of median annual family income in the San Juan sample found by Okraku was relatively high income in the pre-child ($2,500) and expansion ($2,400) stages, followed by a sharp decline in the child-rearing stage ($2,125), and, as usual, another decline in thepost-child stage ($1,950). Okraku states:

> ...the hypothesized relationship between family life cycle and family income is not supported in this study. The young couples in the pre-child stage have considerably higher income than most families in later stages of the cycle--a fact that reflects the opportunities for higher education and better jobs now available in Puerto Rico....When static data are used to analyze the family life cycle they must be interpreted as such. It must be realized that the characteristics observed at the different stages of the cycle belong to different generations of families and do not describe the life cycle of any single group of families.[159]

Although the housing cycle of any income level in developing countries remains to be determined, Okraku found support for the concept of the housing cycle in the San Juan data.

> It has been suggested and supported in this study that a third cycle, "the housing cycle," corresponds to the changes in family size and socio-economic patterns noted previously. This cycle reflects the unique housing needs and problems that the family faces at each stage of the life cycle. In the early stages a rapid expansion of family size makes the need for large, spacious owner-occupied homes very pressing. In the latter stages when this need has been satisfied by most families, concern with the suitability of the house and neighborhood of residence with respect to the family's now high socio-economic standing becomes more noticeable.
>
> As a means of adjusting housing to housing needs and aspirations, family residential mobility rates vary during the different stages of the cycle, reflecting

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[159] Ibid., pp. 252-253.

> the strength of the different needs in precipitating a change of residence. They are highest in the early stages and decrease steadily with each advancing stage, reaching very low levels in the last stages. A slight upturn in mobility rates is often observed in the post-child stage and reflects a tendency for some old couples to leave their large homes for smaller ones. However, the increase in mobility is generally not as high as may be expected, for most old couples prefer to retain the family home, with its larger size, rather than leave it for a rented unit.[160]

Other differences in developing countries may invalidate the use of the family life cycle concept. One is where the nuclear family is not the predominant type, since the "concept of the family life-cycle used by social scientists has been developed mainly on the basis of data on the family structure existing in the United States and other advanced nations where the nuclear family predominates." The other is "where private home ownership, even though it may be widely desired, is hardly ever achieved by most families due to high financial costs:"

> Also implicit in the life cycle-hypothesis is the idea that private home ownership is an ideal to which most couples aspire and which they are able to achieve at some time in life. These conditions exist mainly in advanced nations, particularly the United States, which helps to explain why the concept was first developed and tested in this country.[161]

However, Okraku concludes:

> In spite of these drawbacks the analysis of the family life cycle undertaken in this study has provided insights into the dynamics of residential mobility in San Juan. In particular, it gave additional meaning to such factors as age, home ownership, size of household, and the expectation of additional children, whose significance for

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[160] Ibid., p. 251.

[161] Ibid., p. 253. Quoted material on pp. 113 and 254.

> residential mobility seem to derive in a large measure from their implicit incorporation in the family life cycle approach.[162]

Data for the construction of stages in the family life cycle are available from information on household composition. In housing studies, the emphasis is ordinarily on housing needs at different stages rather than on the development of the family throughout its life span.[163] The general scheme of categories developed for studies of family life is followed, but adapted to the specific purpose of the study. Abu-Lughod and Foley identified six stages which indicate variations in family size:

I. Pre-child (constant size)
II. Child-bearing (expanding size)
III. Child-rearing (constant size)
IV. Child-launching (declining size)
V. Post-child (constant size)
VI. Widowed[164]

In her study of hygiene attitudes and practices, where attitudes and practices were expected to vary according to presence or absence of children and according to ages of children, and where age of head was of minor importance for the discussion, Langford used a scheme that distinguished between three types of adult households (single, couples, and other adult) and three types of households with children (all children

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[162] Ibid., p. 254.

[163] This does not mean that the family life cycle stages cannot be used to describe the development of family life in relation to its housing, only that other research objectives have had priority. For a description of family life and housing according to stages in the life cycle, see Frederick Gutheim, Housing for Family Living, New York: The Woman's Foundation, Inc., 1948.

[164] Housing Choices and Housing Constraints, op.cit., Table 19, p. 99.

under age 6, some under age 6 and some age 6 or over, and all children age 6 or over).[165] The arrangement simplified analysis by sex as well as age of children, an important consideration in the study.

Rossi, in his study of residential mobility, classified families according to type of household: complete families (both parents and unmarried children present); incomplete families (childless couples); broken families (one spouse absent); single persons; and miscellaneous.[166] The important criterion for the analysis was size of household.

To express the different housing needs at the different stages in the family life cycle, Beyer used age of wife and whether or not children were present to classify families into four major types, as follows:

1. Young couple--the family type in which the woman is under thirty-five years of age and there are no children.

2. Founding family--the family type having some children, all under the age of eight.

3. Expanding family--the family type having some children between the ages of eight and eighteen (there may be some children below eight or some over eighteen).

4. Contracting family--the family type in which the woman in thirty-five years old or older and there are no children under the age of eighteen.

Each classification of family type allowed for households with or without "other adult" members. Households composed solely of related adult members (brother and sister, father and daughter, and similar combinations) were a category under Contracting Family, since their household

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[165] Marilyn Langford, Personal Hygiene Attitudes and Practices in 1000 Middle-Class Households, Ithaca, N.Y.: Cornell University, Agricultural Experiment Station, Memoir 393, 1965, p. 88.

[166] Peter H. Rossi, Why Families Move, Glencoe, Ill.: The Free Press, 1955.

size and hence housing needs were not likely to change.[167] Such a classification permitted focus on features of house design and other aspects of housing from the standpoint of the homemaker, the person most likely to be involved with deficiencies of space and equipment, and their effects on family members.

The family life cycle as described by Okraku for his study was derived chiefly from data on household composition, relationship of household members to head of the household, and age. Four stages were defined, and families classified into one of the four on basis of ages of children living at home. Families with no children living at home were classified by age of husband. The two substages in Stage 3 were defined by fertility expectations, that is, whether or not more children were planned. The life-cycle stages and corresponding family types were:

1.	Pre-child:	couples with no children, age of husband under 35 years.
2.	Expansion:	families with all or majority of their children 11 years or less.
3.	Child-rearing and contraction:	families with children 12 years and over living at home.
	A. Child-rearing:	families with all or most children at home between 12 and 21 years old.
	B. Contraction:	families with all or most children 22 years and over.
4.	Post-child:	couples with no children, age of husband 50 years and over.[168]

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[167] Farm Housing in the Northeast, op.cit., pp. 10-11.

[168] Okraku, op.cit., p. 130.

The principal differences between the models in the literature and the one developed for the San Juan study are in the age of husbands and ages of children, as can be seen. These factors are defined by characteristics of the population sampled (which is compared with census or other official data for representativeness, wherever possible). In the San Juan survey, there were relatively few husbands under age 25 and a large proportion of husbands age 35 and older. Ages of children were correspondingly higher. The average age difference between husbands and wives in the sample was seven years. Consequently, age of wife alone would not necessarily reflect age of husband within the same stage, which would tend to blur the effects of income change between stages. For the analysis, income and housing cycle data were tabulated according to stage in the life cycle in order to see if there was a trend and to define its characteristics. Some major characteristics of the three cycles and some differences and similarities between the family life cycle stages delineated in the San Juan study and those previously set forth are as follows:

Pre-child stage: average age of husband is 27.3 years; mean family size, 2.31 children, over three fifths of families expected more children; median annual income was $2,500; only 6 percent owned own home; average size of home was 4.25 rooms. Average income was higher at this stage than at other stages, except the child-rearing stage, and houses were larger than those in the expansion stage.

The expansion stage also has some differences from the United States model. Mean family size is 5.53 persons; about one third expect to have more children; houses are smaller than at the preceding stage; more are owned, and median income is lower than in the preceding stage.

In the third stage, home ownership reached its highest point, mean family size declines a little to 5.04 persons; only 5 percent expect more children; net median income is lower than in the preceding stage, reflecting the difference between the high income (relatively speaking) for child-rearing families and a large drop in income for contracting families. The difference from the model reflects the older age of when they reach this cycle, possibly because child-bearing is not restricted to the early cycles by a large proportion of families in developing countries (or among low-income populations in general): average age of men in the contracting cycle was 66 years. In the fourth stage, less home ownership was found, but still a high proportion; house size was declining and so also were family size and income.

SECTION IV

HOUSING ASPIRATIONS AND IMPROVEMENT OF HOUSING AND NEIGHBORHOOD

One premise underlying the proposed design for a housing-urbanization study is that forces operate in the field of low-cost housing which may be utilized to bring about effective improvement in an urban housing situation. Since neither houses nor neighborhoods are self-improving or self-maintaining, the principal forces are the aspirations of the low-income propulation to improve their level of housing, or, at the least, keep it from deteriorating. Specific actions to improve housing are another and important part of the analysis. The emphasis, however, must be placed on aspirations. Action may be restricted by a variety of considerations, many unrelated to housing, while aspirations may exist whether or not they can be immediately expressed.

In essence, this portion of the analysis should reveal the basic ingredients for urban planning: what is perceived as a better housing situation, the strength of the desire to attain it, and the housing services of importance to families of different characteristics. Such an analysis is likely to be especially revealing where housing choices are severely restricted, either because of limitations in the supply or the inability to make demand effective, or both.

For purposes of this manual, a housing aspiration is being defined as a strong desire to improve (or, in some instances, maintain) a level of housing. The indicators of housing aspirations are the attitudes, values, expectations, and behavior of families with respect to their

present housing and neighborhoods. Families are inescapably in constant contact with their housing and neighborhoods, and it can be expected that they will have some well-defined attitudes not only toward their own but also toward housing and neighborhoods in general.

A comprehensive and generally accepted definition of what the concept of attitude stands for has not as yet been achieved. There is, however, general agreement that attitudes have certain properties. They are relatively permanent and reflect evaluations; that is, attitudes have some degree of affect--they are, in other words, positive or negative, not neutral. Attitudes refer to objects (social or physical); that is, the individual does not have an attitude toward something that does not exist for him. Another, and important, characteristic is that, since they are formed within a culture and refer to objects in the culture, attitudes are likely to be shared by substantial proportions within a national population.[1] A brief summary of the highly complex subject of attitudes is as follows:

> The attitude concept seems to reflect quite faithfully the primary form in which past experience is summed, stored, and organized in the individual as he approaches any new situation. Such experience is best described as a residue (but nontheless highly organized) of cognized objects to which experience has lent affective color or valence. And... a knowledge of this residue helps to predict either future states of component processes (future motive arousals, future perceptions, future learning), or general trends in future behavior itself.[2]

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[1]H.C.J. Duijker, "Comparative Research in Social Science with Special Reference to Attitude Research," International Social Science Bulletin, Vol. 7, No. 4 (1955), pp. 555-557. See also Gordon W. Allport, "Attitudes in Carl Murchison, ed., A Handbook of Social Psychology, Worcester, Mass.: Clark University Press, 1935, pp. 798-844.

[2]Theodore M. Newcomb, Ralph H. Turner, and Philip E. Converse, Social Psychology: The Study of Human Interaction, New York: Holt, Rinehart and Winston, Inc., 1965, pp. 41-42.

Attitudes tend to resist change when they have strong affect toward an object of paramount importance to the individual, are goal-related, and the individual is well-informed about them. They can be changed in response to new information about the object, actual change in the object, or when the relationship between the individual and the attitude object changes.[3]

Although a housing survey is not a study of attitudes in general, it can be expected that attitudes toward housing are part of a complex of attitudes. An aspiration to improve housing may be in line with other aspirations, in competition with them, or nullified by them. Action to improve housing is expensive and requires considerable effort and a number of attitudes are likely to be called into play. The effectiveness of attitudes toward housing for overt action, therefore, needs to be evaluated not only in terms of ability to act as shown by family characteristics but also in terms of attitudes toward other aspects of living: achievement, work, family, and so forth.

In addition, the effectiveness of attitudes is strongly influenced by the immediate situation or, rather, how the immediate situation is perceived. An attitude favoring investment in a higher level of housing, for example, may not lead to positive action if the family does not perceive its own situation as improving or is pessimistic about its future prospects.[4]

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[3] Ibid., Chapter 4.

[4] See George Katona, The Powerful Consumer: Psychological Studies of the American Economy, New York: McGraw-Hill Book Company, 1960, for an analysis of the effects of attitudes on consumer expenditure patterns.

Indicators of attitudes and behavior of families with respect to housing and neighborhood will be discussed in the present Section. Section V will consider measures of attitudes toward social and physical objects in the broader urban context.

Attitudes and Aspirations of Families Related to Housing

Housing and neighborhood are highly complex objects, with specific characteristics of size, quality, price, tenure, location, and services. Housing, for example, provides shelter and, sometimes, comfort for the conduct of family activities and is the base from which family members interact with the urban community. Features that take account of the social aspects of housing, however, frequently have to be sacrificed to the economic consideration of cost:

> Thus, the housing choice is not only a compromise among location, tenure and dwelling, it is also a compromise within the dwelling--among equipment, design, state of repair, and space--with cost the comparatively inflexible limiting factor which makes the other choices necessary. Estimating consumer preferences in housing is therefore an extremely complex matter, depending on how the individual consumer rates these variable factors.[5]

Attitudes and preferences, therefore, toward each major element of housing and neighborhood and toward the total housing environment will need to be determined.

If the choices made by the middle class have been restricted, as the studies cited would seem to indicate, it seems safe to assume that the choices available to lower-income families are even more circumscribed and that an even wider gap exists between their present and

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[5]Janet Abu-Lughod and Mary Mix Foley, "Consumer Preferences: The Dwelling," in Nelson N. Foote, et al., Housing Choices and Housing Constraints, New York: McGraw-Hill Book Company, Inc., 1960, p.219.

desired conditions. Turner's analysis of the low-income housing problem in Latin America classifies it as one of emphasis on shelter and location for certain groups, primarily security of tenure for other groups, and one of comfort for still a third group.[6] These classifications may be viewed as representing over time a redefinition of housing need as family circumstances change.

Research on attitudes and preferences can help to establish the point at which a society or subgroup finds itself, by showing which needs at what level seem most pressing.

Measures of attitudes toward internal features of the dwelling unit are extent of satisfaction with features of the present house and, specifically, with the bedroom space presently available.[7] The rationale for the first measure is that families differ in housing needs and problems and tend to evaluate the dwelling unit in terms of those factors. Their satisfaction or dissatisfaction serves to indicate the extent to which they see the house as meeting their needs. Space, and particularly bedroom space, are important indicators of adequacy of the present house as perceived by the occupant.[8] Number of bedrooms, in particular, measures adequacy of space and not merely poor layout or other deficiency of the house which is only perceived as it affects space.

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[6]John C. Turner, "A New View of the Housing Deficit," in Charles A. Frankenhoff, ed., Housing Policy for a Developing Latin Economy, Rio Piedras: University of Puerto Rico, 1966, pp. 35-58.

[7]For specific questions related to these items, see Appendix, under Attitudes.

[8]American Housing and Its Use, op. cit., p. 17.

Since the quality of housing changes more slowly than family composition, family life cycle stages are important determinants of how well a house is serving the needs of the family. Overcrowding, for example, is likely to become a more serious problem in the middle stages of the family life cycle. Rossi points out that when size of family shifts, that is, when another child is born, families begin to recognize that space is inadequate.[9] Dissatisfaction with space, in other words, relates more to changing family needs than to changes in the dwelling unit or neighborhood.

It would appear that bedroom space is more of a problem for lower income families than for others. Higher-income families more often stressed the desire for other and less essential rooms--dens, family rooms, and the like.[10] There was some evidence of a similar trend in the San Juan sample. Lower-middle class respondents, for example, gave as reasons for wating more bedrooms a desire for more space in general--a utility room, a separate bedroom for each child or family member, and so forth.

In the San Juan pilot study, the number of bedrooms desired was cross-tabulated with number of bedrooms in the present dwelling unit and the housing neighborhood groups were categorized as wanting more, less, or the same number as they presently had. Of the total

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[9]Peter H. Rossi, Why Families Move, New York: The Free Press, 1955, p. 144.

[10]Housing Choices and Housing Constraints, op.cit., p. 242.

sample, 71 percent wanted more, while only 5 percent wanted the same number as they had. Okraku cites the characteristics of the households wanting more bedrooms: (1) living in slum or public-housing neighborhoods, (2) having low incomes (under $2,500 a year), (3) being under age 50 (with a higher proportion under age 35 than between ages 35 and 49), (4) in the expanding stages of the family life cycle, and (5) living in rented dwelling units.[11]

Other space requirements may, for some families, be as important as bedroom space or house size as indicated by number of rooms. Even families not crowded so far as persons-per-room and per-bedroom indexes show may not have enough room. However, satisfaction or dissatisfaction with number of rooms and bedrooms appear to be primary causes of discontent even among families who own their own homes or who are otherwise satisfied with the dwelling unit.

Attitudes toward the whole house may influence attitudes toward some of its specific features (and vice versa, of course). Beyer, for example, reports that even with household size and number of bedrooms held constant, renters were more dissatisfied than owners with space.[12]

Another measure is extent of overall satisfaction with the dwelling unit. It is used in conjunction with the previous measures and serves to differentiate between dissatisfaction with internal space. In the San Juan sample for example, some 60 percent of the total group reported satisfaction with the house they were living in, compared with only about 40 percent who were satisfied with the number of bedrooms in the

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[11]"Residential Mobility Intentions and the Family Life Cycle," unpublished Ph.D. dissertation, Cornell University, September 1968, p.228.

[12]Glenn H. Beyer, Houses are for People, Ithaca, N.Y.: Cornell University, Center for Housing and Environmental Studies, 1955, p.42.

dwelling unit.

Desire for other specific design features, or preferences, for them, may also be included in the survey. No usable general list can be given, since preferences would be related either to desirable features in local housing, to specific lacks in the existing low-cost housing, and to the general character of housing in a given society. One example is how satisfactory the material of the structure is considered to be. The measure has relevance chiefly where climate does not narrowly dictate the use of materials, where a variety of building materials are used for houses in the local area, and where variations in cost among materials do not preclude the use of some of them in low-cost housing.

It is recognized that much of the housing in developed countries has been planned on basis of preference. Questions on preferences may have value, if they are related to the respondent's experience, in eliminating some highly undesirable features through design, or in including some widely recognized desirable item. Where the purpose of a study is to improve housing design such questions have left much to be desired.[13] They can be used to describe static situations--obvious lacks to be met or obvious features to be eliminated--but they do not predict future purchasing behavior in situations where a compromise has to be made between a desired house characteristic and the cost

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[13]See Glenn H. Beyer, Housing and Society, New York: The Macmillan Co., 1967, Chapter 8, for discussion of their limitations.

of obtaining it.[14]

The Cornell values study is one of the few attempts made in housing research to tap attitudes rather than preferences. A list of questions was constructed to explore attitudes toward the requirements of activities (as space, privacy, separateness, and so forth) as perceived by the household.[15]

In order to test the relevance of measuring attitudes toward relatively sophisticated house planning in a low-income population in a developing nation, the set of questions discussed above was incorporated in the San Juan pilot study. Two statements (sharing bathroom with other members of the family and having other family members around when dressing) attempt to elicit attitudes toward privacy. The remaining twelve statements are concerned mainly with attitudes toward specific design features of house planning, such as: shelter for equipment outside the house; adequacy of ventilation within the house; separate rooms for certain activities such as dining and entertaining; general privacy from the street; location of bedrooms; traffic lanes in the house; open planning; and reactions to the monotony of uniform housing.

Attitudes of husbands only were explored. The items over which much concern was expressed were the two privacy statements. About one half (and usually a higher proportion outside the slum neighborhood),

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[14]Richard U. Ratcliffe, "Housing Standards and Housing Research," in William L. C. Wheaton, Grace Milgram, and Margy Ellin Meyerson, Urban Housing, New York: The Free Press, 1966.

were bothered in varying degrees by lack of privacy in the bathroom or while dressing, or having guests see garbage cans or milk bottles outside the house. Most of the sample evinced indifference to cooking odors flowing through the house (39 percent in the lower-middle-class neighborhood and considerably less elsewhere), privacy from guests (highest in the lower-middle-class neighborhood, 33 percent), or people being able to see into the house from the street (highest in the lower-middle-class, 37 percent, and lower-class neighborhoods, 38 percent). Interestingly, the slum area showed more (though still not high) concern than the other neighborhoods over carrying groceries through the living room (35 percent, compared with next highest, 24 percent in the lower-middle-class area). Considerable indifference was expressed toward having wives separated from family while cooking, location of bedrooms of either adolescents or small children, entertaining while teen-age children were around, or being able to watch the street from the house. Like the United States sample, very few respondents were bothered by having their house look like others along the same street (highest in the lower-class neighborhood, 11 percent).

There were, of course, some large differences by neighborhood type; in general, the lower-middle-class showed the most concern with the items and the slum neighborhoods the least. On some statements, particularly those related to privacy in the bathroom and while dressing and location of adolescents' and young children's bedrooms, attitudes of the occupants of public housing were much closer to those of the lower-middle-class people than they were to those living in the slum areas.

The general indifference to several of the planning features related to the interior design of the dwelling unit may be explainable in two ways: first, that such planning features are not yet observed as problems; that is, interest is centered on the overall dwelling unit rather than on "minor" improvements; and second, that the sample in general had never considered the possibility of having such features within housing available to them. At the least, the responses would seem to indicate that at their present levels of housing practical considerations have precedence. It should be pointed out, though, that the attitudes of wives might differ considerably on some items, since women are more directly involved with interior design features. In the Cornell values study, for example, women were more concerned than men about cooking odors throughout the house, location of younger children's bedrooms, traffic lanes, and lack of privacy in the bathroom.[16]

Attitudes toward location and neighborhood

From research in the United States on housing and residential mobility, it has been found that people do not, in general, view the neighborhood and location of their homes as a single unit. Rather, they have expressed attitudes toward three distinct aspects of location and neighborhood as site, as a physical environment, and as a social environment.[17] Site features define the relation of the neighborhood and house

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[16] Houses are for People, op. cit., pp. 37-38.

[17] Housing Choices and Housing Constraints, op. cit., pp. 180-181.

to the rest of the city. The site is seen as convenient or inconvenient insofar as accessibility to work, shopping, schools, recreation, and other urban services and amenities are provided. Accessibility may involve being "close to," in terms of physical distance or through public or private transportation; the latter bring into consideration issues of traffic congestion, travel time, roads, streets, and similar community facilities.

Location and neighborhood as a physical environment brings in features of environmental quality: density of land use, space around houses, light, and the like. It also involves considerations related to how well (or poorly) the neighborhood is equipped with municipal services (water, sewers, garbage collection, street cleaning, police and fire protection, street lighting, and so forth) and with facilities (schools, libraries, theatres, neighborhood stores, and so forth).

Location and neighborhood as a social environment is defined principally in terms of characteristics of the people living in the neighborhood, who, of course, create the social environment. Social environment is of particular importance because it represents almost the total social environment of pre-school children, most of the homemakers, and contacts within the neighborhood are difficult to avoid even by those who are in the labor force working elsewhere during the day. Social environment, where quality and accessibility are given, probably is the determinant of the social prestige of the neighborhood.[18]

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[18] Ibid.

Measures of attitudes toward location and neighborhood, which are developed from expressions of satisfaction or dissatisfaction with location and neighborhood features, are designed to differentiate among these three aspects. Other measures, related to both house and neighborhood, include what respondents were looking for when they moved to the present dwelling; channels through which they heard about the house; comparison of the present with a past dwelling and location; and whether or not relatives live nearby.

Results of research on neighborhood satisfactions and dissatisfactions in the United States may be summarized briefly. In general, site and quality features of neighborhoods were seldom a source of complaint. In this connection, however, certain "tacit assumptions" made by people in choice of location must be taken into account. Rossi observes, with respect to his sample:

> Certain features of the dwellings they were looking for are so completely taken for granted that they are not mentioned as specifications. To cite an extreme example, not one of the families stated that they were looking for a house or an apartment which had a bathroom. Bathrooms are such an essential feature of dwellings that units which did not have one would have been automatically rejected. There are undoubtedly other tacit assumptions which... certainly enter into the determination of which dwelling a household will choose. Tacit assumptions, for example, are held concerning the location of the dwelling. Not all areas of the city are considered, only those within some range of acceptability. [19]

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[19] Why Families Move, op. cit., p. 155.

Although selectivity among neighborhoods undoubtedly operates to exclude extreme differences, social characteristics of neighborhoods are not as visible as site and quality features. Abu-Lughod and Foley report:

> When the housing consumer evaluates his neighborhood satisfaction, his central concern is neither geographic site nor physical characteristics. Among consumers satisfied with their location (roughly two-thirds to three-fourths of all consumers), the chief reason for satisfaction seems to be the social characteristics of the neighbors. Among consumers dissatisfied with their neighborhood location (one-fourth to one-third of all consumers), the basic cause seems to be, again, the social characteristics of their neighbors.[20]

In a comparative study of patterns of adjustment of urban families in the United States and England to life in new rural-urban fringe neighborhoods, Bracey found that important considerations to Americans in the choice of the neighborhood had been nearness to jobs (that is, a good highway system for use of private cars) and to a good school system followed by good value in the house and liking the area. The English placed as most important being in the country, followed by nearness to jobs (that is, good public transportation facilities), liking the design of the house, and having to make only a small down payment. Americans tended to be satisfied with their neighborhood when it close to good schools, people were friendly, and urban facilities were accessible. The

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[20] Housing Choices and Housing Constraints. op. cit., p. 183.

English were satisfied because they were in the open country, the neighborhood was good for children, and people were friendly. Only two sources of dissatisfaction were important to Americans: looking forward to have a better house, lot, or location, and high density of houses in the area sampled. The English complained most of inadequate services and shops, layout of the subdivision (estate), permissiveness to mixed land use that lowered property values, and delay in providing schools and playgrounds for children. Both Americans and English placed a high value on safety of children from heavy traffic in area).[21]

Views of location and neighborhood features can, of course, be expected to change over time and as the family moves into and out of different cycles. Concern over playgrounds is likely to give way to concern over schools, and concern over schools to prestige factors as family characteristics change. Longitudinal studies of attitudes that follow a group of families through time are needed to substantiate the interpretations made from cross-sectional and Census studies.

From the San Juan data, some differences can be noted, as might be expected, among features of location and neighborhood that were sources of satisfaction or dissatisfaction to the respondents. The most important source of satisfaction in all the neighborhoods

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[21]Howard E. Bracey, Neighbours. Subdivision Life in England and The United States, Baton Rouge: Louisiana State University Press, 1964. Sample of 120 families in low-cost subdivision around Bristol, England, and similar number in a low-cost subdivision around Columbus, Ohio.

was a social one--"nice neighbors." There were substantial differences among neighborhoods on this point, however: 70 per cent of the lower-middle-class neighborhood and 60 percent of those in public housing thought this, compared with 53 percent in the lower-class neighborhood and only 45 percent in the slums. Conversely, "disagreeable neighbors" were not serious sources of dissatisfaction, this reasons being given by only about 10 percent in public housing and the lower-class neighborhood, 4 percent in the lower-middle-class neighborhood, and somewhat more in the slums, 17 percent. On the other hand, the majority of the lower-middle-class thought that their neighborhoods were quiet and clean, but the proportion of those in public housing and in the lower-class neighborhood who thought that was substantially lower. In the slum neighborhoods, only 22 percent considered their neighborhoods quiet, and only 8 percent indicated that they were clean. The lower-middle-class neighborhood tended to be satisfied with transportation facilities and shopping facilities and though to a much lesser extent, with educational facilities for their children. Families in the slums were less satisfied with each of these, and least of all with transportation facilities. Satisfaction with recreational facilities for children was not high in any of the neighborhoods--lack of recreational facilities for children and adults was the principal complaint in the lower-middle-class area (but only about one fourth cited it). Environmental quality, as might be expected, was a source of serious complaint to the slum families--over two thirds complained

about bad odors and delinquency; drug addiction and a generally bad social environment were almost as serious. To a much lesser extent, complaints about environmental aspects were made in the public housing and lower-class areas as well.

Features of the lots on which houses are situated, particularly in high-density areas, may be important, although the most prominent sources of dissatisfaction seem to be the dwelling units themselves and social characteristics of the neighborhood. Sizes of lots on which the house is situated have not received as much attention in housing research as perhaps they deserve. One reason is that minimum sizes for building lots within cities are usually legally specified. Another is the cost factor: urban land has high value and there is a direct relationship between cost of the land and cost of the house.[22] In housing developments outside cities, lot sizes for the individual units have been more or less determined by the developer, with sometimes some legal restrictions on minimum size, density of settlement, and, in higher quality developments, some working knowledge of what consumers in the anticipated income range have been looking for. New custom-built houses are, of course, usually on lot sizes known to meet the desires of a particular type of consumer.

Another reason for lack of concern with this topic is that most consumers do not know sizes and specifics with respect to lots but rather tend to think of space around the house in terms of desired use, for recreation, leisure, children's play grounds, and some household activities.[23]

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[22] Housing Choices and Housing Constraints, op.cit., p. 261.

[23] Ibid., P. 260.

The Cornell values study, where the indicator was the outdoor activities preferred, reports some indications of preferences.

> The size of lots was also cause for complaint. In the Buffalo study, one of every five women and one of every four men would have liked a larger lot or more land than they had. (Most of the families who felt this way were living in houses of moderate price, with a lot of only 50' x 125'.) Perhaps more husbands than wives would have liked more land because, when they come home from work and a full day of seeing people, they enjoy a house and yard that makes privacy possible. Their wives, however, who go through much of their daily routine alone, perhaps enjoy being in closer touch with the neighbors.[24]

Sizes of individual lots are, of course, related to the overall density of the residential area as well as to the pattern of urban growth. Legal restrictions on buildings and lot size represent attempts to insure adequate ventilation and light in and around buildings and to reduce house crowding. Schorr, citing studies, points out that crowding in "external space has negative consequences in illness, in relationships between people, and in general irritability." [25]

Building at high-density levels is generally conceded to be characteristic of many slum areas in developing countries. The attitude toward lot sizes may be affected in areas of any level of quality where the tendency to erect squatter shacks on any vacant land still prevails; that is, where owners are not

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[24] Houses are for People, op.cit., p. 38.

[25] Alvin L. Schorr, Slums and Social Insecurity, Washington, D.C.: Government Printing Office, 1966, p. 40.

legally protectd. High density, when compounded by other deficiencies of location, may be a cause of neighborhood deterioration, as Turner has pointed out. Owner-occupants and those desiring to own are likely to move to areas where there is room, eventually, to build or otherwise acquire the type and size house they need.

Very likely, however, the most important consideration with respect to urban lots in developing countries is tenure status. There is likely to be little improvement of housing at the same site where the land is not securely held in some legal or quasi-legal manner. In some municipalities, moreover, tenure of the house lot may be an important source not only of dissatisfaction but of insecurity as well. Ownership of land was taken into account in the San Juan pilot study. In San Juan, however, ownership of the house included ownership of the lot as well--only 2 percent rented the lot and only another 2 percent reported the lot as "free".

The land problem may be more serious in municipalities where slum areas evolved from settlements on vacant land more or less illegally taken over. The literature indicates a variety of possibilities: land rented out by owners in urban areas, settlements on government-owned land, land later purchased, and not infrequently, a takeover of a large area of land by means of a planned invasion.

Security of land tenure may be assumed to have different degrees of importance for families at different times. Turner[26] has defined

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[26]"A New View of the Housing Deficit," loc.cit., pp. 37-44.

housing need at all socioeconomic levels as made up of three requirements: the need for shelter, for security, and for location facilities. The importance of each need changes in response to changes in the characteristics of a family. An unskilled recent rural in-migrant seeking employment and without resources has location needs of greater importance than his housing needs. A one-room improvised shack or a rented unit in a deteriorating structure will provide shelter for the family, but it must be situated near sources of employment, or with cheap access thereto.

> Location close to job sources and the complex of sellers and buyers has importance in itself. It is not only that proximity minimizes or eliminates transportation expenditures, though that is a matter of some importance when one tram ride represents the cost of a meal. Usually, the bulk of lowest paid jobs are in the centre of the city. It is the best location for the bootblack, the errand runner and the man who lives by picking up odd jobs. It is of great importance to the man who makes his living by hauling goods on a cart or pulling a rickshaw or performing other services that oblige him to get to work early. It is important to the man who runs a small business and must get supplies or deliver finished goods without losing too much time from a working day. It is important to the persons who work in small factories which take on workers only when the factory gets a contract. Such workers must live close to their potential employers so as to reach them before all the jobs are filled. Workers depending on makeshift or odd-job work must live close to as many as possible sources of employment in order that their chances of finding a job are good.[27]

Where insecure income is the problem, security in housing beyond the provision of shelter is likely to have a relatively low value. While the situation is usually associated with rural in-

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[27]United Nations, Economic and Social Council, Social Aspects of Housing and Urban Development, New York: United Nations, 1967, p. 7.

migrants, it does not necessarily change with length of time in the city. In addition, the unskilled frequently have difficulty entering the labor force regardless of place of origin.

It is among those who move to the level of steady employment and average earnings that stabilization of residence is considered to become of paramount importance. The family may have moved from the crowded slum and still be renting or, if it owns the house, it seeks to reinforce its position.[28]

Families in situations such as those described are, according to Turner primarily seeking security, not housing. The primary need is security of tenure, especially land. The shelter is likely to be built after the family is living in it. They have certain specific location needs: cheap transportation (which can substitute though frequently inconveniently for location near work for the regularly employed), schools for children, churches, and shopping and similar facilities. Where urban services--water, electricity, sanitation, and so forth--mean increased cost of land, a community facility is likely to be preferred over direct connections to a house.

The location features needed by the middle class--the professionals and other securely employed white-collar workers (or equivalent)--, on the other hand, are identical with those of the middle classes in other countries. Location near work is not important, so long as there is access to some type of transportation facilities and to schools (good schools), shopping and other facilities. At

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[28]"A New View of the Housing Deficit," loc.cit., p. 40.

higher levels of white-collar occupations, location with respect to quality of neighborhood is highly important, but being close to facilities such as schools and the like is not sought, since ownership of private automobiles provides access to a number of location facilities.[29] This latter group is, of course, usually well supplied with housing through the private market.

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[29] John C. Turner, "Uncontrolled Urban Settlement: Problems and Policies," International Social Development Review, No. 1 (New York: United Nations, 1968), pp. 107-130.

Human values in housing

It has been demonstrated by a number of research studies, first, that families tend to improve their housing situations at a favorable juncture of income and needs, and, second, that deficiencies in the dwelling unit seem to be a major motivating force toward that end.[30] There is also evidence that the new or improved residence frequently has deficiencies that become apparent after occupancy or after some previous need has been filled. This situation results from compromises made by families, from design of the housing or its location, and from changes in attitudes and aspirations of the occupants.

Interest in finding some basic and reasonably durable measure of what families look for in housing (used in this context to include location) led to the formulation of the Cornell study of human values in housing. While it was difficult to define a value, the pilot study formulated the following:

> Values are based on the totality of a number of factors, such as an individual's ideals, motives, attitudes, and tastes, which are determined by his cultural background, education, habits and experiences. Values are not hastily formed and, therefore, will not be hastily changed. An individual's values set the standard for the way he wants to live, and they are fundamental, as his more superficial preferences are not.[31]

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[30] Residential improvement through mobility is a major theme of Housing Choices and Housing Constraints, op. cit.

[31] Houses are for People, op. cit., p. 49.

Nine values were selected for study in relation to housing, out of twenty considered. The nine values are family centrism, equality, physical health, economy, freedom, aesthetics, prestige, mental health, and leisure. They were combined into four mutually exclusive value groups in the pilot study: Economy, Family, Personal, and Prestige.

The Economy Value group are families who emphasize economic uses of goods and services, "are likely to base their choices on selling price in relation to quality, and they place special emphasis on price,...are conservative in taste and conventional in habit... are alert to property rights...informality is a social characteristic... they tend to form friendships more frequently" than the other groups. The Family Value group emphasize the health and well-being of the family; they emphasize harmonious family relationships, have more frequent contact with other relatives, and "are alert to influences that might affect the physical and mental well-being of family members." The Personal Value group emphasize personal enjoyment, self-expression, and aesthetics; are "more individualistic than families with the other values, and they have a stronger desire for freedom and independence," and "are motivated by a desire for self-expression rather than by any wish to do what will impress others." The Prestige Value group emphasize social prestige, a formal social life and are upwardly mobile.[32]

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[32] Ibid., pp. 2-6. Detailed statements of methodology are in this reference and also in Housing and Personal Values, op.cit.

The concept of similar values held among different population groups was tested in a study of two urban areas and one rural one. Beyer states:

> With the exception of the results concerning the value of leisure, where there is evidence that the two groups under study had different meanings for this value, the results as reported hereafter are surprisingly similar for the two groups.[33]

Considerably more research on human values in relation to housing is needed using different methodological techniques and different population groups, especially with respect to overlapping of values held by individuals and determining the proportions of the population that are in different value groups.[34]

In view of the lack of knowledge in depth concerning values applicable to housing, it is not proposed that a full-scale study of them be launched in cities of developing countries. Adapting the measures used in the Cornell values study to some housing samples may, however, provide some good indications of what value substantial proportions of the low-income population place on some features of housing and location, especially those about which public agencies are concerned. It is recognized that developing countries, especially in Latin America, are attempting to evolve standards for good housing. Standards, in general, tend to set forth minimum specifications. They usually are for dimensions of space also, and are not related to use of the space. Although

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[33] Housing and Personal Values, op. cit., p. 6.

[34] Houses are for People, op.cit., p. 58.

based on research of space requirements for activities, they seldom recognize the different preferences of families, with the result that some houses are over-designed while others are under-designed.[35] Attention to family values with respect to housing is being recommended because: (1) differences between socio-economic levels may be sharper in developing countries than in industrialized ones, with correspondingly sharp differences in perceptions of housing and location; (2) the assumptions used in designing housing in developed countries cannot safely nor economically be used for low-cost housing in advancing nations; and (3) the low-cost housing being built will represent minimum standard housing intended for relatively long use.

A set of indicators of personal values related to housing space, prestige, aesthetics, and economics were included in the San Juan pilot study to explore their applicability in developing countries. With respect to values placed on space, Prestige, and aesthetics fairly marked differences were found in general, between the lower-middle-class and lower-class neighborhoods on the one hand and the slum and public-housing neighborhoods, on the other. Four out of five families in the lower-middle and lower-class areas felt that a house should have enough space for members of the family to spend their free time together, compared with two thirds of the families in the slums. This finding does not indicate

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[35] Standards and their application in the United States are discussed in Housing and Society, op.cit.

necessarily a low value placed on space by families at lower-income levels--it may mean only that such families are relatively realistic in expressing their values and space is less important than some other needs (as, for example, better quality in the dwelling unit). The lower-middle and lower-class neighborhoods placed considerable value on the prestige aspects of housing; the slum and public-housing families showed considerably less concern about how other people evaluated them on basis of their housing. The better neighborhoods in this respect showed considerable similarity to their counterparts in developed nations. Similar contrasts between the relatively high value placed on aesthetics in the better private housing neighborhoods and in the slums and public housing were found.

Some different trends were observed in respect to the economics of shelter. Perhaps one of the most important value statements included was the one related to whether or not respondents felt they had "to live in a neighborhood where the other houses in the area won't depreciate the value of mine." Nearly two thirds of the lower-middle and lower-class respondents attached importance to this statement, compared with less than half of those in the slum and public-housing neighborhoods. Less concern was expressed by all the groups to the three other questions on economics of housing, with one striking exception: over 70 percent of the lower-class neighborhood respondents attached "much importance" or "very much importance" to the statement "I want a house that I could sell when I want to and make a profit"--an appreciably higher proportion than for the other groups.

Social class identification

There seems to be an awareness of social class found in all societies, even though the awareness does not always imply sharp distinctions between levels. Given an awareness of distinctions between classes explicit or implicit, people frequently tend to identify themselves with one class and to modify behavior in accordance with their perception of the ideals, norms and symbols of that class.

In housing and some other studies which are not full-scale studies of social class, occupation, education, and income are frequently used as objective indices of social class. The first two tend, under normal conditions in developed countries, to be closely correlated with income, and income becomes the principal indicator. The objective indexes, however, do not reflect some finer distinctions, and, especially, do not measure how the people concerned view their class position with respect to that of others. Such finer distinctions may, under some conditions, be important to an analysis of views of the house and location and be of special relevance with respect to the social quality of neighborhoods. The possibility that they are is explored whenever possible.

One subjective indicator to explore the aspect of class identification which have been used in housing studies is the class respondents identify with. Perception of social class in relation to that of neighbors' supplements this and is also a subjective factor in the measurement of attitudes. In general, subjective and objective measures tend to correlate--a person who sees himself as middle class is likely to have the income and education

associated with that class. The correlation may not hold under all conditions of rapid social change in developing countries.

Another measure is a social scale, the upper end of which represents the group who have the "best conditions of life"; the lower end, the group who have the "worst conditions of life." The lowest status may be numbered "0" and the highest "10." In the San Juan pilot study, respondents (husbands only) were shown the scale and asked to place themselves at the point which to them best reflected their "conditions of life" at three points in time: present, five years ago, and future (expected place five years hence). Okraku used the three evaluations of social status in his study of residential mobility among the San Juan sample. Families were placed in one of two statuses: "low status" and "high status" on basis of their self-assigned scores from 0 to 5 and 6 to 10, respectively. Income correlated highly and positively with the subjective measure in Okraku's study. In general, the pattern of relationships between residential mobility and social-class identification were similar to the patterns found between residential mobility and income. The correlations of social class with mobility were, however, "much stronger than those of income," and the inverse relation between status and residential mobility held when tenure was controlled.[36]

Attitudes toward home ownership

The assumption is made, in the following discussion, that attitudes toward home ownership have as much or even greater significance for

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[36] "Residential Mobility Intentions and the Family Life Cycle," op. cit. pp. 160-161. See also Melvin M. Tumin and Arnold Feldman, Social Class and Social Change in Puerto Rico, Princeton, N.J.: Princeton University Press, 1961, Chapter 9.

housing programs in a developing country than they have had in the United States. Home ownership may well be the key point at which family objectives diverge completely from those of public agencies. It has been pointed out that, in the United States, public housing has had it most successful acceptance in large metropolitan areas where rental housing is the predominating type. More is involved in the issue of owner-occupied housing, however, than a preference for owning over renting. The prospective homeowner has to be prepared, and willing, to make a substantial commitment to housing, initially at least, and to assume a different set of risks from those of renters.

An analysis of attitudes toward home ownership would seem to require a framework that will take into account the attitudes of three, and possibly, four groups: present owners who desire to own, present renters who desire to own, and present renters who desire to rent. The fourth group is, of course, owners who do not desire to own. The latter group is likely to be small, but there is some evidence of its existence. In the United States, for example, young families forced to buy because the housing and location features desired were possible only in houses built for owner-occupany and older families trapped in deteriorating neighborhoods who would like to sell. Turner has suggested some examples that are of greater significance in developing countries: the premature acquisition of a modern dwelling unit beyond the family's means and unrelated to its current needs or the insecurity of tenure induced by enforced assumption of expensive urban services before

the family can afford them.[37]

Insofar as possible, attitudes toward ownership of the home should be separated from attitudes toward the concomitants of home ownership, such as detached, single-family dwelling units on individual lots, security of tenure, or economic security of the family unit.

It is also probable that the strength of the intention to become homeowners on the part of present renters should be explored. Indicators of this would be intention to own within a specific time period; home ownership preferred over other alternatives for spending, and so forth. Rossi has pointed out the importance of the family's housing philosophy, which is likely to change over time:

> A household's housing philosophy also plays an important role. This study only considered tenure preference as an index of housing philosophy. Obviously this variable can be elaborated further: households vary according to the way in which they view the function of housing; they differ in the extent to which they are willing to compromise other needs to satisfy their housing desires.[38]

Rossi also reports that the attitude toward home ownership explained much of the mobility inclinations of renter families, while owner families rarely wanted to move and even when dissatisfied were reluctant to. In fact, even the homeowners with high "mobility potential" (young, expanding families, and so forth) had to be very

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[37]John C. Turner, "The Squatter Settlement: Architecture that Works," Architectural Design, Vol. 38, No. 8 (August 1968); "The Barriada Movement," Progressive Architecture, Vol. 49 (May, 1968) p. 158.

[38]Peter H. Rossi, Why Families Move, op.cit., p. 97.

much dissatisfied with their dwelling units before moving was considered.[39]

Other indicators of strength of an attitude favoring home ownership are how the present owners financed their homes: paid cash, amount of down payments from accumulated savings, type of mortgage assumed and length of term. Preferences for methods of payment are important. There may, at some levels of low income, be a preference for paying in cash, or for self-building as income permits.

The effect of the amount of monthly payment on the decision to buy is useful information. Coons and Glaze found this factor to be important in assuming home ownership:

> Considerable evidence indicated that monthly payments are the primary concern of home owners in purchasing a home. The monthly payment appeared to be the demand price for a majority of the home owners in the sample.[40]

As indicated earlier, observation and study of housing situations in Peru had led Turner to conclude that security--of residence and economic security--is probably the predominant reason for some low-income groups to seek home ownership. However, Turner believes that regular monthly payments may often burden a family which cannot count on a steady monthly income. Therefore, traditional mortgages, even at subsidized terms, are often avoided.

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[39] Ibid., pp. 70, 89, 96.

[40] Alvin E. Coons and Bert T. Glaze, Housing Market Analysis and the Growth of Nonfarm Home Ownership, Columbus, Ohio: The Ohio State University, College of Commerce and Administration, 1963, p. 136.

The theme of security also runs through studies of home ownership in the United States. Branch, for example, in a study of renters' attitudes towards owning, found that security was the most frequent reason given for the desire to own.[41] Coons and Glaze found the "freedom" of ownership, certainty and security of residence, saving and building up equity, pride of ownership, and independence to be the most frequently cited reasons for having become owners. Security of residence was the first most important, and saving and building up equity the second.

> These two reasons were cited twice as frequently as any other single reason listed in the table and many times more than most of the other reasons listed. Such justifications as freedoms of ownership, pride of ownership, and independence, which were reported in such large numbers in the previous table, recede into the background...as the families looked at the more practical side of the question. Their main responses were essentially: we will not have to move and we think this is a way to accumulate a savings.[42]

Other attitudes toward home ownership explored in that study were: whether or not present owners would prefer to continue owning or to rent (only three families presently owning wanted to change to renting). Not all of the owners regarded the present home as permanent; fourteen had no idea how long they would remain; there were, though a minority, several instances where the house or

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[41] Melville Branch, Urban Planning and Public Opinion, Princeton, N.J.: Bureau of Economic Research, 1942, p. 8.

[42] Housing Market Analysis and the Growth of Nonfarm Home Ownership, op.cit., p. 90.

location was expected to be inadequate for expected family needs. Ill health, loss of employment, or job transfer were factors most recognized as likely to make them sell the house. As a group, they showed a strong dislike for renting.

> Only 10 percent approved of renting on economic grounds. Twelve percent suggested that some people may have to rent because their income would not permit ownership. Otherwise, people "should" rent only under special circumstances; when they must be mobile for employment reasons; when you want to avoid the problem of upkeep; if you are too old to take care of the property; childless couples should rent; or rent to accumulate a down payment.[43]

The attitude toward selling the present home and returning to renting was explored.

> Eighty-four respondents said they had not seriously considered dis-investing. Most of the 16 respondents who said they had thought of selling recently were not planning to return to rental tenure. Many of them were wanting to buy another home, or to move for a variety of reasons.[44]

The study also reports that, in general, the sample had only minimum knowledge of costs of ownership or whether or not renting might not be a more economical means of acquiring housing. Eighty-six respondents had used some means of financing, and their attitudes toward financing techniques suggested that:

> The mortgage interest rate, the monthly payment, and the mortgage term concern more home owners than any other feature of the financing plan. Down payment, the reliability of the lender, and pre-payment penalty clauses were next in importance to the owners. The first four factors were viewed

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[43] Ibid., pp. 92-96; quoted material on p. 96.

[44] Ibid., p. 97.

> as important aspects of financing because of their influence on the monthly payment and aggregate interest cost of ownership.[45]

The Coons and Glaze study was not designed to test social and prestige motives in home ownership. Among the reasons cited by their sample for becoming and remaining homeowners, the authors state: "the commonly assumed pure status symbolism of home ownership did not emerge as a primary force in the home ownership decision."[46]

Although a change to home ownership may not be under all circumstances an improvement in the overall situation of the family, the consensus from empirical evidence is that the large majority of families view it as an improvement in their housing situation. First-time owners may be an important group. Comparing consumption patterns of a group in the United States who shifted from rental tenure to home ownership, Winnick found that those who changed from renting to owning "spent more on total consumption...; they spent substantially more on current housing expenses, home operation, and furniture and equipment but less on food, clothing, recreation and almost all other goods and services." He viewed the "shift from renting to owning" as "an index of the desire to improve housing standards" and interpreted it as "a willingness to increase housing burdens...from a range of 12 to 16 percent to a range of 20 to 22 percent." Such a group he points out has important

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[45] Ibid., pp. 131-132.

[46] Ibid., p. 85.

implications for improving housing standards, along with other benefits to housing.[47]

Urban home ownership in developing countries has different implications by location of the owner-occupied house. Specifically, home ownership in the slums has some of the characteristics of rental housing in that it usually means shelter at lowest cost and, depending on the land situation, insecurity of tenure. Homeowners in the slums may be in a more favorable situation than renters, if their house was self-built or is fully paid for (as it most probably is), in that their shelter cost is practically zero. Under some conditions, equity can be built up and, when the house is sold, the owner has savings which can be spent on a better house. Or, frequently, the house in the slums may be retained even after the owner moves out and becomes a source of income. Such a situation may take place in neighborhoods that are deteriorating, and possibly operate to hasten the process.

The desire for home ownership was explored only indirectly in the San Juan sample, using as measures preference for living in single or multifamily units and living in same building as neighbors. Over four fifths of the respondents in all the neighborhood areas preferred to own, at least to the extent of living in a single-family dwelling unit. Back exploring attitudes toward government help with housing, found that:

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[47]Louis Winnick, "The Housing Consumer in 1950," in Housing Choices and Housing Constraints, op.cit., pp. 65-67.

> With the one exception, to improve economic conditions, the suggestions were for various forms of subsidy for buying privately-owned houses.[48]

Attitudes toward public housing and other government aid to housing.

Public housing as a major solution to the problem of housing low-income urban families has received considerable attention in housing studies. In the United States, much of the research has focused on the all-important question of whether families respond to the improved environment provided in public housing. The results to date have been somewhat inconclusive as to the effects of improved housing as expressed in public housing, on family attitudes and on family life.[49]

A second focus has been on the stress associated with relocation of families as part of slum clearance projects; the resistance encountered to moving from the slum areas, resolved sometimes by later acceptance of the idea and sometimes by total rejection (and a move to some other area closely resembling the one left).[50]

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[48] Kurt W. Back, Slums, Projects, and People, Durham, N.C., Duke University Press, 1962, p. 64.

[49] See Alvin L. Schorr, Slums and Social Insecurity, op.cit., for a critical review of the literature; Daniel J. Wilner, et.al., The Housing Environment and Family Life, Baltimore, Md.: The John Hopkins Press, 1962.

[50] Slums, Projects and People, op.cit.

In developing countries, similar resistance to relocation in public housing from slum areas has been reported. There is little question but that public housing is superior housing in external and internal features and in environmental quality in general. It is also, quite often, less costly than rent for private housing in some slum areas. Yet the situation as analyzed by Hollingshead and Rogoff for San Juan seems to be typical:

> The reactions of slum families to their physical and human environments are sharply different from the reactions of families in public housing apartments to their neighborhoods. Most slum dwellers like their neighborhoods; most dwellers in public housing dislike theirs. This finding poses a dilemma for social planners.
>
> The slums have grown up naturally. They are overcrowded, malodorous, noisy, unsanitary, and under condemnation by "enlightened" segments of the society. Yet, their inhabitants are fonder of them than caserio dwellers are of their neighborhoods.
>
> The caserios are a product of the planner's design. The buildings are architecturally sound, and the apartments are dry and larger than the slum homes. Modern plumbing electricity, and other conveniences are provided. Caserios are organized as community centers. Yet the people in our study who live in them do not like them. They look forward to the time when they can escape both the bureaucratic apparatus of the caserio and the tensions between families, which this apparatus creates. The rules of the caserios are imposed by a bureaucracy with a different set of subcultural values and norms from those who are expected to abide by them. Caserios rules stem from middle-class, professional values. These values are not part of the class culture of the people who are expected to abide by them.[51]

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[51] A. B. Hollingshead and L. H. Rogler, "Attitudes toward Slums and Public Housing in Puerto Rico," in Leonard J. Duhl, The Urban Condition, New York: Basic Books, Inc., 1963, pp. 243-244.

Attitudes toward public housing are an essential part of housing studies among low-income urban populations in developing countries. Topics of major concern include whether the idea of public housing as well as the move to public housing is rejected (even by those who accept relocation); why, in view of dissatisfaction with housing and a strong intention to move in slum areas, public housing is not acceptable as an economical way of improving poor housing situation; whether attitudes are based on knowledge; whether it is the idea of public housing that is being rejected or only some of its manifestations (methods of selection, rules and regulations, and so forth); and how public housing is viewed in terms of personal life situations by large proportions of a low-income population.

Attitudes toward public housing, therefore, may be examined by means of cognitive, affective, and evaluative measures: what is known about them, what is felt about them, and how respondents evaluate them in terms of their own housing experience. In the San Juan pilot study, data on these points were collected from both husbands and wives, since different aspects of public housing could be expected to have different influences on their attitudes.

The cognitive measures include all aspects of public housing likely to be a source of acceptance or rejection. Back who has provided a comprehensive framework for the analysis of attitudes and actions with respect to families involved in a relocation process, tapped five aspects to test how well informed families were about public-housing projects. These are: how tenants are

selected, whether rent is raised if large and expensive durable goods are purchased, restriction on tenants, facilities provided, and amount of rent. Sources of information about public housing are used as indicators of willingness (or unwillingness) to accept misinformation and be influenced by it.

Attitudes toward (that is, the affective aspects) and evaluation of public housing were examined in relation to the conception of the idea of public housing and in relation to willingness to move into a project.

The measure of a general attitude toward public housing is whether or not public housing is a good idea, and reasons for the opinion (open-end). The evaluative aspect of the idea of public housing is what alternative solutions, if any, respondents would recommend, and how the respondent defines a slum area.

Back's conclusions, based on an analysis of the relationship between personality traits of respondents in several stages of the relocation process and objective conditions are:

> Looking at the conditions, we find the two different kinds of housing conditions which involve certain differences in style of life. Looking at the people, we find those who are driven by the conditions, and those who try to make decisions about the type of life which they want to lead. In combining these classifications we can distinguish four types. The first are passive people who are in no position to change, for instance, because their site is not being improved, or because they are ineligible. These will be the problem cases in the slum areas. The second are the passive people who were relocated: they are the ones who need guidance and relief in the projects. Third, there are people who choose not to live in housing projects: they try to establish the life they want in their own way. And,

> finally, we come to the people who choose to move into housing projects: they will want to use their residence in housing projects as a vehicle for further change. People assign themselves to one of these types on the bases of their whole stance toward life.[52]

With respect to sources of information, Back found that a large proportion of all groups at different stages knew or had visited friends living in projects, and that most of those still living in the slums obtained their information about projects from friends and relatives. There was little extensive information about how project tenants were selected (62 percent of those still in the slums did not know and also about one-fifth of those living in the projects) and much more confusion about the basis for rents. The majority of all those outside the projects believed that rent would be increased if some large purchase were made, and this belief was held, to a lesser extent, by project tenants as well. The majority of the total sample thought public housing a good idea, though the proportion who thought so in the slum areas was lower.

Less than half of those living in the slums thought that they were living in one. Back states:

> Here we may have the reason why some of the people object to the program of building housing projects. If they do not consider that they live in slums, then to move people into housing projects is an imposition. (On the other hand)...It would seem that people who accept the fact that they live in slums also find some positive value in this life. The person who says that he lives in a slum has identified as a slum dweller and may accept this as a

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[52] Slums, Projects, and People, op.cit., p. 106.

> permanent trait which should not be taken away from him. The person who just has substandard housing conditions but does not accept the name of slum for his home may be more likely to accept the proffered government aid.[53]

Suitable alternatives to public housing that appealed most to the sample, including project tenants were, in order of importance: build houses and sell on installments, give loans and let people get houses, improve economic conditions, and give land.

> The most popular was that the government build houses and sell them on installments. This system, which is probably the most realistic, was especially popular in the housing projects, while a rather wishful thought, to give away land, was more popular among the slum residents. No project tenant proposed that economic conditions be merely improved and in this group we also find the greatest number who cannot think of any alternative plan. These tenants would seem to be relatively satisfied with the present arrangements if they could buy a place of their own, and they have thought seriously about this. There is, however, an important reservation. Ninety percent in all the groups would prefer their own solutions to a housing project.[54]

Although the analytic framework is quite different from Back's, the San Juan findings are similar. The residents in the lower-middle-class neighborhood had, as expected, little interest in a move to a housing project, and only one fifth of those in the lower-class neighborhood and about one third of those in the slum areas showed such an interest. The lower-middle-class neighborhood people would move to a project if they encountered poor economic circumstances,

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[53] Ibid, pp. 66-67. Preceding material from pp. 87 ff, 64.

[54] Ibid., pp. 64-65.

the lower-class neighborhood residents would move for that reason but also would move only if nothing else were available, and some would not make the move under any circumstances. In the slum areas, 60 percent would move to a housing project only if nothing else were available; some (18 percent) would move if their economic circumstances became worse, and the same proportion would not move to a project for any reason at all.

The majority of the San Juan sample thought that building housing projects was a good idea--for other people to live in. Their preferred alternatives indicated a strong desire for assistance in acquiring a dwelling or land on which to build.

The San Juan findings are all the more interesting because most of those living in the projects liked their apartments very much, although there was some dissatisfaction with the inside space. About a third were dissatisfied with the number of bedrooms, and another two fifths were only moderately satisfied with them. However, only one third of the project residents wanted to stay in their present neighborhood because they liked the apartments. More importantly, over four fifths of these respondents (the same as in the other neighborhood areas) wanted to live in a "separate dwelling unit."

In view of the findings of the above two studies, it seems reasonable to assume that there is a sizable proportion of families now living in slum areas or other types of substandard housing who

would strongly prefer a form of government aid different from public housing. Since the basic difference between public housing and other major forms of public aid so far proposed is that the latter tend to encourage owner-occupancy, attitudes toward specific types of solutions are discussed under "Attitudes toward Home Ownership." It is felt that the measures discussed in these two sections can readily be adapted to explore the concepts underlying other types of housing aid.

Intra-urban (Residential) Mobility

The principal means by which families improve housing on their own have been through changing their place of residence (intra-urban moves), and/or the improvement of owner-occupied homes.[55]

Intra-urban moves and inter-urban or rural-to-urban moves are frequently discussed together because all of them involve population movement. However, their motivations and their implications for housing and metropolitan areas in general are quite different in developed countries and more so in developing ones. On the basis of research and theory, intra-urban moves, in general, may be classified as housing-related. Inter-urban and rural-to-urban moves most frequently are job-related or determined by economic considerations. In developing countries in particular (though by no means exclusively) much more is involved in these latter two types than change of residence.

Intra-urban, or "short-distance," moves are considered to be attempts to adjust housing to housing needs and have implications for estimates of housing demand and the pattern of metropolitan growth. Intra-urban moves reflect consumer attitudes only when undertaken voluntarily.[56] Reasons for moving are part of the information

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[55]Rental housing is improved by landlords or by public housing or some outside agency. Impelling reasons for renter families to agitate for improving rental housing will be brought out as reasons for staying. Moves to improve rented housing are, of course, intra-urban moves.

[56]See Janet Abu-Lughod and Mary Mix Foley, "The Consumer Votes by Moving," in Nelson N. Foote, et. al., Housing Choices and Housing Constraints, op.cit., Chapter 6.

required, and probably their first use is to distinguish involuntary moves from voluntary ones. Reasons for involuntary moves include loss of previous dwelling unit, change of location or place of work, or new household formation.

The latter two situations are sometimes difficult to distinguish from voluntary moves. It is possible that a residential move might be followed or preceded by a change of jobs. In the rapidly growing metropolitan areas of developing countries, for instance, this situation might arise if satellite communities near a city offered jobs as well as residential opportunities.

Measures of intra-urban mobility that have been developed are related to two aspects of residence change: past mobility (number of moves actually made within city within a specified time period, usually five years); and prospective mobility, that is, desire to move, intention to move within a relatively short time span, and intention to move within a longer time span. The San Juan pilot study included all four measures as follows: Number of moves made in the last five years; desire to move, intention (possible, impossible, or certain) to move within one year, and intention to move within the next five years. The five-year interval is used in order to avoid as much as possible errors of reporting because of difficulty in recalling a number of moves over a longer period. Intention to move is obviously stronger and the move is more likely to occur if it is planned for the immediately upcoming year than for a less definite period.

It can be seen that each of these measures serves a somewhat

different purpose from the others and that each has some limitations. Past mobility, particularly where the sample includes a large proportion of young households, does not of itself distinguish between new household formation and voluntary moves after marriage. Perhaps more important in a sample survey is the difficulty of relating past mobility to family characteristics at the time of moving.

Prospective mobility and measures of it have had varied use in studies of residential change. Rossi used two, desire to move and intention to move within one year, and stressed the relationship between the two measures.[57] Leslie and Richardson and Butler et al. used intention to move within one year as the only measure of mobility.[58]

Other researchers have utilized measures of past mobility and both desires and plans for prospective mobility in a study of relationship between the two types of measures.[59] Abu-Lughod and Foley used an index of mobility and were concerned primarily with past mobility.[60]

Of the three measures of prospective mobility, desire to move permits exploration of motivation for all who desire to move without necessarily taking into account their ability or actual intention to carry out their wishes. Intention to move within one year indicates plans to act on a desire to move and implies both the desire and the

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[57] Why Families Move, op.cit.

[58] Cited in Okraku, op.cit.

[59] Ibid., p. 34, fn.

[60] Housing Choices and Housing Constraints, op.cit., Chapter 6.

ability to carry it out. The latter consideration is likely to eliminate the families who may want to move but cannot do so and possibly to include a large proportion of involuntary movers being forced out by some external circumstance. Intention to move within a longer time span brings into consideration the families who will translate a desire to move into the act of moving, depending on future events.

Desire to move and even intention to move do not always mean, of course, that a move will be made. The validity of desire and intention as measures has been checked by Rossi and others, however, and it was found that desire and intention resulted in a move in a large proportion of cases.[61] External conditions may intervene, as, for example, a rapid rise in costs of single-family homes or distortions in rental costs for better or newer apartments between new and old dwelling units.[62] Grigsby points out that rise in income, changes in family size, or disintegration of neighborhood may motivate families to look for another place to live but at different levels of intensity. The decision to buy or rent another residence for this group is made only if an acceptable alternative to the present residence is found, and consequently, they do not always move. Another, though probably small, group may move, though they do not express a desire or intention to

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[61] Peter H. Rossi, op.cit., pp. 112-113.

[62] Housing Choices and Housing Constraints, op.cit., Chapter 6.

move, in response to the "positive attraction" of a dwelling unit that meets their ideal specifications.[63]

Those who have changed residences within the time period are not always necessarily satisfied with the change achieved. Abu-Lughod and Foley state that dissatisfaction with space in the present dwelling unit is often expressed by the recent movers, who are more dissatisfied with number of bedrooms than with floor space or number of rooms.[64] Recent movers, therefore, may be an important subcategory in the analysis. Recent movers (owners and renters) also may provide some clues to the range of housing choices open to different strata in the low-income group and effects of objective conditions.

Some additional measures in mobility analysis include those discussed in other sections: how the present dwelling unit compares with the previous dwelling unit; who decided on the move (husband, wife, other relative, or friend), presence of relatives or friends near present dwelling unit; what respondents were looking for in a house or neighborhood when they moved; how they found the present unit; whether the house or neighborhood was more important in the choice; where they would like to move to; location of previous residence; whether or not they considered alternative dwelling units, and the alternatives. In connection with the last measure, Grigsby argues that a metropolitan housing market is made up of a number of

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[63] William G. Grigsby, Housing Markets and Public Policy, Philadelphia, Pa.: University of Pennsylvania Press, 1963, p. 188.

[64] Housing Choices and Housing Constraints, op.cit., pp. 229-230.

submarkets characterized by different kinds of housing. The submarkets are "to some extent insulated from one another because different types of families are in the various markets...."[65] The measure provides some clues as to what particular "submarkets" families assign themselves in looking for another residence.

Number of moves made in the selected period and number of years in the present house are also two indicators of residential mobility. Neither measure, of course, defines the type of mobility as between inter-urban, rural-to-urban, or intra-urban.

Direct measures of causes of prospective mobility (desire and intention to move) are sources of satisfaction and dissatisfaction with the present dwelling unit (internal and external characteristics) and location features. The interrelationship of these factors with family characteristics has been indicated in earlier sections, but without considering the implications for moving or otherwise improving housing.

Characteristics of intra-urban movers in the United States have been determined largely on basis of Census Bureau material, in which inter-urban and rural-to-urban moves have not always been kept separate from intra-urban ones. In the main, however, the findings have been supported by sample surveys that included past mobility and by studies of prospective mobility. They are set forth in detail here in order to show similarities and differences in comparison with characteristics of the mobile families shown in Okraku's study of intra-urban mobility in the San Juan sample.

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[65] Housing Markets and Public Policy, op.cit., p. 47.

The principal difference between those who move and those who remain are well known:

> Renters move more than owners; usually, renters are younger, live in multifamily dwelling units; are motivated by a desire for home ownership; and it is easier for them to move.

Movers are likely to be younger than nonmovers, have lower incomes, and more education.[66]

Among intra-community moves, over 60 percent were motivated by housing-related reasons. Principal sources of discontent, in order of importance, were: not enough space, undesirable social characteristics of the neighborhood, unsatisfactory physical characteristics of the neighborhood, cost of housing in the neighborhood too high. Secondary sources of dissatisfaction were poor design or layout of the dwelling unit, difficulties with landlords, and household tensions or the like. Young families in the expanding life-cycle stages were the most mobile group, and inadequate space in previous dwelling unit was the most compelling reason. Young families are also characterized by job instability--likely to make more changes in employment in early stages than in later ones. Satisfaction with the present neighborhood, compared with dissatisfaction with the previous one, indicated that social characteristics of the neighborhood was the second most important reason for making the change. Abu-Lughod and Foley point out that most studies indicate a high degree of neighborhood satisfaction and the chief reason for it is the characteristics of neighbors when they are "kind",

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[66] Housing Choices and Housing Constraints, op.cit., pp.139-152.

friendly, neighborly." Dissatisfaction is expressed when neighbors are "uneducated, low class, or different." Higher socioeconomic levels were more likely to be satisfied with their neighbors, a reflection of their ability to select neighborhoods of good quality. A good neighborhood location is rarely preferred over a good dwelling unit. and families are seldom motivated to move merely to change location, as evidenced by the high proportion of moves within the same neighborhood. Dissatisfaction with the physical environment usually had to be accompanied by other dissatisfactions to motivate the move. The exception to this was the second-time buyer, for whom location is slightly more important.[67]

Grigsby argues that change of residence, even within same neighborhood, will not take place unless families and homeowners especially perceive some distinct advantage in moving; that is, even a drop in price for an identical house in or near the same neighborhood will not cause a homeowner to move unless the other house differs sufficiently from his previous residence to be a good substitute for it by eliminating his present dissatisfactions.[68]

Journey to work as a factor has been of declining importance. One conclusion from a study on residential location in relation to journey to work is as follows:

> The evidence strongly suggests that workers tend to choose their homes, insofar as possible, primarily for the kind of off-the-job life they want for themselves and their children. The inconvenience and cost of commuting seem to be secondary

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[67] Ibid., pp. 181-183.

[68] Housing Markets and Public Policy, op.cit., pp. 40-43.

> considerations, except when commuting proves to be extremely time-consuming and expensive, to result in too much time lost on the job. An attachment to desirable homes...is likely to be stronger than an attachment to particular jobs, when these jobs are within reasonable commuting distance... But this study indicates that, if the choice is between staying in a desirable house as against moving to take a more desirable job, only a quarter of the workers surveyed who owned their homes would refuse to move and over half said they would move.[69]

The most significant intra-urban population movement in the United States in the twentieth century has been, of course, the movement into suburban areas. Social characteristics of neighbors, while still important, and inadequacy of dwelling unit were overshadowed in the suburban moves by motives for home ownership and amenities of the location, such as better environment for children, gardens (for some, part-time farming as an avocation and income supplement), and lower housing costs--land and taxes in suburban locations tended to be lower and so also were rents. The distance moved at any one time, however, was usually relatively short. Moves tended to be to different sections of the same neighborhoods or to neighborhoods fairly close by. Even the move to the suburbs was most often taken a step at a time. Many also were moving closer to rather than farther away from places of employment.[70]

In the San Juan sample, Okraku found high mobility, with the lower-middle-class neighborhood lowest on any measure of mobility. The lower-class and public-housing neighborhood respondents evinced the same amount of desire to move, but the slum neighborhood people were the ones who

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[69] Leonard P. Adams and Thomas W. Mackesey, Commuting Patterns of Industrial Workers, Ithaca, N.Y.: Cornell Univeraity, Housing Research Center, 1955, pp. 66-67.

[70] Housing Choices and Housing Constraints, op.cit., Chapter 6.

showed the strongest intention of moving within the next one or five years. Involuntary moves accounted for 9 percent of the sample but for 25 percent of those in the slum areas. The tendency toward male dominance in the decision to move was highest in the lower-class neighborhood, followed by the slum and lower-middle-class neighborhoods, and was lowest in public-housing projects. Only 25 percent of the sample had moved to be near relatives, more of those in the lower-middle-class neighborhoods than in others; the relatives in most cases being parents. Friends were the main source of help in finding the present dwelling unit in all the neighborhoods. Relatives and newspapers also helped those in the lower-middle-class neighborhood to find the present house, while previous visits to the area were second important sources of information in the slum neighborhoods.

Residential mobility among those who had moved was mainly short distance and involved change of house but not of neighborhood. Where neighborhood had been changed, the direction was upward and the distance again short--a move to the lower-middle-class neighborhood was made from a lower-class neighborhood and a move to a lower-class neighborhood had been made from a slum area. Among those who desired to move, the choice of a possible future residential area showed a similar upward trend. Prospective movers in the lower-middle-class neighborhood, for example, showed a preference for either another suburban residence or a better neighborhood within San Juan proper.

In examining past mobility and prospective mobility by age, the most mobile group (had lived in the highest number of houses within the past

five years and the lowest number of years in the present house) were the younger families (under age 35). More younger than older families also expected to move within one year. Younger families in each housing area desired to move more than older, except in the lower-class area, where the age group 35-49 years showed the highest desire. There was less difference by housing area between young and old, the difference being sharpest in the two better private housing neighborhoods and least in the slum and public-housing areas. Job instability (number of jobs held in the last five years), rental tenure, and expanding stage in the family life cycle accounted for much of the past mobility of younger families. The difference in mobility between older families and younger ones resulted mainly from the lesser mobility customarily found among homeowners. However, homeowners in the sample were also older, and, in general, age had more effect on mobility than ownership had. Slightly over half of those who desired to move expected to do so. Desire and expectation matched, as expected, best in the lower-middle-class neighborhood, least in public housing; best among high-income families (that is, $2,500 a year and over) and those between ages 35 and 49.

A question frequently asked but difficult to answer is whether homeownership makes people stable or whether stable people tend to become homeowners. Using length of time in present residence as the indicator of stability and number of moves made since birth,[71] and controlling for the effect of age, Okraku compared first-time owners (those who were

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[71] Data on this point was collected for the analysis of urban in-migration in the sample.

previously renters) with those who remained renters. The findings tended to confirm the hypothesis that the least mobile people were likely to become homeowners: renters who became homeowners on the latest reported move were much less inclined to move again and, at ages 35 and older, had previously lived in fewer places than had those who remained renters. There was no difference between groups on number of places lived in since birth for those younger than age 35.[72]

Examining past mobility and prospective mobility by place of birth, Okraku found the highest mobility among those who had been born in San Juan, on measures of past mobility and in expectation of moving within one or five years. The desire to move was strongest among the rural in-migrants. Those born in San Juan and the rural in-migrants, Okraku found, had similar characteristics: under age 35, in the expanding life-cycle stage, renting, and living in slums or public housing. Migrants from other urban areas tended to be over age 50 and in the nonexpanding stages of the family life cycle.

The effect of social mobility on residential mobility has received considerable attention in studies, with conflicting results. It was first associated with in-migrants, then considered to have two quite dissimilar effects. Bell concluded that a greater emphasis on family life rather than on career or higher status led to the move to the suburbs of high residential quality. Leslie and Richardson, classifying families by their potential for upward mobility, found a high correlation

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[72]All data cited on residential mobility of the San Juan sample are from "Residential Mobility Intentions and the Family Life Cycle," op.cit.

(positive) between social and residential mobility. Their findings were not confirmed by a later study.

The studies cited were made in the United States. It is now considered that, in this country, high levels of wealth have diminished the importance of social mobility as a factor in residential mobility. If the explanation is a reliable interpretation of the lack of correlation between social and residential mobility in the United States studies, social mobility should show an effect in developing countries, where only a minority as yet have the characteristics of upward social mobility.

It is clear from the examples cited that two different conceptions of how to measure social mobility have been developed. One is by the value placed on social mobility in the sample; the other is by actual experience or experienced change in social mobility.

For the San Juan data, Okraku used income mobility (direction of change in income over the past five years and expected direction of change in income within the next five years), together with the scale of social-class identification discussed earlier to measure the effects of social mobility on change of residence. Of those who had been upwardly mobile in income, more had moved and more desired to move, and more planned to move in each neighborhood area. Those who expected to be upwardly mobile in income showed the same association and more strongly, particularly in expectation of moving within the next five years. Mobility expectations were higher with expectations of higher incomes in each area below the lower-middle-class neighborhood and expected higher income had more influence on expected residential mobility in

those three neighborhoods. Those who expected to be upwardly mobile in income were young or under age 50, tended to be renting and were in the expanding stage of the family life cycle. Those who expected their incomes to remain stable or turn downward were age 50 and over, homeowners, and in the nonexpanding stages of the family life cycle. Those who had classified themselves as currently "low status" on the social-class identification scale had higher expectations of mobility than those who considered themselves of high status. However, the relation between social mobility and residential mobility held in most cases when age, tenure, life cycle stage, and low socioeconomic status were controlled: those who expected upward mobility in income had a stronger desire to move. The exceptions were young families and those in the expanding stage of the family life cycle, which supports the theory that upward social mobility tends to be an effective influence on residential mobility in the later stages of the family cycle.

Measures of satisfaction with the internal feature of space and external features of structure showed an inverse relation to mobility--the higher the satisfaction, the less the desire to move--but families showed a stronger desire to move when dissatisfied with the number of bedrooms than when dissatisfied with the structure. There was not much difference between the measures on intention to move within one or five years. Neighborhood satisfaction showed the same relationship, and desire to move increased with the degree of dislike and so did expectation of moving within one or five years.

Examining house and neighborhood complaints in the light of family

characteristics demonstrated that the groups most predisposed to move were also those most likely to complain. For example, the families most dissatisfied with house structure lived in rented slum dwellings of poor quality. Those most dissatisfied with house space and neighborhood features were under age 49, had low incomes, and lived in the slums or public housing.

To determine effects of satisfaction with structure alone on desire to move, neighborhood type, tenure, and quality of structure were held constant and it was shown that those least satisfied with their house structures were also the ones who lived in poor quality housing.

The effect of satisfaction with space on desire to move was highly correlated with factors that influenced mobility (income, age, area, expanding life-cycle stage, tenure) but also exerted an influence on mobility independently of these.

High neighborhood satisfaction was associated with less desire to move regardless of neighborhood area, income, age, stage in life cycle, or tenure. Neighborhood satisfaction operated to decrease mobility among the nonmobile groups (homeowners and nonexpanding family cycle) but concern with neighborhood exercised a stronger influence in the life cycle stages where family pressures were not operating. Neighborhoods in San Juan were satisfactory when they were quiet, health, clean, safe, and "nice neighbors." Neighborhoods were more satisfactory in the lower-middle-class and public-housing areas and less satisfactory in the slums and lower-class areas.

Among reasons for moving (those who had moved), housing reasons

were most frequently cited because of the importance of respondents in public housing.[73] There was a large proportion of involuntary moves among the total group--most important in the lower-class neighborhood. Among the voluntary movers, economic reasons were the most important for the lower-middle-class area, just as important for the lower-class one, and almost as important for those who had moved in the slum areas. In general, those who were living in good quality houses (lower-middle-class area, owners, high income) cited economic rather than housing reasons.

What those who had moved were looking for in a new home in the San Juan sample were more space and comfort for the total sample. Those in slum areas wanted low cost more than space and comfort, and lower cost was an important second reason for those in the lower-class area. Good quality was the second reason for those in public housing and in the lower-middle-class neighborhood. More space was more important to those in expanding life-cycle stage and low cost more important to those in nonexpanding ones. All income and age groups wanted more space and more comfort, good construction, and low cost. The first was more important to those under age 50 and to higher incomes; the latter, to older families and to low incomes.

Concern with cost was evident among low-income families, especially in the slums but to some extent in the lower-class neighborhood as well.

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[73]One project had opened during the five-year period under consideration.

Both owners and renters want a better neighborhood, as first choice, but owners want bigger and better houses than they have and to live outside the city, while renters place home ownership ahead of the bigger and better house.

Using multiple correlation and other techniques,[74] Okraku assessed the relative importance of the housing quality and satisfaction variables, the family life-cycle variables, and the socioeconomic variables in explaining residential mobility, the proportion of the variation in residential mobility they explained, taken together, and what differences existed among housing areas in the variables that influence mobility. Twenty-one variables were taken into account, including the measures of residential mobility.

The multiple correlation analysis indicated seven variables as most important in explaining residential mobility, with four others having substantial effect. The seven most important, in order of importance, were: neighborhood satisfaction, tenure status, satisfaction with number of bedrooms, quality of house as measured on the quality index, place in life cycle, age, and social mobility. The other four were, in order of importance: status discrepancy, aspiration for bedrooms, household size, and number of jobs held in the last five years.

The variables had different orders of strength on the three measures of prospective mobility. Neighborhood satisfaction, tenure

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[74] See discussion of methodology in the dissertation cited.

status, satisfaction with number of bedrooms, and status discrepancy were most important in the desire to move. House quality, tenure, income, number of jobs held, status discrepancy, satisfaction with house, satisfaction with neighborhood, expected change in income were, in that order, most influential on intention to move within one year. Intention to move within the next five years, on the other hand, was most strongly influenced by age, tenure, and place in life cycle.

The variables were also grouped into clusters to determine their explanatory effect on mobility. Three separate clusters were made up: (1) house quality and satisfaction variables; (2) family life cycle variables, and (3) socioeconomic variables. The last cluster was not as important in predicting mobility as the other two clusters, except in that it was more important than the life cycle cluster when the measure intention to move in one year was used. No one cluster of itself explained residential mobility--much more was explained by combinations of variables from all three clusters. Also, cluster analysis indicated that the measures of mobility differ in their meaning and results of studies will differ depending on the measure of prospective mobility used: whether desire to move, immediate intention, or delayed action.

Cluster analysis explained the prospective mobility of the two better private housing neighborhoods to a greater extent than it did the mobility of the slum and public-housing areas. The reason for this is probably that residential mobility in the latter two areas may be

due to factors other than those which are significant in the other two. For example, cluster analysis on the desire to move by neighborhood area showed the following: In the lower-middle-class neighborhood, where the houses were of good quality, residential mobility was explained by the family life-cycle and socioeconomic clusters of variables. In the lower-class neighborhood, where quality of houses was somewhat lower, the housing and life-cycle clusters were the explanatory variables. For the slum areas, the housing quality variables explained the strong desire to move, while for public housing, socioeconomic variables were the most important.

Analysis of mobility has another dimension as well as to identify the groups likely to need housing improvement and to seek to obtain it by changing residences. Grigsby has pointed out that too little is known about and insufficient attention paid to characteristics of families of similar circumstances who do not move.[75] Involuntary stayers in particular are an important group for housing: those who cite only home ownership as the reason for not moving are one example, but there are many others. Also, mobility analysis distinguishes between those who neither need nor feel the need for improvement and, among the low-income group, those who need housing improvement but have no plans or hope for obtaining it unaided. Reasons for wanting to stay help to pinpoint needy groups also. As reported by Okraku for the overall sample in San Juan, the most important reasons were liking the house and neighborhood, having a comfortable house, home ownership,

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[75] Housing Markets and Public Policy, op.cit., pp. 75, 213.

and simple inertia ("we are accustomed to living here," and so forth). To homeowners, ownership of the home was more important than house or neighborhood characteristics. Renters were staying because they liked the dwelling unit or the neighborhood. There were few differences among the neighborhood areas: liking house and neighborhood were most important to the lower-middle-class and public-housing areas; home ownership to the slums, liking the house, and inertia, all about of equal importance to the slum and lower-class areas, and these latter two were less satisfied with their neighborhoods than the first two.

Improvement of Owner-Occupied Housing

Improvement of housing by owner occupants has received less attention as a means of improving the quality of housing than it has as an aspect of housing cost. Costs of upkeep are, of course, an important part of the cost of ownership, in order to prevent deterioration of the house and possibly blight in the neighborhood. However, in low-cost housing and in developing countries in particular, a willingness to invest in improving housing through assumption of major rehabilitation work is one of the principal means by which the housing stock may be kept or made habitable. It is an indicator of housing improvement among the less mobile homeowners who prefer to stay where they are.

Expenditures on improving the owner-occupied dwelling unit may be classified as of two types. One is major or partial rehabilitation undertaken to improve the livability of the structure. Another is repair and maintenance work that indicates an interest in keeping up the property, whether or not the owner intends to remain. Grigsby states:

> The absence of a long-run interest in the house and neighborhood will usually deter expenditures for alterations and improvements, though it may not adversely affect ordinary upkeep.[76]

Owners may, in fact, be motivated to make more, or at least more visible, repairs if they plan to leave. The concept of housing improvement may also be broadened to include completion of dwelling units where such work is in progress in a housing area.

Plans for improvements are also measures of improvement, since it is possible that even though extensive work, or no work, has been done,

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[76] Ibid., p. 234.

some or further work is planned.

In collection of data on maintenance and improvements, it has to be recognized that the data are liable to substantial error. The principal source of error is from recall, and the extent of error varies by type of expenditure. Relatively small items of maintenance and repair are likely to be overlooked completely or their costs recalled inaccurately. Large expenditures and their costs, as might be expected, are remembered better, but there seems to be a pronounced tendency to include them in a designated reporting period even though they have been made at an earlier time.[77]

Data on costs of alterations and repairs are available in household surveys, and techniques and problems are explored in that literature. The United States Bureau of the Census published quarterly a compilation of homeowners' expenditures on alterations and repairs, in which accuracy of the data is evaluated. In addition, the Bureau of the Census has made a detailed study of response errors and is experimenting with techniques, with the purpose of improving accuracy of the data reported on this item.

In a housing sample survey, the analysis will in most instances focus on the pattern of activity revealed by the data. Although the information on cost should be as accurate and complete as possible

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[77]This summary indicates only some major problems. For a comprehensive analysis, see United States, Bureau of the Census, Response Errors in Collection of Expenditure Data by Household Interviews: An Experimental Study, Technical Paper No. 11, Washington, D. C. : Government Printing Office, 1965. The publication reviews the past literature and compares and analyzes its findings with previously reported ones.

with present techniques, the amount of money spent on alterations and repairs is not as important as it is in, say, household surveys. The major concern is with relatively large-scale improvements and alterations, and repairs and maintenance are considered separately. Important data relate to the type of work undertaken, its scope (that is, how much improvement was effected), how financed, and how accomplished (by self or other). Expenditures on alterations and, frequently, on maintenance differ from the operating and other expenditures that must be paid regularly in that, to a large extent, they are postponable. Large expenditures are infrequently made, but even the more costly upkeep items seldom have to be made immediately. Consequently, undertaking relatively optional expenditures indicates a willing commitment to improving housing. Selection of the reference period, therefore, should be based on these criteria more than on probable length of recall.

It was indicated in the preceding section, as it has been in practically every study of homeownership, that owner-occupants in general and in the low-income group in particular tended to be less mobile than other groups, except as modified by certain family characteristics (especially age), housing characteristics (low quality), or neighborhood characteristics (low environmental quality). Where moving costs are high, this may be a factor, especially at low-income levels, but other considerations have been pointed out by Rossi:

> The difference in behavior shown between renters and owners illustrates the different relationships owners and renters have to the dwelling units they occupy. By and large, a renter's felt dissatisfactions can best be met by obtaining other quarters without the relevant objectionable features.

> Owners, however, are more often able to reduce their complaints by modifying the dwelling itself. Closets can be built, rooms converted, extensions made to the building, etc....Owners can be more flexible in modifying their homes to suit the changes in their needs.[78]

For some proportion of these groups, the "desire for a better living environment frequently finds expression in expenditures for the modernization of their current homes."[79]

Owners who improve their homes, however, are not necessarily those who cannot move out. Many are likely to have strong reasons for wanting to stay and to change the dwelling unit to meet their needs or express their status. The reasons cited in Okraku (and other studies of residential mobility) for homeowners who preferred to remain, for example, imply a high level of satisfaction as a motivation. Where certain conditions of security of tenure are met, Turner believes that a strong desire to improve the currently occupied dwelling unit will be found.

> The degrees of "modernity" of the single-family house types commonly built in Lima today can be observed in the more advanced "barriadas" which present a clear sequence: the "choza", a primitive and temporary shack made from woven cane mats supported on bamboo poles; the "cerco", an enclosing wall surrounding the possessor's lot and within which the household will continue to live in "chozas" while the carcase of the permanent house is being built. Once the carcase of the first stage of the house has been built, however, the family will use it--even if it has a temporary roof.... The final stage, the finished house of the successful squatter settler, is essentially...a perfectly acceptable modern dwelling.[80]

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[78] Why Families Move, op.cit., p. 89.

[79] Housing Markets and Public Policy, op.cit., p. 80.

[80] "A New View of the Housing Deficit," loc.cit., pp. 47-48.

It has been pointed out earlier that a dilapidated structural condition is only one characteristic of poor housing. Deficiencies are not always the result of undermaintenance and dilapidation. Other times houses frequently are considered unfit dwellings on basis of a single characteristic: lack of private or inside bathroom facilities, inadequate original construction, or overcrowding, which may affect standard as well as substandard houses. Dilapidated exteriors also may conceal improvements in quality in the interior: painting, remodeled kitchens and bathrooms, or the addition of sound floors and ceilings. More importantly, dilapidation itself may be evidence of progress: money will not be spent on major improvements where the nature of occupancy is felt to be temporary.[81] Turner has expressed a situation likely to be found in many developing countries:

> There is a great variety of types and qualities of uncontrolled urban settlement--bewildering to those who have been led to suppose that all fall into much the same category. As the diversity of settlement types forbids generalization, it is essential to have some common and meaningful categories for the purposes of comparison and analysis. A simple chart is made by correlating physical state with the direction of change...But--and especially when dealing with settlements in the rapidly urbanizing context--appearances at the lower end of the scale can be quite misleading. Unless the direction of change is also known, it is difficult to assess the real value of a particular settlement. In their initial stages, all three settlements...would have looked much the same to the outside observer; each has demonstrated a very different development trajectory, however, placing each in a distinctly different category.[82]

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[81] Housing Markets and Public Policy, op.cit., pp. 229-232.

[82] John C. Turner, "Uncontrolled Urban Settlement: Problems and Policies," op.cit., p. 108.

Improvements of the owner-occupied house are most likely to be made when there is security of ownership, confidence in the neighborhood, and family circumstances which make the undertaking feasible.

Barriers to self-improvement of houses cited by Grigsby that may be relevant in some developing countries are: low income, age of structure, high (in relation to income) original cost, which leaves no money for improvements or even maintenance, basic deficiencies in the structure or neighborhood, as, for example, inadequate community facilities and services, to such an extent that families would get better return by investing in some other neighborhood, high cost of capital, where money for improvements has to be borrowed (and difficulty of obtaining it), a high rate of rental occupancy in the area (since landlords who do not live in the area tend to let the property deteriorate, at least in poorer quality neighborhoods), little protection for the investment when zoning not enforced, other owners in the neighborhood not likely or unable to improve their property, and the blighting influences of a few unimproved dwelling units.[83]

Different manifestations of the same basic situations may be found in developing countries. Turner cites some features likely to lead to deterioration and a desire to move out of a neighborhood as family circumstances improve: poor original location, as in the path of city growth, with inadequate room for expansion and for building-on

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[83] Housing Markets and Public Policy, op.cit., pp. 232-238.

of the original houses, poor layout originally, resulting in a disorderly and haphazard development, and other similar features.[84]

Under some conditions, neither upkeep nor improvement is advisable, such as those cited by Turner, and families tend to move out, if they are able to, rather than to rehabilitate. Homeowners who are dissatisfied with "the neighborhood's physical aspects or its social composition" also tend to move.[85] In addition, housing improvement alone frequently is not enough; the neighborhood as well has to be improved.

> The necessity for dealing with groups of dwellings is so obvious and so widely recognized that it hardly needs explanation. Every dwelling unit is part of an environment. To bring forth venture capital, mortgage financing, and community leadership for renewal, therefore, the possibility of upgrading the entire environment must be present. Were it not for this fact, substandard housing... could be demolished one building at a time with the complete assurance that new structures would quickly rise on the newly vacant land.[86]

Examples in developing countries, as cited by Turner, include settlements in locations that "damage the city's growth to a greater extent than the cost of removing them," high-density, deteriorating neighborhoods, and, sometimes, relocated settlements too far from employment centers.[87]

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[84] "Uncontrolled Urban Settlement: Problems and Policies," loc.cit.

[85] Why Families Move, op.cit., p. 89.

[86] Housing Markets and Public Policy, op.cit., p. 244.

[87] Uncontrolled Urban Settlements, loc.cit.

It has been observed, also, that homeowners tend to spend money to improve and maintain their property less with a view to a return on the investment than because of the more intangible value that seems to be attached to home ownership. Grigsby states:

> The homeowner, in his simultaneous role as both consumer of and investor in housing, has a natural tendency to overmaintain his place of residence by strictly investment standards. It is well recognized that much of the money and personal effort which owners put into their homes is not returned at the time of sale, but only in greater pleasure during occupancy. Even in so-called declining areas, the attempts of many homeowners to improve their environment with whatever small resources they command are plainly evident to the most casual passerby. It might be argued that it is not owner-occupancy which explains the higher expenditures but, rather, that among families of similar circumstances those with the higher preference for housing seek this form of tenure. Even so, the extension of the opportunity for homeownership to lower-income groups might prove to be beneficial not only to them, but to the housing inventory as well.[88]

It may be this factor that explains the general lack of concern about costs of ownership that has been observed among owner-occupants and that accounts for some of the difficulty encountered in obtaining accurate figures not only for major improvements but for ordinary operating costs as well. Coons and Glaze investigated the question of what their sample of homeowners considered the most important costs of ownership to be, and report:

> Only 2 among the 100 cases interviewed cited the opportunity costs of ownership...A great many home owners did not cite all of the more or less standard costs. It should be recalled, in this connection, that each case had estimated earlier in the interview the actual costs of ownership; that is, each had estimated maintenance, insurance,

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[88] Housing Markets and Public Policy, op.cit., p. 236.

> tax, and mortgage costs where the latter applied. Usually these cost estimates were extremely "rough." Taxes and mortgage payments were readily estimated; in most cases tax bills and mortgage papers were at hand. Insurance costs and maintenance costs were more difficult to estimate. Maintenance costs in particular were difficult... A very limited number had kept a record of maintenance costs. Thus, a substantial number of home owners apparently do not concern themselves with the total costs of their ownership. This is seen in the fact that 25 cases did not cite maintenance as a significant cost, 34 cases did not cite taxes as a cost, and 55 cases did not cite their insurance payment as a cost.[89]

The improvement and maintenance work undertaken by owner-occupants in the San Juan pilot study indicate some significant and interesting patterns of expenditures among the four neighborhood areas.[90]

Measures of improvement used in the pilot study were repairs or improvements since occupants had moved into the present residence, total amount spent on each improvement or repair made, and whether the work was hired or performed by the family. Three categories of improvements and maintenance were used in the analysis, total reconstruction, partial reconstruction, and repairs (work classifiable as ordinary upkeep).

As expected, less was spent on total reconstruction, on the average, in the lower-middle-class area, and also not surprisingly, the largest

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[89] Housing Market Analysis and the Growth of Nonfarm Home Ownership, op. cit., pp. 99-100.

[90] Data cited in the following discussion were analyzed by Robert N. Merrill in an exploratory study and reported in an unpublished paper, "Some Empirical Evidence for a 'Functional' Housing Policy in Latin America," on file in library of Center for Housing and Environmental Studies, Cornell University, Ithaca, N. Y.

average amount, $933, for that category was spent in the lower-class neighborhood. As Merrill points out, however, considering the physical handicaps to improving the dwelling units in the slum neighborhoods (where the majority of dwelling units were on posts over mud flats):

> Under these conditions it is, therefore, surprising to note not only the amount of construction undertaken in the slum neighborhoods but also that the vast majority of it was in the "Total Reconstruction" category.[91]

The total amounts reported as having been spent over the period of occupancy on total and partial reconstruction taken together were, on the average, $12,000 in the lower-middle-class neighborhood (mostly for partial reconstruction), about $4,800 in the lower-class neighborhood, and about $3,200 in the slum areas.[92] In connection with the figures of total costs, which are based on reported costs of several jobs over varying periods of time, it must be pointed out that there is opportunity for substantial error and understatement. The inaccuracies inherent in recall over relatively long periods are an important source of understatement. Related to this is the variation in lengths of time in the present residence: in general, those in the lower-class neighborhood had lived in their present homes longer than those in the other two

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[91] Ibid., p. 15.

[92] The latter two areas included a few renters who had also improved their residences.

areas. Related to this also is the likelihood of higher costs for similar work at later periods as a result of rising costs. Total cost as a measure, however, is still useful as an indicator of large and costly investment in the home, especially in relation to incomes--which were undoubtedly lower in many cases at the time the actual work was performed.

The most interesting finding was the type of improvements. In the lower-middle-class area, most of the work took the form of adding balconies, awnings, patios, grillwork, and similar relatively "nonessential" improvements. In the lower-class neighborhood, improvements of internal space predominated: bedrooms were added, as also were kitchens or bathrooms, second stories, and similar types of expansion. The residents in the slum areas, on the other hand, were concerned with improving foundations--"raising the house" onto footings or posts--and also adding rooms. Maintenance work in the slums was also principally structural, as, for example, repairing roofs and floors. All three areas showed a pronounced tendency to hire the major construction work out and to do minor repair work themselves, the lower-class neighborhood especially, and the slum neighborhood about as often as the lower-middle-class. About four fifths of owner-occupants in the lower-middle-class and lower-class neighborhoods had made some improvements or repairs, as also had 69 percent of those in the slum areas.

The pattern that emerges from the above is clear and in line with findings from housing research in the United States. Homeowners in the San Juan sample, in general, spent substantial sums on property

improvement. Maintenance received some attention, more, of course, in the slum areas (from about 30 percent of the homeowners, compared with about one fifth of owners in the lower-class neighborhood and one sixth of the owners in the lower-middle-class area), but major and minor improvements engaged the attention of the majority. Where the houses were of good quality and construction, and internal space not a serious problem,[93] improvements took the form of embellishments to make the dwelling unit distinctive and possibly more attractive. Improvements, in other words, were made that might be considered related to "greater pleasure during occupancy." Where dwelling units were apparently sound, they were brought up to date by the addition of "comfort" features -- more space, inside bathrooms, kitchens, and so forth. And where the dwellings were largely substandard owner-occupants invested proportionately large amounts of money to make them safer and healthier to live in and, possibly, to improve their appearance.

At what stage inhabitants in the slum areas become concerned about the features of safety and health and whether it takes precedence over inside plumbing, lighting, and other conveniences cannot be determined from data in the San Juan study. As indicated in previous sections, the slum neighborhoods were equipped with water and sewers and a high proportion of the dwellings had water and some bathroom fixtures inside the unit.

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93 The lower-middle-class neighborhood had lower persons-per-room indexes (over half under 1.0 per room) than the other neighborhoods at the time of the survey.

Where data on total improvements and types of improvements are to be used as indicators of desire to improve owner-occupied housing, a set of questions that will provide data on other pertinent factors besides those usually included will be needed. Type of improvement is highly important. Source of funds to pay for the improvements is a usable indicator of possible need for aid (for example, from savings, mortgaged house, refinanced mortgage, and so forth). At times of rapidly rising prices, for instance, delays in performing improvement and repair work because of lack of funds can increase outlays of owners substantially and frequently prevent later owners from performing even necessary repairs. This feature may be especially important if the tendency found in the San Juan sample to hire out the major work is typical of other areas. Information on costs is a useful indicator of extent of financial commitment, keeping in mind its deficiencies.

Home improvements by owner-occupants are, of course, only one aspect of the larger issue of better housing conditions. It is relatively easy to price low-cost housing out of reach of low-income families by upgrading neighborhoods and thus indirectly supporting the proliferation of slums. Grigsby's remarks in this connection apply to some specific situations among low-cost housing neighborhoods in the United States, but his main points may be applicable elsewhere:

> Whether...secondary effects of rehabilitation might materially reduce the volume of new construction and stop a large number of homes from passing to lower-income groups is not known. It may be that for every family diverted from the new home market to a conservation area, as many as ten or twenty existing homes would

be materially elevated in quality by households who had no desire to move in the first place. If so, total housing investment would be greater than in the absence of a rehabilitation program, and the negative impact on filtering would be minimal. Even if the total volume of investment were not larger, however, it must be remembered that the expenditure of funds spread over a number of dwelling units will usually have a more favorable effect on environment than the same outlay on a single new home. In all, it appears that in neighborhoods where a large proportion of the families would prefer to remain where they are, renewal...should be encouraged and that any potential adverse effects on...the housing situation of lower-income groups must be minimized through other housing programs.

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[94] Housing Markets and Public Policy, op.cit., p. 303.

SECTION V. THE URBANIZATION PROCESS

Previous sections have discussed the importance of family characteristics and housing aspirations in relation to housing choice. This section is concerned with a third element in the housing situation of a low-income population in an urban area: their relationship to the urban society.

All too frequently the problem of the population living in slums or other low-quality housing is isolated from the urban context and viewed as a self-created phenomenon.

> But the slum exists within a total environment consisting of the city, the metropolitan area, the state and the nation. Its situation is affected by arrangements and relationships it maintains with other parts of the broader society. Individuals, groups of people, agencies, and institutions located outside the slum affect its population and the converse. The nature and type of interactions which occur underlie the slum's dynamics.[1]

In the urban setting, goods and services (including jobs, housing, and education, among others) are distributed through structures and institutions. The relationship of particular groups to the distributive agencies is one determinant of how many goods and how much service they receive. To understand the forces operating in any urban neighborhood, but especially in the lower-quality ones, the neighborhood (and its population) has to be

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[1] Jack Meltzer and Joyce Whitley, "Social and Physical Planning for the Urban Slum," in Brian J.L. Berry and Jack Meltzer, eds., Goals for Urban America, Englewood Cliffs, N.J.: Prentice-Hall, Inc., p. 141.

seen in terms of its relationship to the larger urban setting.[2]

At the present time, there is little empirical data on how the urban structures and institutions operate to serve the low-income population. Even less is known about the extent to which the low-income urban population is able to utilize the channels of mobility provided in an urban setting.

> Because of their lack of personal and social resources the slum populations have few options or alternatives and consequently are unable to affect significantly those decisons which affect importantly their lives. The quality of their lives is a function therefore not so much of their own choices but the result of decisions which others make. The circumstance is changed only to the extent that the options and alternatives available to them are increased and it becomes possible for them to affect increasing aspects of their day-to-day activity.[3]

The process of assimilation is the means through which groups are taken into the social order. A major topic of the following discussion is how important aspects of assimilation might be explored in a housing sample survey. Because, in developing countries, large proportions of low-income urban groups are migrants or their descendants, the discussion of assimilation is preceded by a review of some topics related to migration that might also be included.

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[2] This point is well developed in the above reference. A close resemblance between that article and Turner's thesis for urban development may be seen.

[3] Ibid., p. 149.

Internal Migration

The importance of the study of internal migration to the study of housing and urbanization problems is obvious and need only be mentioned. That part of the growth of urban areas in many developing countries due to movement from the rural and small town areas to the larger cities often approaches or even exceeds the rate of population growth due to natural increase. Housing a rapidly growing urban population is the crux of the "housing problem" in developed as well as less developed societies.

Internal migration, which in developing countries tends to be overwhelmingly rural-urban migration, to a great extent is a mechanism by which economic and social development takes place, that is, integration of the national population in terms of participation in economic and social structures is accomplished to a great extent by the attraction to some areas of persons with appropriate motivation, skills, and demographic characteristics and/or the repulsion of persons from areas with few opportunities, or where certain characteristics are superfluous. Residential mobility, on the other hand, represents one of the mechanisms by which social mobility is manifested, that is, movement to a new dwelling unit can be an occasion for improving the quality of the family's housing as a result of previous socioeconomic gains by the family.

The emphasis in the discussion of residential mobility, therefore, was on the potential improvement in housing that may

result from socioeconomic mobility. Residential mobility may be a dependent variable as regards upward family mobility in social and economic terms while internal migration tends to be an antecedent variable influencing the amount of socioeconomic improvement occurring in the society. It is for reasons such as these that different conceptual and analytic approaches are necessary for the study of these two types of geographic mobility.

Although migration to cities is often cited as a cause of housing shortages, migration per se often may not be the prime factor. Populations are growing very rapidly in most developing countries. The excess rural population (excess in terms of land and opportunity for expansion of land base or of production with present land resources) moves to the cities and relieves the population pressure in the rural areas. Rural birth rates are usually higher than urban at the same time as rural social and economic structures are less able to absorb population growth than urban areas. The recently accelerated population growth is transferred to cities. The countryside is not being depopulated in most developing countries, however. On the contrary, rural populations continue to grow at rates frequently in the range of 1 to 2 percent per year. The shortage of housing, then, is the result of population growth in general rather than merely rural-urban migration, since the new additions to the population would have to be housed somewhere. Stated simply, it seems not to be the case that housing is short because people are emptying the rural areas

and therefore creating a new need for housing in the cities. The need for housing would be acute if there were no migration to the cities, simply as a result of population growth alone.

Demographic studies of migration in developing countries have tended to be based on two approaches. The first is analysis of census data based on (1) place of birth compared with place of residence at the time of enumeration. (2) residence at some previous point in time, usually one or five years prior to the date of enumeration, and (3) length of residence in current home. These data usually are tabulated separately by sex, at times by sex and age, but few other characteristics are analyzed. Nothing about motivation for migration or expectations about future movement, of course, are available from such data. The second approach, sample survey studies of migration and mobility, tends to have been limited to the large cities of developing countries. Studies of this type have been conducted in El Salvador, Chile, Peru, and other areas. There has been a dearth of studies that include in the research design the rural communities and small towns from which the migrants have come. A small number of recent studies, mostly as yet unpublished, have been conducted in Latin America which have incorporated rural non-migrants and rural return-migrants (people who once lived in a city but returned to the home village or town) as well as migrants and non-migrants who have remained in the city.[4]

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[4]Some examples of this type of study are: Earl W. Morris, Acculturation, Migration and Fertility in Peru: A Study of Social and Cultural Change, Ph.D. dissertation, Cornell University; Allen Simmons, Ph.D. dissertation, Sociology Department, Cornell University, in progress.

Another important focus in the study of internal migration is directed toward the study of several processes of social and cultural change that accompany or are accompanied by migration.[5] The movement of professionals from one city to another represents migration that is relatively devoid of considerations of social a cultural change. On the other hand, when a rural, peasant farmer moves to the city, he is engaged in a process which requires him to learn new norms and values, new behavior patterns, and new ways of managing psychological tensions. The greater the gap between rural and urban, the more difficult these changes will be. In some nations, such as Peru, the gap is indeed very great since there are language barriers to be crossed as well.

Background information on motivation to migrate, factors that made migration a reality, and the pattern of migration, will be required. One reason is that all of these circumstances will have separate or combined effects on the nature of the assimilation of the migrants in the city. Therefore, the design of the research will be similar to one for a study of migration per se; the principal difference will be in the depth and extensiveness of the analysis with regard to places of origin.

A number of considerations are involved in this concept of migration, with respect to objective conditions as they exist in the particular city (employment opportunites, housing and neighborhood conditions, and so forth), norms and values of an urban society (whether or not operating in the particular city), and the attitudes and expectations of the migrants.

The basic consideration is that the country in which the survey is being conducted is committed to economic development. Allied with that consideration is another premise, that the type of economic development being undertaken is urban-based and will occur through industrialization:

> Efforts to produce a general theory of underdevelopment have produced a variety of two-sector models...The main lessons to be derived from such models is that economic development may be inhibited either by failure of investment in the industrial sector to expand fast enough to absorb an increasing share of the labor force into that sector, or through failure of agricultural productivity to rise enough to produce the necessary agricultural surpluses. There is indeed a need for a kind of "balance" between agricultural improvement and industrial expansion; but the kind of "balance" which effectively raises levels of living is one involving a progressively shrinking share of agriculture, both in total output and in total employment. In short, economic development without industrialization is unthinkable.[6]

Economic development through industrialization requires changes in social as well as economic structures.

> The basic mechanisms through which economic development creates the conditions for social integration are the modification of the occupational structure and changes in the quantity and composition of goods and services. Both involve well known changes in the stratification system: (1) higher occupation differentiation: (2) a general trend toward occupational upgrading (in terms of skill, education, and status); (3) as a consequence, the enlargement of the middle strata; (4) finally, the expansion of consumption allows growing access of the lower strata to goods and services which in the immediate past were typical of higher classes.[7]

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[5]Wilbert E. Moore, Social Change, Englewood Cliffs, N.J.: Prentice Hall 1963, p. 87.

[6]Benjamin Higgins, "Urbanization, Industrialization, and Economic Development," in Glenn H. Beyer, ed., The Urban Explosion in Latin America, Ithaca, N.Y.: Cornell University Press, 1967, p. 123.

[7]Gino Germani, "The Concept of Social Integration," in Ibid., p. 181.

In most developing countries, acceptance of industrial urbanization will require a changeover from a traditional, rural-based, agricultural society toward a modern, urban-based industrial one. The model traditional society has well-known characteristics which may be summarized as economies based on agriculture(or other extractive industries), two-class societies, and power exercised by a rural landowning elite. The characteristics of the urban society model are less generally accepted, but may be summarized broadly as being based on industrial operations, fluidity in the social system, and emergence of middle classes or middle sectors. As Sjoberg has pointed out, however, "cities in traditional civilized orders do not undergo any sudden and complete transformation into the industrial form. As transitional cities, they are partly industrial, partly pre-industrial in character."[8] While no useful purpose would be served by an attempt, even if it were possible to do so, to generalize characteristics of some cities at different stages of the transition as characteristics of most transitional cities, several processes may be ongoing at the same time: (1) the persistence of traditional forms, (2) revision or modification of traditional forms, (3) disappearance of traditional forms, and (4) emergence of new structures. The focus of research, under such conditions, has to be on social processes rather than on social institutions and structures.[9]

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[8] Gideon Sjoberg, "Cities in Developing and in Industrial Societies: A Cross-Cultural Analysis," in Philip M. Hauser and Leo F. Schnore, eds., The Study of Urbanization, New York: John Wiley and Sons, Inc., 1965, p. 220.

[9] Ibid. pp. 220, 224.

Differences between countries, and conceivably also between cities within the same country, can be expected not only in their levels of urbanization but because of other factors as well. One of these is the probability of differences in rural heritage. It has been pointed out that the rural community completely isolated from urban influences is difficult to find.[10]

On the basis of findings from a study in Mexico City (1951), Oscar Lewis stated: "Urbanization is not a single, unitary, universally similar process but assumes different forms and meaning depending upon the prevailing historic, economic, social, and cultural conditions."[11] Relevant to rural differences, though possibly of minor importance in many countries, are differences in composition of the population. Examples of this are the high proportion of descendants of the foreign-born in Argentina and the high proportion of Indians in Bolivia and Peru. Cultural and racial differences are important principally from the standpoint of whether they are effective barriers to acceptance by the greater society, the proportion of the population involved, and the type of institutions that may develop in the process of integration.

> Minority groups in many transitional cities present a special problem; the traditional outcast groups are the most notable example. On the one hand, the emerging values generally call for greater equality of opportunity, thus setting in motion forces that undermine the long-perpetuated segregation of minority or outcast elements. On the other hand, it is often easier for members

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10 For an analysis of the extensive contacts between the urban society and a rural community see E. Morris, et. al., Coming Down the Mountain (unpublished).

11 "Urbanization Without Breakdown: A Case Study," The Scientific Monthly Vol. 75, No. 1 (July, 1952), p. 19.

> of minorities to climb within the broader society by identifying with their respective groups than by functioning as lone individuals.[12]

With respect to emerging structures in cities, many, if not most, developing countries has adopted several of the institutions and structures characteristic of more advanced societies. The attitudes that make the institutions and structures operable, however, cannot be so easily transferred, but rather, must develop from within the society.

For the migrant, the move from the rural area to the city is more than a change of residence. It has been considered broadly as a changeover from an ascriptive society to a rational society. Ascriptive as used here means the assignment of causes of events to forces beyond the control of the individual or the group; that is, change is not possible or, at best, is difficult. Rational in this context means the perception of events as brought about by the functioning of the social order: that is, they can be changed, although perception of the role of the individual in the process may not be immediately acquired.

In contrasting the exercise of power in rural groups from those in urban groups, Horowitz mentions four differences between rural and urban environments which may be used to illustrate the change in social climate:

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[12]Sjoberg, op. cit., p. 226.

> First, the notion of traditionalism implies a fixed relation of superordination and subordination... Second, land tenure...is not something which landlords and peons are able to divide into equal shares. Third, the function of the factory owner is to provide investment capital, incentive, organizational skills, and so forth, all of which make him relatively understandable to the factory worker...Fourth, the rise of universalistic criteria tend to depersonalize relations, hence it "impersonalizes" solutions.[13]

Given differences in urban destinations, rural (or urban) places of origin, and between urban and rural societies at different levels of development, background information on the urban in-migrants is essential to an understanding of their propensity, and in some cases their desire, for assimilation into an urban society. For example, migrants deeply rooted in the rural tradition who make temporary forays into the cities for short-term employment may be less likely to be exposed to the urban culture or to have attitudes and behavior changed than a nuclear family who takes up residence in the urban area and is prepared to remain permanently in the city.

There is a large body of theory with respect to the stimuli for migration. They have been classified as either "push" or "pull" factors and provide a basis for a study of the process of migration. Horowitz has provided one of a number of summaries of the situation:

> Whether this drive toward the city is due to "push" factors (difficulties in rural life) or "pull" factors (attractions of urban life) is difficult to ascertain. The tendency in Latin American studies is to emphasize push factors:

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[13] Irving Louis Horowitz, "Electoral Politics, Urbanization, and Social Development in Latin America," in The Urban Explosion in Latin America, op.cit., pp. 249-250.

> the lack of opportunity for change in status; the displacement of functions by rapid farm mechanization; the high degree of soil exhaustion in many areas; the ineffective administration, marketing, and servicing facilities in rural areas. On the other hand, the fact that the flow to large cities is significantly greater than the actual opportunites for stable employment or adequate housing indicates the existence of large-scale pull factors. The attraction of the city cannot be attributed to industrial growth alone, since the rate of urbanization is much higher than (often double) the rate of industrialization. This "lure" is undoubtedly linked to achievement drives, to the desire to have the advantages of education, health welfare, general culture, and the like associated with city life throughout the world.[14]

Before discussing the major topics to be included, it should be pointed out that the design proposed is for emphasis on urban aspects of migration; that is the effects of the migrant's background on his absorption of urban attitudes and patterns of behavior. A full-scale study of the process of migration would require a design that would explore how the push factors, and what ones, were operating in the rural society; what particular attraction the place of destination exercised; an analysis of changes over time in both places, where changes had taken placesince time of migration; and an exploration of the level of economic development and its disintegrative effects on the specific rural area, as well as other considerations. A sample taken from an urban area, particularly a large metropolitan one, in addition, is likely to have considerable mix in its low-income population at different housing levels. In San Juan, for example, it was found that the largest proportion of in-migrants from other urban areas was among the residents of the lower-middle-class housing area, while the slum and public housing areas were fairly evenly distributed as to those born in San Juan, born inrural areas, and from urban areas outside San Juan. In volved in it are considerations of improving

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[14] Ibid., p. 224.

urban housing; stimulating the attractions of other urban areas, possibly smaller ones, for a better distribution of population; and many others.

The following design is derived from a conceptualization scheme for a migration study developed by Gino Germani.[15] Such a study requires consideration of: (1) objective conditions; that is, the operation of push factors in the area of out-migration and of pull factors in the place of destination; channels of communication (formal, informal, and mass media), accessibility (distance, costs, transportation); (2) framework of the rural society; that is, its type of culture (tradional, transitional, or modern) and social stratification (how roles of inhabitants and behavior in them are defined); and (3) attitudes and expectations of migrants. In formation on the push factors should also include signs of disintegration in the rural area; how far attitudes may have changed toward it; various strata affected by changes; whether the rural area is one of heavy or light out-migration; and some major similarities or differences between the rural region and the destination city.

Data on the first two aspects should be "fairly detailed":

> For instance, a general description of the main institutions --family, work and economy, religion, politics, education,

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[15] Gino Germani, "Migration and Acculturation," in Philip M. Hauser, ed., Handbook for Social Research in Urban Areas, Paris: UNESCO, 1965. The rationale for the topics and measures are discussed fully in the reference.

> background information against which the observations made on the migrants in the city could be compared. Of special importance will be the data related to degree of economic development and of cultural modernization and the particular aspects which may characterize the place of origin from the point of view of the transition from less modern to more modern or more traditional to less traditional structure: forms of land tenure, degree of concentration of land ownership, extent of monetary or subsistence economy, degree of the integration of the area into the national market, kinds of social relations prevailing in the field of work and economy, as well as in other orders of life.[16]

It should be stated that data on the rural areas for comparisons may be difficult to obtain.[17] There is, in several countries of Latin America, in existence a considerable body of anthropological data that will permit at least some broad distinctions to be made between areas of origin of urban in-migrants and such information should be useful in classifying rural areas of out-migration. Some relevant factors related to push, or ability to withstand urban pull, would be economic opportunity in the countryside,

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[16] Gino Germani, "Migration and Acculturation in Handbook for Social Research op. cit., pp. 167-168.

[17] Urban samples have been compared with rural samples in some studies of migrants focused on specific situations. For one, see H. Rotondo, "Psychological and Mental Health Problems of Urbanization based on Case Studies in Peru," in Philip M. Hauser, ed., Urbanization in Latin America, New York: International Documents Service, Columbia University Press, 1961, pp. 249-257. In that study, characteristics of a barriada sample were compared with those of a group in a small town near Lima..

not an area is one of extensive out-migration, and its status at about the time of migration, if changes in its situation have taken place in the meantime. Even where a large number of areas of origin may be reported, numerous analyses of the rural situation indicate that most could be categorized as backward, declining, or developing, or in some similar manner. Some cities, also, may tend to draw heavily from relatively close-in rural regions, whose characteristics may be evaluated from observation and government data. An understanding of the rural factors involved is essential for rational policies with respect to re-directing or diverting a flow of migrants to one or only a few cities. The design of the research should be related to answering questions such as what kind of improvements in rural areas will slow down migration, in order to design rational programs to improve rural conditions, including housing. And, of course, the attractions of the city have implications for urban planning and housing programs.

In his study of Puerto Rico, Steward reports, for example, that the heaviest rural out-migration was from the region of least opportunity, the most backward, and the most dominated by tradional social structure. The differences between regions in Puerto Rico also affected the pattern of migration; for instance, in some regions, migrants went to the nearest city rather than to San Juan and in some instances moved into small cities or villages, where they remained

unless impelled by economic or social circumstances to move on.[18]

Considerable information on economic development and modernization may be obtained from an analysis of census data. In addition to principal indicators of development, such as city size and amount of nonagricultural employment, the analysis should include

> other data, such as fertility, general mortality and infant mortality rates, size of family, proportion employed in factory industry, size of plants, per capita income, proportion of middle socio-occupational strata, literacy and other educational rates, proportion of voters, proportion of union affiliation, newspaper circulation, radio and televison sets in operation, etc.[19]

The demographic structure of the rural community, or small cities, may be a factor in migration of women. A demographic structure unfavorable to women may be a motivating force to migrate, particularly from rural areas where economic and social opportunites for women outside marriage are highly restricted.[20]

In a housing study, where less emphasis is placed on the causes of migration in comparison with the fact of migration, rural and urban areas might be compared on some characteristics. Implied

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[18]Julian H. Steward, et.al., The People of Puerto Rico: A Study in Social Anthropology, Urbana, Ill.: University of Illinois Press, 1956. A later study indicated substantial changes in the San Jose region, with changes also in out-migration. See Theodore Brameld, The Remaking of a Culture: Life and Education in Puerto Rico, New York: Harper & Brothers, 1959.

[19]Gino Germani, "Migration and Acculturation," in Handbook for Social Research, op. cit., p. 169.

[20]"Acculturation, Migration and Fertility in Peru..." op. cit., for effects of demographic structure on migration in Peru.

Otherwise, the method may suffer from the handicap of overgeneralizing characteristics of some rural areas to all of them.

Under any of the methods, in a housing study, knowledge and observations about the rural condition may be summarized and inferences drawn from it with respect to degree of assimilation in the urban area.

Two types of data on characteristics of the migrants are required. One is general socioeconomic-demographic data; the other, some psychological aspects. The characteristics that define socioeconomic status are well known: education, occupation, and income (Germani includes others), and the demographic characteristics of age, sex, marital status. The data relate to the time of first migration; where several moves are involved, data on length of stay at each place are obtained. Socioeconomic and demographic variables can be expected to discriminate between groups on (1) motivation; (2) communication channels; (3) how migration was made; and (4) in the degree of assimilation in the city. Only relatively low socioeconomic groups may be affected by push factors of unemployment or poor earnings; only higher socioeconomic groups may be involved in inter-city moves. Women may not migrate except as members of a family from some areas, while in others, the larger proportion of out-migration may be female. In most areas, only young single men or women or young couples may move. Inter-city moves, in contrast, may take in older couples at different stages of the family life cycle. The implication s for assimilation differ,

depending on the rural background and combinations of demographic and socioeconomic characteristics. Information on all aspects of the transfer to the city should be collected from both men and women in the sample.

Since the act of migrating involves a choice, data on some individual qualities which are likely to influence the selection of migrating or not migrating will be needed. This psychological aspect will be tapped only broadly in a housing study, through measurement of qualities that have relevance for other parts of the analysis.

In some case, some personal situation may have been the precipitating factor: death of a parent, getting married, and so forth, even when the migration itself is in response to some more general situation. One method of exploring what particular crisis or change in family situation made the move possible is to collect data on why the move was not made sooner. Individual responses may give some clues as to why more people do not leave. Since the study is related to group behavior rather than to the individual, it is probable that responses to this question will only supplement the more general information being obtained.

Data on the migration history of the respondent's parents will be useful for an urban sample. Data on birthplaces of respondent's mother and father should be obtained, and this information can be supplemented by inquiries about whether or not fathers ever lived in a city of or above a certain size. In the San Juan pilot study, this latter question was asked of men only and a similar question related to the male respondents' experience in cities of a certain population was also asked, for comparisons of intergenerational geographic mobility. These data also serve to identify first and second-generation migrants and provide some clues to differences (if any) in degree of assimilation among migrants in the sample who came from homes where either or both parents had at least some urban experience.

Reasons for migration are most likely to be the most important part of the analysis of both the move to the city and assimilation aspects of migration. Information on the following topics should be part of the survey, modified, where needed, to suit conditions in a specific study of an urban area:

1. Manifest motives, which may be reported and analysed in the usual terms of economic (low salaries, unemployment, lack of land, etc.), domestic (i.e., wish to rejoin other members), educational, and other reasons (wish for new experiences, escape from traditional setting, higher aspiration and mobility, etc.).

2. Manifest intention of the migrant regarding the temporary or permanent character of the migration.

3. Nature of the decision, which could be analysed in terms of degree of deliberation, such as from high rational choice to sheer impulsivity, in which no conscious stage of deliberation could be detected.[21]

It should be possible to categorize the reasons for the move as to whether they relate to place of origin or to place of destination (a move because of unemployment in the countryside, for example, and one from knowledge of a better job in the city are both economic). Migration may have been in response to an interplay of push and pull factors, or to different strengths of either compulsion, for migration from rural areas or inter-city moves, or one type of motivation may replace the other. For some socioeconomic levels, some pull factor may be operating even at the time of the initial move from a poverty-stricken rural area. Possibly direct questions might be included on why the present area was selected. The detail is recommended in order to permit more extensive analysis of motivations than can be made where a large variety of conditions are classified as economic, social or family, without respect to whether it was a rural push or an urban pull, and the characteristics of the migrants who were influenced by it.

Closely associated with motivation is how the migrant heard about the urban opportunity, The move may have been in connection with his occupation; more likely, among a low-income population, friends and relatives in the destination city (the usual measure)

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[21] Gino Germani, "Migration and Acculturation," in Handbook for Social Research, op. cit., p. 173.

provided the information. Mass media provide another channel of information. It is entirely possible that, as channels of communication through mass media reach into the countryside, they reinforce other channels and may become initiating forces. They may also be important in attracting certain groups, such as those with more to offer the city through education or having acquired special occupational skills. Some occupations, in addition, such as construction work, are almost migratory by nature; others, where relatively few opportunities may exist for the exercise of specific skills (steelworkers) may inhibit migration, even where the desire exists. At unskilled levels, moving to another city may be the means of putting one's self in the way of a larger number of employment opportunities.

Costs of the move may enter into the decision process. In addition, improved transportation may be a stimulus, particularly for migration of families. How the move was made, especially the initial move from the rural area, whether or not the migrant stayed with friends or relatives in the destination city, are points to be included in the survey.

For large cities, which are likely to be receiving centers for migrants from a variety of rural and other urban areas, a set of questions covering each separate move will be required.

Concern with the attitudes and expectations of migrants also requires the measurement of how well their expectations were fulfilled and what problems they encountered or were encountering, such as housing, unemployment and family disruption. They may also

be asked to compare their present housing, employment, or family situation with their former out-of-town one. In some cases, migration to a city may mean improved status merely by reason of the move. Improved social status may be a motivating force but expressed only as better economic opportunity. Some indication of its effectiveness may be found in the evaluation the migrant places on the move to the city as an improvement of his life chances. Another measure of his satisfaction with the move is whether he regards his present destination city as a permanent place of residence or whether he intends to move on or return to his area of origin.

Assimilation.

Whatever his motivations for coming to the city, and regardless of the extent of development of urbanization in the particular city or the extent of the migrant's previous experience with urban ways in the rural setting, the migrant becomes, or has become, involved in a different type of economic process and in different types of social relationships. From the standpoint of the migrant, involvement in the processes may be defined as requiring adjustment, participation, and acculturation. Taken together, these three processes define the degree of his assimilation into urban structures. From the standpoint of the national

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[22]Gino Germani, ' "The Concept of Social Integration" in Glenn H. Beyer, op. cit., p. 175. "Modern" here refers to any type of industrialized society as exemplified in any of the advanced countries. As will be seen, the model modern society implicit in the proposed research design is that of the Western democracies.

society, the process may be defined as one of integration.

The concept of integration as used here means "the integration of individuals, social groups, or categories into the various institutions of the modern society."[22]

Social integration means that changes take place in social organization which permit the assimilation of marginal groups (or that changes take place in such groups permitting their assimilation). Social integration implies that participation is both legitimate and effective, which means, briefly, the absence of irreconcilable conflicts between the different groups of the society or between a particular group and the remainder of the society which prevent members or former members of marginal groups from full membership. Germani explains that the basic integrative mechanisms are "modification of the occupational structure and changes in the quantity and composition of consumption of goods and services," which make possible the changes in the stratification system and set up the conditions for social mobility:

> the expansion of the middle sectors and the occupational upgrading creates structural mobility; the increase in the proportion of statuses based on achievement (especially through education) increases the fluidity of the system (and exchange mobility); expansion of

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[23] Ibid., p. 181.

> consumption originates a continuous transference of status symbols from top to bottom, that is, a kind of psychological upward mobility.[23]

In a study of the problems associated with slums and low-cost housing in general in a developing country, emphasis is, of course, on the housing aspects primarily and on migration aspects secondarily, as contributing factors. Such a study is approached from the standpoint of the urban area; specifically, what is required in the way of housing and neighborhood services that will improve the opportunity of the inhabitants[24] to move into an urban society. For example, improvements in housing and neighborhood should be directed toward lessening their isolation, where they are isolated, from urban influences.

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[24] The population living in the slums and low-cost housing areas are assumed to be migrants or descendants of migrants. It may include in-migrants from large metropolitan areas, smaller-size cities, distant or nearby rural areas, and people born in the specific city. It is also further assumed that the proportion of foreign-born immigrants in that population will be small. These assumptions are based on the literature. The first assumptions eliminate some topics sometimes included in migration studies: changes in speech dress, food, return migration, and similar aspects, all of which are valid considerations for a study of migration. For the proposed research design, the "model" migrant is taken to be "mobilized", as defined by Germani (ibid., p. 184) for whom migration meant "release from the traditional structure and disposition or aspiration to participate in the new roles, or to obtain access to new forms of consumption."

While the discussion cannot be considered exhaustive by any means, some indication of the place of housing and neighborhood in the complex process of assimilation can be obtained from a consideration of some major barriers to operation of urban integrative mechanisms in the low-quality housing neighborhoods and, conversely, some inhibiting effects of those housing neighborhoods on mobility through an urban pattern.

Some of the principal factors that can have an inhibiting effect on urban integration are identified by Germani as "local historical and cultural conditions, ethnic barriers, persistence of archaic patterns imported from the rural areas, types of neighborhood and housing," and the fusion or adaption of traditional patterns to modern structures.[25]

Likewise, as analyzed by Germani, mobility according to an urban pattern takes place through "change of neighborhood, social mobility, and increased social participation."[26] In all of these processes, poor housing and neighborhood may be reinforcing factors. Further, measures to improve housing and neighborhood may similarly reinforce disintegrative forces, or, conversely, disrupt integrative ones. For example, it is being recognized that recent migrants from rural areas tend to seek out earlier migrants from the same rural area or to limit their associations to people of the same

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[25] Ibid., p. 182.

[26] Ibid., p. 179.

class, ethnic group, or occupation.[27] This is not, of course, unusual behavior for any social level, but it assumes a different significance when acculturation, urban experience, educational, and occupational levels are relatively low. Where housing and neighborhood acts as a force that restricts choices of social participation to a limited number of areas, traditional ties may be strengthened, the demonstration effect of the traditional urban society overly influential, or the links to the modern structures, where they exist, ignored or made too weak to function.

Such groups, on the other hand, may indoctrinate recent migrants into urban life in a relatively benign atmosphere, provide him with some basic information, and take him into larger groups, and they may be serving as communication channels for earlier migrants. They may be urban-oriented; that is, place no special restrictions on their members. On the other hand, they may be rural oriented and emphasize ties with the earlier culture. Some organizations do both.[28] Positive tendencies can be reinforced and negative ones possibly weakened, through a housing situation

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27 Gideon Sjoberg, "Cities in Developing and in Industrial Societies", in Hauser and Schnore, op. cit., p. 226.

28 Ibid., pp. 226-227. For a discussion of neighborhood housing and social change, see John C. Turner, "Housing Priorities, Settlement Patterns, and Urban Development in Modernizing Countries," Journal of the American Institute of Planners, Vol. 38, No. 8 (August, 1968), pp. 355-360.

that fosters progressive types of interaction through its design, location, and neighborhood characteristics.

Again, a changeover to urban ways, regardless of recency of migration usually involves some disorganization. With respect to recent migrants to Buenos Aires, Germani states:

> The observations made of the groups covered by the study lead to the conclusion that the city produces two opposite effects: on the one hand, the majority of families acquire urban ways of living, including those relating to the family; on the other hand, the well-known factors of disintegration which are particularly active in certain parts of the city affect a minority, destroying or undermining a certain number of previously well-integrated family units.[29]

Obviously, housing arrangements can have a part in this, if its quality is so poor that normal family activities cannot be carried on or it is situated in or near disorganized neighborhoods. In addition, housing itself may be a source of conflict, either because of its low quality or because the type of solution being promoted does not fit the aspirations of the people involved. Even in San Juan, where the slum neighborhoods had received some physical improvements and where the residents sampled evidenced a high degree of assimilation, there was more disaffection in the slums than in the better housing areas.

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[29] Gino Germani, "Inquiry into the Social Effects of Urbanization in a Working-Class Sector of Greater Buenos Aires," in Urbanization in Latin America, p. 215. See also Andrew Pearse, "Some Characteristics of Urbanization in the City of Rio de Janeiro," pp. 191-205, in same reference.

Improved housing will not, it has to be recognized, cure poor economic and social conditions. But a real improvement in housing in a developing society means, as much as anything else, helping the inculcation of the norms of an urban society and helping either to strengthen existing links or form new ones.

In a housing study, the focus of research on assimilation of migrants or low-income groups in general will be on the degree of assimilation rather than on the processes. The data sought are on the degree to which the low-income population has taken on urban attitudes and ways of behavior and on some characteristics and conditions that may have influenced their adoption or lack of adoption.

It will be apparent from the ensuing sections that several fields of research are being drawn together and, also, that the measures suggested tap only very small portions or aspects of those fields. The exploratory nature of the San Juan pilot study precluded full analysis of the data, and, so far as known, no full-scale analysis in depth of the multitude of factors involved in all aspects of assimilation into economic, social, and political institutions has ever been made. The topics selected and the concepts utilized represent a synthesis of the literature in the separate fields, but only relatively few can be supported by references to empirical research. Modifications in methodology and techniques, therefore, can be expected after testing in actual field experience.

The concept of assimilation as used here is a rather general term that combines several separate processes. Under the assimilation rubric Germani includes (1) adjustment, (2) participation, and (3) acculturation. These represent social processes on three different levels. The first refers to the individual's personal psychological adjustment to change (in the present discussion migration is entailed in this process.) The second refers to the extent of social integration (or interaction) on a legitimate and effective basis in the social structure. The third refers to the internalization of the normative and value structures of the culture.

The concept of adjustment of the migrant (and ex-migrant) means his ability to take on and perform the roles required of him in the urban setting, without serious stress. For example, some of his urban roles are the same as in the rural society (husband, father, wage earner, and so forth), but his behavior in them will be conditioned by the urban environment. Also, he may be expected to take on some less familiar roles (member of a definite class, organization, or informal group, for example).

The concept of participation includes evaluation by the urban society as well as performance by the migrant. From the standpoint of the individual, participation means how many and what roles, how well performed, whether the participation is urban-oriented, and whether it is accepted or nonaccepted by the receiving society or is in conflict with it.

The concept of acculturation is defined here to mean the learning of urban roles, habits, values and knowledge and also the degree to which learned. That is, the urban patterns of behavior may be extremely superficial or deeply internalized or at some point in between. The acquisition of urban patterns is considerably more difficult than the acquisition of learning through the educational system, and learning how social relations operate in, say, a factory may take considerably longer than acquiring the technical skills needed for a specific job.[30]

Adjustment, participation, and acculturation are the three aspects of assimilation. They are treated as separate parts, however, because they do not necessarily take place simultaneously in the economic, social, and political spheres of activity, nor even simultaneously within any one of those spheres.

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30 The above definitions and much of the design related to assimilation presented in this section are from Gino Germani, "Migration and Acculturation," in Handbook for Social Research in Urban Areas, op. cit., pp. 159-178. Germani emphasizes that what is being studied is assimilation into an urban culture as defined by social science theory through the mechanisms of urbanization and not absorption into the culture of a particular city, which may be strongly traditional, or, at best, at a level of modernity incongruent with expectations. There may be a lack of congruence between the migrant's attitudes and the objective conditions he has met in the city; he may have found unemployment, poor housing, low salary, or other conditions so that it is"impossible to carry on the social actions as expected by the institutionalized framework and the internalized roles and attitudes; or changes in the expectations may have been brought about by cultural contacts, mass communication, etc.; or perhaps, as is more likely, different causes of change may operate simultaneously." (pp. 162-163).

> A person may be (or feel) quite adjusted with regard to the concrete technical tasks required in his job, and be unable to bear the psychological stresses introduced by the impersonal human relations. Acculturation to certain traits does not involve acculturation to others, participation in given urban groups may be performed with insufficient acculturation, etc. It is true that, at least with regard to certain spheres of activity, adjustment, participation and acculturation will usually go together, but incongruities between different spheres of activity may be quite frequent.[31]

Adjustment takes in a psychological dimension. For purposes of a housing study, it may be measured through the roles assumed and the sources of stress with respect to them. Participation has considerable significance, since it is through active participation that integration is accomplished. As Germani points out:

> One may distinguish between integrated participation, when participation is legitimized and accepted in terms of dominant norms in the society and nonintegrated participation when legitimization and acceptance are lacking.[32]

Participation can be measured to some extent objectively through behavior in roles-occupational, organizational, political, familial, and so forth.

The third dimension of assimilation, acculturation, requires the development or acceptance of attitudes appropriate to the urban milieu. While some resulting behavior may diverge from an expressed attitude because of local influence (pressures exerted by leaders, groups, family, and so forth), the relationship between attitudes and behavior holds sufficiently often so that it

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[31] Ibid., p. 166.

[32] Gino Germani, "The Concept of Social Integration," The Urban Explosion in Latin America, op. cit., pp. 184-185.

can be said that behavior tends to conform to the attitude held. Another vital reason for studying attitudes in the assimilation process is that attitudes may exist, as indicated earlier, without the means being available for expressing them. Some of the unemployed, for instance, may hold attitudes toward work similar to those of the most occupationally mobile groups.[33] And, of course, given the lack of simultaneity among the processes of assimilation, attitudes provide a means of identifying discrepancy areas. Attitudes may indicate the direction of acculturation; that is, whether toward the norms and practices of the traditional urban or rural society, toward the amalgamation of rural with urban (traditional with modern) norms, or toward a completely urban orientation (as theoretically defined). And, finally, attitudes of large groups of the population exert some influence on the attitudes and practices of decision-makers. Almond and Verba state, with respect to political attitudes:

> ...even if the attitudes we describe are in part determined by the structure of government and social system in each nation, this does not remove the fact that these attitudes in turn affect these same structures. The norms to which an individual adheres are largely determined by the role that the system allows him to play (though the fit between norms and structure will rarely be perfect); but these norms in turn have a feedback effect on the structure, reinforcing the structure if the fit between norms and structure is a good one;

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[33] That is, they may at least be highly mobilized. Knowledge of their attitudes provides some basis for predicting probable response to future opportunities.

> introducing strain into the system if norms and structure fit less well. [34]

Ideally, in a study of assimilation, it would be possible to measure adjustment to, participation in, and attitudes toward institutions and processes in the economic, social, and political areas separately in order to assess the assimilation of migrants in terms of degree and area. In the proposed study, of course, the focus is on the interaction mechanisms of the low-income population. For the San Juan pilot study, three premises were selected from the large body of theory as basic to the operation of urban society. These premises have been expressed by Horowitz, among others, as (1) resolution of conflicts within the system; (2) meeting specific class needs through "fair share" and fair distribution of benefits from the system; and (3) opportunity for mobility within the system. [35]

Implied here is acceptance of urban economic, social, and political structures and institutions as <u>legitimate</u> and <u>effective</u> (that is, acting in accordance with the tenets cited). Explicitly being measured, however, are the existing attitudes toward the underlying principles through the expressed attitudes toward the urban structures and institutions.

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[34] Gabriel A. Almond and Sidney Verba, <u>The Civic Culture</u>. Boston, Mass.: Little, Brown, and Co., 1965, p. 125.

[35] "Electoral Politics Urbanization, and Social Development in Latin America," <u>loc.cit.</u>, p. 252.

The framework is based on the framework developed by Almond and Verba and used in their cross-national survey of political cultures. It has been extended to include social and economic structures as well as political ones.[36] The framework includes two aspects, one, the perception of the institutions, and the other, perception of self in relation to them. Perception of the institutions is measured on three levels: cognitive (what is known about them or experience with them); affective (what is felt about them); and evaluative (opinions concerning them). Perception of self in relation to institutions is measured through extent of the adoption of behavior and attitudes leading to effective and legitimate participation. Specific measures relate, of course, to one or another aspects of the three underlying tenets outlined above.[37]

The framework set forth herein is not, of course, the only one through which the processes of assimilation can be evaluated. It has the advantage of fitting into a housing-urbanization study without unduly prolonging it, yet providing insights into areas not usually explored. Using the same plan for the three areas of activity--economic, social, and political--provides for both

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[36] Almond and Verba, op. cit. The adaptation of the framework was made by Rose K. Goldsen, Professor of Sociology at Cornell University, for the San Juan pilot study.

[37] It is not the function of this manual to discuss analysis or interpretation of the data. It may be mentioned that several classifications of respondents will be possible, as, for example, "allegiant and participant" and so forth.

an overview of the entire process of assimilation, and comparisons of assimilation in each area. It is worth repeating that the different aspects of assimilation are not probed deeply. Such depth can be obtained only through a research design intended primarily for a study of assimilation of migrants and the processes that further it.

Since assimilation is likely to be a lengthy process, and a housing study involves more than recent migrants, intergenerational as well as housing difference should be used. The San Juan pilot study indicated several intergenerational differences that were unrelated to housing areas. Sons, for example, were more inclined than fathers to view the economic, social, and political systems of Puerto Rico as operating effectively. At the same time, sons were more aware of some specific social injustices.

Economic assimilation

Assimilation into an urban way of life with respect to work may be taken to mean a steady job, in contrast to unemployment or broken employment, but, perhaps more importantly, work in a type of industry associated with modernization; that is, where universalistic criteria are applied in hiring and promoting employees; relations between employer and employed are impersonal (even if a job may have been found through the help of friends or relatives, keeping it should depend on the individual's abilities); the existence of organizational channels for expressing and settling grievances; and similar characteristics. The self-employed should be performing services or operations that fill a genuine need, as compared with "own account" self-employment in peddling, operating pushcarts, or other activity exemplifying underemployment. The extent of government employment may be important. Even though much employment in bureaucratic structures may be unnecessary, it is considered to differ from other forms of underemployment in that it holds the same implications for change and upward mobility as industrial employment. With respect to the growth of bureaucracy in Latin America, Germani states: "Such growth may produce the same impact on the stratification system (as changes in the occupational structure) and stimulate the other psychosocial and cultural consequences as well."38

Occupation is the prime measure of participation in the economic structure. Closely related to it is stability of employment; other things

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38Gino Germani, "The Concept of Social Integration," in The Urban Explosion in Latin America, op.cit., p. 184.

being equal, opportunities provided by employment depend largely steadiness of employment. Occupational mobility is another important measure of economic participation, as also is income mobility.

Occupational mobility, where it means upward social mobility, implies an acceptance of geographic mobility, expressed as willingness to move. Measures related to this aspect of changing residence have to be taken into account in evaluating the migrant's adjustment to the role of urban worker. The connotations for housing may be that those who associate better housing (change of residence) with improved circumstances are also likely to have preferences on type of help with housing they see themselves as needing.

While acceptance of the work role is implied in actually holding a job and keeping a job until better opportunity arises, some measures of attitudes are needed to explore the extent of acceptance of the need to work. The measures used in San Juan for this purpose were: having pride and satisfaction in the job; finding it interesting; liking the job because it enables respondent to improve skills or learn new ones; and regarding the job as more important than any other activity. All such attitudes are indicative of the predominant attitudes toward work as the major activity and a major interest of men in an urban-industrial society.

The indicator of source of conflict with the economic system was extent of satisfaction with present salaries.

Some sources of stress may be whether or not the individual feels able to cope with the urban environment; in other words, his feelings of independence and self-confidence. Overcoming obstacles through personal effort was one measure used to test successful or unsuccessful

experience, since even meager success can mitigate stress and anxiety and failure tend to increase it, sometimes irrationally. The particular obstacle overcome can be in any area of living, not necessarily in the work situation. Another and more direct measure of stress used was whether or not the individual felt anxiety with respect to his work.

Evidence of adjustment may be obtained through examination of respondents' goals. A set of goals indicating a consumption orientation and a set indicating a savings (deferred gratification) orientation may be devised. Perception of chances for success in attaining goals is another indicator.

Attitudes toward the economic system as legitimate and effective may be measured through the migrant's feelings about the institutions in terms of his own life. Two measures of that evaluation of the economic system as legitimate were used for the San Juan sample: amount of economic injustice perceived ("the poor make greater sacrifices"; "tax system favors rich"); and expectation of just treatment from different economic groups (United States business, big business, small business, and so forth). Expectation of just treatment means, in essence, that grievances will be heard and some action taken about them and that impersonal relations hold--one is treated fairly according to a universally applied system of rewards and punishment, and the like.

Evaluative questions related to effectiveness of the economic system were concerned with respondents' views of the main economic problems facing the country (unemployment, low wages, poor housing, or other); whether or not the economy was stagnating; perception of conflict with some economic interest group. The principal concern here is whether

respondents felt free to criticize the system; whether their criticisms involve rejection of the total system or are related to issues; and their views of conflicting interests as capable of being settled within the system or requiring a total break from it. Freedom to criticize implies a degree of confidence in the system that unpleasant repercussions (loss of job, loss of opportunity for promotion, and so forth) will not follow. Criticism directed toward issues rather than to the total system also implies confidence in the system as capable of being changed.

Attitudes toward the authority structure and management reflect attitudes toward the economic system. Measures of these were worker-management relations (whether business in general concerned itself with workers' welfare or was more interested in making money). Participation in decisions at work has implications for carryover into other spheres. The opportunity to participate in decisions-making is mainly a characteristic of white-collar and professional employment. The concern, however, of the questions is not with actual opportunity or action but with whether or not the respondents feel that they share in the decision-making processes.

The above measures define attitudes to the setting. Equally important are the terms imposed on one's self in the urban economic environment. A set of measures was devised for the San Juan pilot study which, taken together, would provide information on acceptance or rejection of urban economic values. As can be seen, the measures attempt to identify the extent to which ascriptive (traditional) attitudes continued and the extent to which achievement (modern) attitudes had

penetrated.[39]

1. Savings behavior: what respondents would do if they unexpectedly came into a large sum of money. (Choice of a long-term goal or savings is achievement-oriented. As indicated in Section III, the question also has implications for housing and home ownership.)

2. Attitude toward success in life.

3. Attitude toward qualities necessary for success (ranked in order of importance by respondents).

4. Preference for achievement attributes over ascriptive ones as personal characteristics.

5. Evaluation of importance of personal attributes as against ascriptive ties for success ("what you know" more important than "who you know").

Organizational activity as an indicator of economic participation (or interaction) is discussed below under social relations. The place of labor unions deserves some special consideration. In already industrialized countries, the industrial workers were integrated into the social and political orders largely through having been organized into labor organizations.[40] In practically all Latin American nations, legislation recognizing rights and welfare of urban workers (minimum wage laws, compensation, social security, and similar provisions) has

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39 As can be seen, some of them are also measures of social attitudes, though, for convenience, all of them are discussed here.

40 Admittedly this statement is an oversimplification of the class-mass struggles that took place in many of the Western democracies, some of which are not yet fully reconciled. For our purposes, however, the labor unions may be considered one of the links with the economic system through which grievances were expressed and conflicts were resolved.

been enacted by national governments, largely without serious labor agitation. Nevertheless, labor unions exist and are important institutions in Latin America. Given a tendency to settle labor problems through the national government rather than through arbitration with separate industries, roles in, expectations from, and attitudes toward labor organizations may have different connotations from their counterparts in more advanced societies. In some instances, for example, labor organizations may be channels for assimilation into polilitical rather than economic structures. Attitudes toward them and participation in their activities, however, should be measured. Measures of participation are membership, and, more particularly, scale of membership (holding office, having some responsible activity, attendance at meetings, and the like). Measures of attitudes are feelings about union activities as improving one's own life and national conditions and whether or not the union is a channel of communication respondents would use.

Social assimilation. Assimilation into an urban way of life with respect to social relations may be defined as the development or adoption of roles, expectations, and attitudes defined as urban with regard to the social structure, social class, family and kinship, formal and informal social relations, and in urban areas of some countries, religion.

In measuring the degree to which the social system is legitimate, an important indicator is not the presence or absence of conflict but whether conflict is seen as reconcilable within the system. The attitude toward the social system as legitimate was tested through a question as to whether or not the respondent would advocate a social revolution as a means of bettering the lot of the majority. Effectiveness of the system was measured by questions concerning perceived social inequalities (amount of social prejudice perceived; amount of racial prejudice perceived) and whether or not the individual could live a life of dignity and respect in the country.

Urban residence usually brings with it not only the need for a reorganization of roles and attitudes but also an introduction to a flexible class structure; that is, a structure in which the opportunity for mobility is perceived as potential, if not actual. While fine distinctions in the class structure are considered to follow diversification of the occupational structure through economic development, awareness of an urban class structure and one's place in it is part of the recognition of mobility potential. A question on social class identification is the customary measure, with a choice of response, usually of upper, middle, or lower. In the San Juan pilot study, most of the respondents identified themselves as middle class, though there

were some large differences in educational, occupational, and income levels among the housing areas. In social theory, objective indicators of class tend to be highly and positively correlated. However, Tumin reports, for Puerto Rico, that a recognition among the disadvantaged groups of their handicaps in the way of education, occupation, and income was accompanied by a strong tendency to reject those attributes as measures of personal worth. His explanation is that a sense of personal worth unrelated to objective achievement may represent a carry-over from traditional society and may also indicate the strain placed on social relations in societies undergoing rapid social change. At the same time, he points out, such a sense of personal worth may well operate toward maintaining stability among groups in the process of change.[41]

Where a greater differentiation may be needed, a category of "working class" might be included. It has been pointed out in connection with studies of class in the United States that giving only three choices may frequently force an identification with the middle class:

> As Centers has correctly pointed out, the inclusion of the alternative of "working class" was significant, and his findings have strongly contested those of other surveys that concluded that everyone in America believed he was "middle class." Other surveys in omitting "working class" as an alternative thereby left "middle class" as the only possible response for many. Both "upper" and "lower" class choices carried such negative connotations within American values that most people rejected both in favor of the "middle" class alternative.[42]

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[41]Melvin M. Tumin, with Arnold S. Feldman, Social Class and Social Change in Puerto Rico, Princeton, N.J.: Princeton University Press, 1961, pp. 452-453.

[42]Leonard Reissman, Class in American Society (Glencoe, Illinois: The Free Press, 1959), p. 138.

The principal concern is not, of course, with whether or not the perceived identification with a class corresponds with objective indicators such as occupation, education, or income but rather with the attitude toward a possible new role as member of a class and its implications for eventual adoption of the value system associated with that class.

With to respect to class values, measures of aspiration toward social success can be used. In the San Juan pilot study, the measures used (in addition to those discussed earlier) were related to respondent's views of his chances for success, his satisfaction with realistic goals (steady job, material comforts, and the like), and his view of qualities needed for success (discussed as part of the achievement motivation).

No society is completely lacking in opportunity for change in status, of course, but there are substantial differences in method. In traditional societies, for example, change in status from low to high may take place principally through some personal quality: great beauty, outstanding courage, exceptional ability, or the like. Attitudes toward some successful cultural or currently popular figures, therefore, may be revealing, as to whether they reflect admiration for achievement through own efforts, and so forth.[43] A perception of a difference between manual and nonmanual occupations as desirable ways of earning a living may be related to a feeling about class identification, and it is also a part of aspirations for success. The measure here is a preference for nonmanual occupations over manual ones, other things such as salary being equal.

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43 See studies in Urbanization in Latin America, op.cit.

Levels of social integation can be, and usually are, measured objectively through the manner in which the individual relates himself to an urban society; that is, how he performs his roles in the groups with which he is associated and what groups he is associated with.

Study of the family unit in the assimilation process in the San Juan study was confined to type of family, its stability, and inter-relationships within the family. All of these features are related to the adaptability of the family to urban living rather than being a complete design for a study of family life in a developing urban society. The family is an uniquely individual unit. The society may formulate guidelines, enforce regulations, or place certain obligations on it, but the manner in which its prescriptions are met is usually left to the family, or, specifically, to the parents. Parents, in general, tend to meet family obligations in accordance with their own training, perceived lacks in it from their experience, or evaluations of characteristics or behavior they see as essential for success. Attitudes and behavior within the family unit, therefore, are highly significant for both family and social stability.

The reference group is usually a standardized model based on observed urban families in the developed countries. There is some evidence from previous research that with the move to the city or continued urban residence a similar pattern tends to develop in the less advanced societies.[44] A study of change in family life under urban conditions

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[44]Gino Germani, "An inquiry into..." in Hauser, Urbanization in Latin America, op.cit.

would, of course, require comparison with a rural model based on observed characteristics in the places of origin. Some characteristics described as urban for instance, such as nuclear family, may also be typical of rural areas. Characteristics of the model urban-type family are: nuclear family, two-parent households, legal marriage, and infrequency of more than one union by either partner.[45]

The above are more or less objective questions related to stability. The internal organization of the family also has to be explored to obtain a more complete picture. This aspect takes in relations between husbands and wives, relations between parents and children, and relations with other family members. The measures used in the San Juan pilot study were, for the first aspect, decision-making dominance (as reported by both husbands and wives); for the second aspect, types of parental discipline, as reported by husbands (and fathers); and fathers' aspirations for their children; for the third, husband's evaluation of relations with family members outside the household. Data for intergenerational comparisons were obtained by asking husbands, fathers, and sons about decision-making and administration of parental discipline in their fathers' families. The measures, as indicated earlier, are not intended to explore family relationships in depth. The basic premise underlying the measures is that in an urban setting the family unit acquires (or develops) [46] sufficient flexibility to resolve its crises, and real

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[45] The urban-type family also usually has a relatively small number of children. This aspect is discussed in Section III along with some implications for housing of family stability.

[46] Evidence from anthropological studies indicate that "urban" characteristics may be found in rural areas, particularly where economic change is taking place. See Julian H. Steward, et al., The People of Puerto Rico: A Study in Social Anthropology, Urbana, Ill.: University of Illinois Press, 1956.

or potential conflicts (which in a family may be frequent occurrences) without disruption of the unit.

Decision-making dominance typifies the family as authoritarian or permissive. How parental discipline is exercised is another measure of authoritarianism vs. modernism in the family. In the flexible family, parents are in agreement on disciplinary practices, usually divide the exercise of discipline according to seriousness of the offense; rewards and punishments are usually applied on basis of a rational system equitably to all the children. Reasons are customarily given for demands on children, are understand ble to them, and apply equitably; children are frequently taken into the decision-making process, especially with respect to controls placed over their activities, and children feel free to discuss their problems with one or both parents.

Aspirations for children have some important implications as evidence of internalization of urban attitudes. Measures of such aspirations frequently used are whether or not parents (or husbands and fathers only) wish their children to have things better than they did and whether or not they perceive education for children as necessary for them to attain success and higher status than parents. Most parents can be expected to wish better lives for their children than their own were, or, at the least, that they will have lives as good as theirs were. Recognition that children should have higher education and will probably (or should) have higher achievement than parents, especially father's, has a number of implications. For the family unit, higher status for children indicates acceptance of a family structure based on love and respect between parents and children rather than on ascriptive symbols

of age and higher status of father.[47] It also implies acceptance of a continuance of a nuclear family pattern, with children encouraged to leave home[48] and family unity maintained on basis of harmonious relations built up in previous years rather than on propinquity of residence and symbols of authority. In housing, for example, where choice lies between better housing and education for children, the latter may well be the choice selected. While such a value system may be less in evidence among a low-income population, its importance for housing alone makes it a necessary item in a housing study.

Relations with family members outside the household reinforce the general theme of harmonious relationships within a family; that is, the ability to maintain harmonious relations in contacts outside the nuclear unit.

In countries where an organized religion has been or is part of the power structure, the place of religion in the assimilation process may be ambiguous. The church is one of the primary groups through which the individual relates himself to the social structure and it plays . .

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[47] Social Class and Social Change in Puerto Rico, op.cit.

[48] A hypothesis that has been made is whether or not, under conditions of improved living, migrants and ex-migrants may not tend to follow the extended-family pattern of living as demonstrated by their own traditional societies. See The Study of Urbanization, op.cit., p. 237. Conditions of migration make a break with older family members almost a necessity; desire for children to remain in or near the parental home may indicate such a trend.

sometimes a significant role in the socialization of children. Religion can be a source of stress to the individual where its teachings with respect to roles, attitudes, and behavior are at variance with experiences in the urban world or his perception of what is needed for success. Where the church has reconciled its doctrine sufficiently so that its teachings tend to support (or at least not conflict with) other influences in urbanization, it is likely to be a strong mechanism, under certain conditions, for integration (that is, social change). In large part, the position of the church in this respect seems to depend on the manner in which church-state conflicts have been resolved.[49] In most Latin American countries, though Protestantism has increased, the Roman Catholic religion usually is the predominant religion. It may, therefore, be an influential force for modernization or a strong reinforcement of tradition, or even irrelevant, depending largely on how far secularization has advanced in a particular country or locality. There is some possibility, also, that its influence may be stronger in urban areas, where churches and churchmen are usually more easily accessible.

Of course, the influence of religion, like influences of other social organizations, requires active participation. Church membership is an indicator of the presence of an influence. More important measures of commitment to religion are frequency of attendance at church services,

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[49]Where traditional power groups, including religious ones, were divested of power but integrated into the evolving social order, religion did not become a source of conflict. Where not so integrated, religious issues tend to reinforce other forces in social cleavage rather than conciliation. See discussion in Lipset, "Some Social Requisites of Democracy," in Polsby, Dentler, and Smith, op.cit., pp. 541-568.

activity in church-related affairs, membership and offices held or responsibilities in church-affiliated organizations. These measures may also be supplemented by others, such as pride in one's religion and frequency of praying or other acts of devotion during the week.

The principal interest groups that provide links with the social structure are voluntary organizations, both formal and informal. Link in this context (that is, concern with a low-income group in a housing study) means affiliation with an organization or association that gives the individual a range of contacts beyond those of the primary groups of family and kinship, neighborhood, work, friendship, or religion. In theory, experience with an organized group provides the members with the opportunity for interaction in a social setting with other people who are not necessarily of the same family, neighborhood, or class, tends to broaden their perspectives, and gives them experience with decision-making in the organization, as observer, and possibly an opportunity to participate in the decision-making process. Sufficient background information should be available about the organizations so that they can be evaluated on basis of type of influence exerted, as urban-oriented, rural-oriented (that is, strong emphasis on maintenance of cultural ties with a given locality, and so forth), or "transitional," (that is, offer support in a new setting to newcomers but have an urban orientation). The subjects considered are, usually: type of organization, number of organizations, and level of participation, that is, frequency of attending meetings, taking part in the work of the organization, offices held, and so forth.

low-income population may be small. Even aside from availability of organizations, reluctance to join may be encountered in low-cost housing areas. In the Buenos Aires study, Germani found extensive membership and active participation in organizations among the city-born, somewhat less among earlier migrants, and least of all among the recent migrants in the villas miserias.

> They may be members of trade unions and in some cases mutual societies--though they do not seem to use the latter. There may possibly have been some discrimination against recent arrivals (villa dwellers) at some clubs, but it is also known that other institutions have applied no such measures or have even sought to attract the migrants in some way. Furthermore the Development Centre has had, and still has, to overcome serious difficulties in inducing the inhabitants of the villa to join in organized activities in any capacity.[50]

In a developing country, an important question in a housing study is whether social participation (here defined as informal participation with people from outside the immediate household) secludes the migrants from the urban society or whether he enjoys a broad range of social contacts through friends made at work, outside the neighborhood or within it, as well as in more formal organizations. One handicap to assimilation that the low-income population has to overcome is the type of neighborhood in which they live. This is not merely the generally poor environment of some slum areas, although that in itself may inhibit residents from seeking social contacts either within or outside the neighborhood. Some neighborhoods may act as enclaves and keep their inhabitants from other urban contacts. Such an organization of a

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[50]Gino Germani, "An Inquiry..." in Urbanization in Latin America, op.cit. p. 225.

neighborhood aids in the adjustment of migrants, particularly where there are ethnic or language or other overt barriers, and mitigates the disorganizing effects of the changeover to urban life among migrants of different levels of urban experience. However,

> the above-mentioned mechanisms, which facilitate the adjustment of the migrant to the city, do not involve their assimilation to the urban culture. In fact, they may perpetuate quasi-rural patterns, not only in the migrants, but in their descendants as well. The adaptation arising in such conditions maintains the marginality of this sector of the population. It originates a subculture peculiar to the most deprived groups....The questions...remain...Is this a transitional adaptation, which in time will facilitate the rise of a modern industrial proletariat? Or could it persist as a barrier, even under the impact of economic development?[51]

On the other hand, families isolated in some slum areas have shown considerable disorganization, and their situation is compounded by the housing and environmental conditions of the slum residence. Some of the disorganization may have been transferred to the city with the migrant families. In other cases, existing problems may have been worsened or new ones created.[52] Where there is a tendency for recent migrants to move to areas where earlier migrants from the same place of origin live, much of their social participation, is likely to be with people of the same class, same work, and similar background. In other words, assuming a similar degree of urban inexperience among the group,

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[51]Gino Germani, "The Concept of Social Integration," in The Urban Explosion in Latin America, op.cit., pp. 179-180.

[52]Gino Germani, "An Inquiry....." in Hauser, Urbanization in Latin America.

or at best only a minority at a high level of assimilation, much social participation, even if it does not reinforce traditional patterns and attitudes, may not result in any broadening of horizons or changes in attitudes or behavior. An important part of a study designed to search out ways of improving housing, therefore, is consideration of types of social contacts being fostered, the importance of different groups, the types of group activities engaged in, location of friends, frequency of contacts, and how much and what type of probable influence.

Some precise information is seriously needed in order to distinguish between the disorganized and deteriorating slums and the progressive slum areas which are acting as "Vehicles of Social Change." 53

While voluntary associations provide links with the social system and are the important factors in assimilation, informal associations and unorganized social life also provide measures of contacts with the larger society. Usual measures of this type of participation are: number of friends and relatives with whom respondents have contact; frequency of visiting friend or having friend visit; residence of close friends and relatives (rural, within neighborhood, or specific address where outside the neighborhood), as reported by both husbands and wives (since in developing countries especially women are likely to be considerably more restricted in social contacts, and particularly when living in slum neighborhoods). The range of contacts among men in the sample can be explored more fully than that of the women, by questions

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53See John C. Turner, "Housing Priorities, Settlement Patterns, and Urban Development in Modernizing Countries," Journal of the American Institute of Planners, Vol. 34, No. 6 (November, 1968), pp. 354-363.

on occupation of friends, and extent of socializing, as, for example, celebrating holidays or other events with friends. Another measure may be used, depending on circumstances, that of "Most trusted friend" (or relative), the one to whom they would turn for help or advice on problems.

Another aspect of social participation is that of spontaneously formed organizations. The type of organization referred to here is the one with purely social or recreational aspects and is relatively permanent. In Buenos Aires, for example, Germani found that many recreational associations to which most city-born belonged had been formed by the group, who also were active in them. While they are probably considerably less evident in slums, their existence in some cities is important, since it represents recognition of a way out of the dilemma of isolation and willingness to join with others for a desired goal.

Attitudes underlying willingness toward social participation that should be included in the study are: extent of trust in others, how personal conflicts might best be resolved, and optimism-pessimism as against fatalism. Without some confidence in others, interaction in an urban society may be seriously limited. Trust in this context should not be confused with a blind faith in an environment where disillusionment may be frequent. It is an awareness that, in the context of urban interaction (impersonal relationships), other people more often than not can be trusted to fulfill their part of the exchange. Measures of conflict resolution are how conflicts or disagreements with friends should preferably be settled. Respondents can be asked whether they would choose to disagree with a friend if the disagreement meant losing the friendship and, where differences could not be avoided, if frank and open discussion would be the preferred way to resolve them.

An attitude of passivity is considered to be the attitude engendered by social orders in which the individual at lower levels perceives no or little opportunity to influence events and sees himself as a passive object of powerful forces he cannot control.

Sources of stress with relation to social participation should be explored, at least to a limited extent. In the San Juan pilot study, two measures of stress were used. One related to a source of stress in the over-all society created by perceived conflicts in ideologies; specifically, respondents were asked whether or not they thought it possible to be a good citizen of Puerto Rico and at the same time a good citizen of the United States. The other related to respondent's perception of some social changes: whether or not divorce should be permitted and whether or not changes were taking place in the younger generation's attitudes and values and if such changes were for the better.

Political assimilation. A view of the political system as legitimate and effective has considerable relevance for housing surveys related to a low-income population. One reason for this is that housing and neighborhood and related issues can become sources of controversy. Plans for clearance of particular slums, for example, can stimulate organized (or disorganized) protest. Another example is the potential for resistance to some proposed solutions to the problem. Sources of conflict also may arise in areas that impinge directly on housing (employment practices, wages, and so forth), and other examples could be cited. As with the economic and social systems, conflict of interests are less important than whether or not the conflicts are viewed as irreconcilable.

The major concern in studying evaluation of the political system is, of course, not the evaluation or merits of any given political system but, rather, is political behavior and attitudes in an urban setting. Political systems are evaluated by the same characteristics as the economic and social systems: resolution of conflict through accommodation of interests; equitable distribution of benefits by fair rules and practices; and the possibility (whether actual or not) of exercising influence on the system. It cannot be stated categorically that in every country and for all migrants the attitudes revealed represent a change through urbanization, since political actions have perceivable effects throughout a nation.

Measures of evaluation of the political structures that were used in the San Juan pilot study were related to level of knowledge and perceived effect of government actions on the welfare of the nation and on their own lives.

The minimum measure of participation in the political process is, of course, having voted in the last previous election, where voting is not compulsory (and where it has not been suspended). Voting behavior may be, in some cases, compelled because of hidden pressures. A second, and better, measure is affiliation with a political party. Affilitions with other organizations voluntary and informal and extent of participation, are measures as well, since such group affiliations frequently can become channels for political action if need arises and, at the least, provide experience that is useful in understanding

political principles.[54] More qualitative measures of attitudes toward political proccesses are: whether or not respondents feel that (1) their vote is important as a way of influencing legislation; (2) party leaders would discuss problems and issues with them; and (3) they can discuss issues openly with friends and relatives.

Measures of attitudes toward the political system as legitimate and effective in terms of the respondents' own lives that were used in San Juan were evaluations of features of the political process, as follows: (1) the government as implementing legislation in accordance with the provisions of the constitution; (2) the courts and law-enforcement agencies as acting justly; (3) the opposition party as a source of irreconcilable conflict; (4) threats to the system as coming from within the system or from outside forces; (5) the communication media as reliable sources of political information; (6) the police and military as protective agencies rather than motivated by political ambitions; (7) type of influence exerted by political ideologies other than the national one; (8) intelligent use of the vote by the majority of the people; (9) expectation of just treatment from all branches of government; (10) controversial issues, as, for example, in San Juan, United-States-Puerto-Rico relations, as threats to the system.

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[54]The rationale for all the political measures is set forth and discussed in Almond and Verba, The Civic Culture, op.cit. See in particular Chapters IX, X, and XI on the interrelatedness of social participation and political participation, with particular reference to membership in voluntary organizations, informal groups, and being taken into the decision-making process at home and at work.

Other measures of the political system as legitimate were attitudes of respondents toward: (1) citizenship; that is, whether or not proud of being a citizen of the country and what it stood for; and(2) traditional national symbols, national holidays, and national culture heroes. The latter question included some nonpolitical figures as well as political ones.

The effectiveness of the system was measured by respondents' evaluations of the government and judiciary, including law-enforcement agencies, as responsive to the needs and desires of citizens; extent of corruption perceived in public life; intentions of the government (whether or not thought to be realized) to improve conditions; specific actions of the government as in error, and whether the action of the government/on a specific issue was criticized or the entire system indicted.

Use of the mass media is an important measure of social as well as political participation. Communications not only keep the population informed about national and local leaders, issues, and the like but also act as socializing agents directly, by spreading information about a variety of social practices. Studies made in Latin America indicate a high degree of exposure to the public press and radio.[55] This finding was typical of San Juan also, and in the latter city, outside the slums and public housing, there was considerable exposure to television as well. Questions on ownership and frequency of use of radios and television sets and extent of newspaper reading are standard subjects in studies of low-income populations.

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55 See studies in Urbanization in Latin America, op.cit.

SECTION VI. THE HOUSING PROBLEM

One primary objective related to economic development in the advancing nations of Latin America is the provision of a satisfactory level of housing for their urban populations.[1] The housing level in a urban area is generally considered satisfactory, first, when nearly all of its population has housing which meets health and safety criteria normally applicable in urban areas, provides access to necessary community institutions, and is situated in an environment favorable to the conduct of normal family life; and, second, when the proportion of the urban population living under less favorable conditions is declining at a relatively rapid rate.

The urban housing problem in Latin American countries will only be sketched in briefly here. The general urban housing situation has been well analyzed in the literature as also have individual housing situations of many of the major cities. Much has been written about the large areas of improvised housing in the cities and along their peripheries and of the unsafe and unsanitary living conditions in them. Of particular concern to municipalities are the scope of these areas and their increasing size and number. Most cities do not have the housing or service-

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[1] Another primary objective is, of course, improvement of rural housing and of rural areas in general.

facility networks on the scale needed to counter or check the excessive growth of the slum areas. The task of providing housing and services is further compounded by the magnitude of the population with low incomes and its fairly constant rate of increase as a result of internal migration and high urban birthrates. Frequently, also, the slums grew up wherever vacant land was found, or could be taken over, and the resultant haphazard pattern of urban growth is a serious obstacle to improving the situation. Lack of land, resources, and institutions are very often further hindrances to action. At the same time, public policies are needed, not only to raise the level of housing for the thousands of families living in the slum areas (without substantially increasing their housing costs) but also to prevent further deterioration of the urban situation under the impact of continued and rapid population growth.

Three issues seem to be crucial for policy-making on housing. The first is the level of housing that can be set as attainable by a substantial proportion of the urban population with incomes lower than, say, the urban average. The second is selecting priorities in order to concentrate the resources available on supplying the enormous quantity of housing that is required in a manner which will bring the most substantial improvement in the urban housing situation at relatively rapid rates. The third is to place the activities selected to improve housing within the larger urban context in such a manner that orderly urban expansion will be fostered.

It can be seen that the issues stem from the nature of housing. It is well-known that housing in urban areas of necessity has to provide a variety of services as well as shelter and that the cost of housing and the related services represents a high commitment of resources. Further, the physical structures--houses, schools, streets, and the urban service-facility network--are likely to be relatively permanent fixtures of their locations. The problem is, consequently, the selection of a realistic satisfactory level of housing that can be attained relatively soon within current resources and which, at the same time, will provide the basis for later improvement, as and when standards of housing rise with rising standards of living.

Much more empirical data than are currently available are needed by decision-makers in government and the building industry for the development of effective housing policies. The far-reaching nature of decisions about urban housing makes it imperative that they be made on the basis of a complete understanding of the housing situation. Some important aspects about which little is known are, first, the manner in which the existing housing supply is being used by the occupants in terms of their needs and resources. A second is the dynamics of change, if any, operating among the low-income population that may change their level of housing, and a third is another dynamic element, the relationship between the selected population and the urban society. All of these aspects relate to basic policy questions on standards, who should build

the houses, where they should be built, what kind of government intervention is likely to be most effective, and where the houses can best be fitted into the most functional spatial arrangement of the city.[2]

The research design proposed in this report is intended to be adaptable to a wide variety of situations and to supply the raw material from which answers to specific and general questions on housing and housing policies can be determined. It is not being advanced as a flawless instrument. Rather, theory and methodology are presented in the full realization of the limitations of currently available techniques and present knowledge. Insofar as possible, concepts, definitions, and classifications accepted as standard for international use have been set forth, with the proviso that, where national practices differ, national requirements from the data take precedence. Some of the indicators selected and much of the detail on some topics will decline in importance as levels of housing improve. It is confidently expected that an ancillary product of housing research based on the proposed design will be an accumulation of empirical data on the basis of which better theoretical orientations will be developed and methodology made more precise.

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[2]Some of these policy considerations are suggested by Z. Pioro, "Research on Urban Plant and Administration," in Philip M. Hauser, ed., Handbook for Social Research in Urban Areas, Paris: UNESCO, 1967, p. 196.

Types of neighborhood areas form the basis for the design of the proposed research. To study them, the design brings together some major topics empirically or theoretically determined to be significant for housing and urban policy. Some purposes of the topics may be summarized as follows:

1. Characteristics of the housing.

   An important characteristic of housing is its quality. A quantitative Index of Quality has been developed which can discriminate between housing at different levels of quality, including housing where only narrow differences in quality exist. The Index is in three parts, each of which measures a specific component of housing quality. It is designed for use in sample surveys and other types of data collection on housing, but may be used independently to measure housing quality.

2. Characteristics of the population.

   Analysis in terms of certain socioeconomic and demograhic characteristics of occupants provides data on how the housing is currently being used, its satisfactoriness in relation to needs, and helps to identify key problem areas at different levels of family housing.

3. Attitudes and aspirations of the population.

   Housing choices and the potential of the low-income population have to be assessed in terms of their attitudes and aspirations since their present situations seldom reflect choices freely made among a number of options.

4. Improvement of housing.

   Actions, together with aspirations and intentions, to improve housing provide, among other things, much needed data for the definition of policies of housing assistance, as well as for over-all urban planning.

5. Assimilation and Mobility

   The section is introduced by a discussion of some measures of migration. Analysis of assimilation and migration serves to define the place of selected populations in the urban society and to identify key channels through which they may be moving into the urban milieu. The connotations are important for urban planning as well as for the provision of housing.

Since the housing conditions of the low-income population are only one part of the housing situation in urban areas, the findings of the sample survey will need to be evaluated in the light of certain objective background information related to the provision of urban housing. Important among these are: (1) the historical

and present legal factors, such as land-use policies and zoning regulations, that have determined the course of home building in the city, and their effect on housing conditions; (2) the organization and functioning of the building industry and of administrative housing authorities; (3) inspection ordinances and the assignment of responsibilities related to them; (4) financing mechanisms and adjustments that may be possible in regulations concerning them; (5) building codes for the construction, maintenance, supervision, and financing of construction, or, if no systematic code exists, the ordinances that regulate construction.[3]

Data on characteristics of the housing and of the population are, or will be, available in national censuses of housing and population. The urban housing situation in Latin America, further, has been the subject of a number of broad studies, surveys, and estimates, and much general information is undoubtedly available for many cities. It seems clear, however, from the types of questions that must be asked of the data in order to understand an urban housing situation that broad, general surveys lack the precision required for the analysis. Other advantages of sample surveys are that more experienced interviewers can be utilized and trained more intensively and the results of the study may be made available relatively rapidly. In addition, of course, census surveys are made at infrequent intervals and are not designed to provide current data, while other types of data collection are most often

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[3] Ibid., pp. 196-198.

one-time surveys for some specific purpose.

Data may also be available from anthropological studies, studies of internal migration, or of one or another aspect of living conditions or social change in specific housing areas, such as slums, public housing, renovated neighborhoods, or the like. All such studies provide valuable insights which should be utilized as much as possible in adapting the proposed design to an urban area. Where housing is concerned, however, such surveys usually suffer from serious limitations. Usually, housing, if it is considered, is a background feature rather than the central theme. More importantly, however, from the data provided it is not possible to analyze in depth the situation of the more successful of the low-income population--those who have improved their life situation and, along with it, their housing. Only one relatively static opportunity level is likely to be presented; aspirations or even definite plans cannot be evaluated in terms of the choices available, and housing cannot be seen in the perspective of the urban setting.

The findings of a simple survey will not, of themselves, provide solutions to the housing problems of municipalities. What they provide is a wealth of basic data from which answers to a wide variety of housing questions can be derived--including the perennial question of how best to use limited resources to bring about substantial and continuing improvement in an urban housing situation.

APPENDIX I. DEVELOPMENT OF AN INDEX OF HOUSING QUALITY

of a Quantitative Index

By: Alvin L. Jacobson, Earl W. Morris, and W. Stuart Ritter

The measurement of housing quality has only recently received the attention it deserves from Census officials, public authorities, planning officials, and academicians. Within the last thirty years, three distinctly different procedures have been suggested: (1) Real property surveys, (2) Census procedures, and (3) the American Public Health Association Method.[1] Each of these measures differs somewhat from the others in purpose, content, and methodology.

The first technique developed for systematic application was the Real Property Survey.[2] The RPS procedure was developed in 1935 by federal agencies for general use in local housing surveys as well as in work relief projects. Until then, local housing conditions had been assessed by purely local surveys.[3]

The content of the RPS measure closely parallels information contained in later surveys by the Bureau of the Census. Items that were included dealt with the type of structure, tenure, shelter or rental value, size of household, income, occupancy, and quality of facilities (that is, availability of a toilet, water and electricity in the house, fuel used for cooking, and type of heating). The Real Property Surveys gave public authorities their first comparative look at the American housing situation. Unfortunately, the method was seriously handicapped by administration through local agencies and the quality of reports varied enormously in different localities. The assessment of housing quality was obtained through a subjective evaluation by the enumerator. The Philadelphia study, for example, defined housing conditions as (1) good, (2) in need of minor repairs,

(3) in need of major repairs, (4) unfit for use, and (5) under construction. [4]

In the 1940 Census of Housing the first efforts were made to obtain housing information for the nation as a whole. Each dwelling unit included in the enumeration was examined with respect to twenty-eight individual items. Information was collected on housing quality and physical facilities as well as descriptive material, household composition and so forth, related to the housing unit. However, the data gathered were weighted more heavily in favor of descriptive items than housing quality items.

The 1950 Census of Housing improved on the 1940 Census by assigning an overall rating of housing quality to each dwelling unit. Crude classifications of (1) "dilapidated" and (2) "not dilapidated" were constructed on the basis of the enumerator's evaluation. This rating system was refined somewhat in the 1960 Census by using a trichotomous classificatory system, under which units were classified as "sound", "deteriorating", or "dilapidated" in condition.

The method used by Census officials to measure housing quality has been severely criticized. [5] Perhaps the most compelling argument against it is that it does not provide a cumulative score whereby distinctions can be made on an objective basis. For the 1960 Census, enumerators were given a common training program, after which they had to make subjective evaluations regarding over-all housing conditions while in the field. The reference manual given to the enumerator instructed him to:

> Judge the condition of housing units by your own

observation. Do not ask the respondent about the condition of his unit. Judge each unit by its own structural characteristics and do not be influenced by neighborhood, age of structure, or the race or color of the occupants... Illustrations of conditions are shown in Figures 19 and 35.[6]

Classification of dwelling units was made even more equivocal by allowing a "significant number" of intermediate defects to define a "dilapidated" house. Exactly what consituted a "significant number" was left to the discretion of the enumerator.

In 1957-58, Cornell University, in cooperation with the Bureau of the Census, attempted to refine the Census technique used in 1950 and to develop a flow diagram for use in applying it. This diagram, when completed, permitted the ranking of housing units as "good", "fair", or "poor". It has been used in a number of housing studies at Cornell, the most prominent being the study of housing needs of the aged.[7] The Cornell technique was not used in the 1960 Census since administering it on such a broad scale was not considered economically feasible.

The third technique that has been used in measuring housing quality is the American Public Health Association method. The APHA procedure was specifically designed to diagnose problem areas for social planners. Measurements were made with respect to a previously agreed-upon set of minimal health standards for housing conditions.

The content of the APHA technique appraised housing quality along two major dimensions: (1) dwelling unit score and (2) environmental score. In addition, it calculated an auxiliary basic deficiency score (one basic deficiency was sufficient to place a dwelling unit in the sub-standard category). Inclusion of environmental factors in the measurement

of housing quality produced a more comprehensive measure than either of the two procedures discussed previously.

The heart of the APHA method was a series of penalty scores that were assigned to degrees of deficiency on each of fifty-four items. In contrast to the Census procedures, enumerators did not perform the actual scoring in the field. They simply observed and recorded. The processing and scoring were performed by analysts after the survey was completed. The APHA technique appears to have two major deficiencies. First, the method used to establish penalty points on each item is questionable. The authors state that:

> The penalty value assigned to each deficiency has been determined by consultation with members of the committee (American Public Health) and others experienced in the fields of housing, public health, and city planning.[8]

Weighting of items for scale construction is difficult at best and is especially dubious where a synthesis of personal opinions becomes the basis for the assignment of weights. Other methods[9] exist for establishing such weights and these might have provided a sounder foundation for the development of such a scale.

The second and most important problem encountered in using this technique is that it is somewhat cumbersome and expensive to administer on a large scale. Even the shorter versions that have been suggested[10] seem unnecessarily detailed for those who are not concerned with diagnosing the physical and social ills of each particular dwelling unit.

In short, there does not now exist in the literature a statistically reliable and well tested quantitative measure of housing quality that can be effectively used in social science research.

Methodology

Criteria

The procedure utilized for constructing an index to measure housing quality in this research was guided by several criteria. These criteria were suggested by review of the literature, the broader aims of the research project within which this study took place,[11] and the generally acknowledged requirements of measurement theory.

Three basic criteria were employed:

1. Reliability. Will the same result be obtained upon repeated applications?
2. Validity. Does the index really measure what it purports to?
3. Parsimony. Does the index represent the simplest form it can take and still provide the maximum amount of information?[12]

Reliability is always a fundamental criterion of measurement techniques. The task essentially is to reduce the amount of error occurring upon repeated measures of the same observation. Problems of reliability seriously limited the application of the Real Property Survey and the Census method of investigating housing quality. Subtle distinctions were called for, especially among questions dealing with the state of repairs of the housing unit. In addition, judgments regarding over-all housing quality, as in the Census procedure, seemed extremely tenuous. What were needed were individual items and a general evaluative procedure which would eliminate ambiguity and thereby increase reliability.[13]

Validity is a second fundamental criterion in the construction of indexes. Though the act of measurement in general might be a relatively simple task, it is quite another thing to demonstrate that an operational

procedure results in a correct measure of what is to be evaluated. In this case, a complete test of validity would entail corroboration with similar measures of housing quality previously constructed. Such tests have not yet been made. However, relationships of housing quality with such criterion variables as (1) neighborhood types, (2) estimated value of the dwelling unit and (3) monthly rentals have been det rmined.

Parsimony is the third and final criterion that guided the research. Since one of the principal aims of the study was to develop an economical index for subsequent use in a larger survey, redundant items had to be eliminated. It was considered unnecessary to develop an exhaustive index of housing quality resembling the APHA method. The purpose was to measure the variable of housing quality and not to describe in detail the conditions of each household.

Survey design and sample

The study from which the findings were drawn was conducted during the summer of 1966 in San Juan, Puerto Rico. The sample was stratified according to four neighborhood types: (1) lower-middle class private housing, (2) lower class private housing, (3) slum housing, and (4) public housing. A total of 1,021 interviews was obtained with relatively complete housing data. There were approximately equal numbers of respondents in all areas.

Analytic techniques

Two separate techniques were employed in constructing the index of housing quality. The first technique was an item analysis of all the housing quality items in the questionnaire. By computing the correlation of each item with the over-all sum, it was possible to select the items which appeared to correlate highest with housing quality. These items were then used in building several indexes. The second technique was factor analysis.[14] This type of analysis differs from item analysis in that a number of factors or dimensions are generated from the data. It is similar to item analysis, however, in that "loadings" of each item on each of the principal factors are provided, and may be used to sift out the less important items.

Comparative results of two separate and distinct techniques were felt to offer a more substantial basis for construction of a measure of housing quality. The items that made up the final form of the index had to meet the criteria of both methods. Final selection, therefore, involved a dual screening process which, it is believed, lends greater credibility to the result.

Item analysis. The first step in performing an item analysis is to calculate an over-all score against which all items may be evaluated. This was done by simply summing across a reduced set[15] of twenty-six items which purportedly measured housing quality. (These are listed in Subappendix A.)

The following procedure was used to calculate a total cumulative score for each observation (each dwelling unit):

1. Each item response was considered in terms of its degree of favorability with respect to housing quality. This was a relatively easy task since most of the items simply indicated the presence or absence of a defect or in other instances the present of a given defect was divided into minor and major categories.[16]

2. Where the response category was more than trichotomous (for example, items 14-19), a decision was made on a breaking point in order to rate these in a similar fashion. The breaking points for these items are shown in Subappendix A.

3. Where data were missing on one or more items per observation, the average item score for that observation was calculated on the basis of the number of items for which there were data. The effect of such operational interdependency can only be negligible in this instance, for only 160 observations out of a total sample of 1021 had missing data. Moreover, among these 160 cases data were missing at most on two or three of the total twenty-six items. Two cases were noted where data were missing on four items of housing quality and in these two exceptions a score was assigned based on the average scale score for the particular neighborhood type from which these two observations were drawn.

Before proceeding directly with the item analysis, we wished to ascertain whether or not the index based on the average scores of the twenty-six items was indeed measuring housing quality. In order to make a first assessment of the validity of the index, the mean scores for each neighborhood type were compared. (See Table 1).[17] The outcome was in the expected direction, with the middle class homes and public housing

units having higher scores, and the lower class and slum areas having lower mean scores. Since Bartlett's test for homogeneity of variance proved significant, it was inappropriate to perform an analysis of variance among the respective means of the neighborhood types.[18] However, a simple "t" test of the differences between sample means yielded significant results at the .05 level for all paired comparisons, except middle class and public housing, but the effect of heterogeneity of variance is not known. Additional validation of this over-all index was supplied when comparisons were made with (1) respondent's estimate of the market value of his home (among home owners) and (2) reported monthly rent (among renters). The respective correlations of these variables with the total index score were .74 and .58, both of which were significant. It therefore seemed reasonable to conclude that the over-all average rating of housing quality items was a valid measure, and could be utilized in evaluating the relative importance of each item as it related to housing quality.

Table 1. Mean Scores by Neighborhood Types on Twenty-six Item Index of Housing Quality

Neighborhood type	Mean Score	S.D.
Middle Class	29.6	0.66
Lower Class	27.6	2.71
Slums	23.0	3.94
Public Housing	29.1	0.81

Having, at least partially, demonstrated the validity of the over-all index, the next step in the item analysis was to compute the correlations of each item with the over-all index score (Table 2, Column 27). Since the score is not operationally independent of the individual items, a small degree of positive correlation should exist. Nevertheless, the contribution of each individual item to the scale score is only a fraction of the final index value.[19] It is satisfying to note that eighteen of the twenty-six items have correlations of 0.50 or greater with the over-all index score. It was primarily on the basis of the strengh of these correlations that several different indexes were built to further reduce the total number of items needed to construct an index of housing quality.

Construction of indexes. The item analysis indicated that several items were highly correlated with the over-all index score. The next step was to see if, by constructing various sub-sets of the twenty-six items, we could produce a more compact index which would yield the same or nearly the same results.[20] If this proved to be possible, then the criterion of parsimony would be met.

Proceeding in a similar manner as described for the over-all index, the following subindexes were defined:

Index	Description	Item Numbers
(I)	(Over-all index)	(1-26)
II	Physical - structural index	2,8,9,20-26
III	Reduced Physical-structural index	2,8,20,21,24,25
IV	Service - facility index	12-17
V	Reduced Service - facility index	15-17
VI	Caretaking index	3,4,11
VII	Physical - service facility index	III & V above
VIII	Physical - service facility-caretaking index	VI & VII above

The seven sub-indexes were constructed on the basis of (1) the content of the items themselves, and (2) the number of items chosen to represent each particular component of housing quality. With respect to the first point, it was apparent that though all the items were tapping the under-lying variable of housing quality, there were nevertheless varying aspects of such a variable, measured differentially by the various items. A close examination of the list of items appearing in Subappendix A revealed the following three types of items: (a) physical-structural items (e.g. hole in the roof, walls, or floors,) (b) service-facility items (e.g. use electric light, have a private bath) and (c) caretaking items (e.g. rooms in good order, lot is clean).[21] In addition, it seemed reasonable to try to limit the total number of items measuring each of these three aspects of housing quality, while still striving to maintain maximum comprehensiveness. Following these suggestions, we proceeded to construct the seven indexes of housing quality listed above, and to select from that list the one which was felt to yield the most satisfying results.

Selection of an index. After constructing these indexes, the subsequent step was to select the one which had the highest correlation with Index I (the overall score); discriminated well among the four neighborhood types, and contained as few items as possible without loss of information. The likelihood of a single index ranking first on all of these criteria was slim, but it was possible to select the one which was near the top of each.

Table 3 shows the correlations of the seven sub-indexes with the overall score. Again, it is satisfying to note that each of the seven sub-indexes is correlated very strongly with the overall score of housing quality. Indexes II, III, VII, and VIII all have coefficients in excess

of 0.95, the highest being Index VIII with a coefficient of 0.98. On the basis of this criterion, the best choice would seem to be Index VIII by a slim margin.

Table 3. Matrix of Intercorrelations of the Seven Subindexes (Indexes II - VIII) and the overall Housing Index (I).

	I	II	III	IV	V	VI	VII	VIII
I	1.0							
II	.96	1.0						
III	.95	.98	1.0					
IV	.78	.64	.65	1.0				
V	.75	.62	.62	.93	1.0			
VI	.57	.46	.46	.43	.42	1.0		
VII	.97	.96	.97	.79	.79	.49	1.0	
VIII	.98	.94	.95	.79	.79	.64	.98	1.0

Beyond the simple statistical relationship of each of the indexes with the over-all score, we desired a measure which would reflect meaningful differences in housing quality. Similar to the analysis employed for Index I, we calculated the mean scores for <u>each</u> index by neighborhood type (Table 4). Of the seven indexes, two (IV and VIII) consistently showed significant ($P \leq .05$) differences between <u>all</u> pairs of sampling areas. This seems especially noteworthy in view of the fact that the twenty-six item over-<u>all</u> index was unable to indicate a statistically significant difference between middle class and public housing areas. Four of the other indexes

Table 4. Mean Scores by Neighborhood Types on Housing Quality Indexes II - VIII

	II		III		IV	
Neighborhood Type	Mean Score	S. D.	Mean Score	S. D.	Mean Score	S. D.
Middle Class	29.4	1.20	29.8	0.79	30.0	0.50
Lower Class	26.5	4.88	26.4	5.13	28.6	2.53
Public Housing	29.5	1.18	29.6	1.31	29.3	1.37
Slums	19.9	6.08	19.6	6.15	24.9	4.23

	V		VI		VII		VIII	
Neighborhood Type	Mean Score	S. D.	Mean Score	S. D.	Mean Score	S. D.	Mean Score	S.
Middle Class	30.0	0.37	28.8	2.86	29.8	0.58	29.6	0.7
Lower Class	28.0	3.99	26.7	3.81	26.9	4.08	26.9	3.3
Public Housing	29.7	1.35	26.9	3.30	29.6	0.98	28.9	1.1
Slums	22.7	5.74	24.7	3.49	20.6	5.02	21.6	4.2

also failed to show a difference between these two, while Index VI differentiated between all pairs except lower class and public housing. On the strengh of these results and the strong correlation coefficients, it would appear that our shorter versions of the over-all index are tapping the same variable (housing quality) and perhaps measuring its degree more sensitively.

Although the findings discussed above indicate that Index VIII is the most effective measure of housing quality, we must also ask if it is the most efficient. With respect to parsimony, each of the seven sub-indexes represents a substantial reduction from the original total of twenty-six items. Although Index VIII has the largest number of items, it still includes less than half of the original list. Furthermore, it is the only sub-index which taps all three aspects of housing quality, and therefore is the most comprehensive. Clearly, the number of items should not be reduced at the expense of an accurate reflection of the variable being tapped.

Index VIII is therefore the best of the indexes under consideration, as judged by (1) correlation with the over-all index, (2) discrimination among neighborhood types, and (3) parsimony and comprehensiveness of the measure. A detailed list of the items included in this index is provided in Subappendix B. As previously noted, a second technique was employed to confirm these results of the item-analysis procedure; a discussion of this analysis follows.

Factor Analysis.[22] Factor analysis is a general multivariate statistical technique used in determining the minimum number of independent measures that account for most of the variance in an original set of variables.[23]

It was felt that the major factors generated in a factor analysis should conceptually approximate the three aspects of housing quality noted earlier in the item analysis. By comparing the correlations of each item on the major factors and, in turn, testing for the relationship between Index VIII and these factors, it should be possible to either confirm or reject the initial decision that Index VIII was the best index of housing quality.

The program was set up to generate three major factors. It was particularly interesting to observe that the three factors, which explained 54 percent of the total variance, corresponded to the previous conceptual trichotomization of (1) physical-structure items, (2) service facility items, and (3) "degree of caretaking."[24] The third factor included only three items, all clearly related to caretaking: condition of furniture, order of the house, and cleanliness and order of the surrounding lot.

These three factors may be used to define the major dimensions by which the property-space of housing quality can be assessed. That is to say, a total evaluation of housing quality would then necessarily consider (1) physical quality, (2) service quality, and (3) caretaking quality. Combined measurement along each of these axes would thus provide an adequate and comprehensive picture of the state of the total housing condition.

In order to compare the results obtained by the item analysis with that of the factor analysis, the ten items having the highest correlations with the overall index score were compared with the ten items having the highest correlations with the major factor (physical quality). The two sets of ranks were almost identical, with only the 6th and 7th being interchanged, clearly indicating agreement between the two different methods. In fact, the first five items which were included in Index VIII would also have been included using the factor analytic technique.

by factor analysis would have produced essentially the same results,[25] it was next considered advisable to show that the same results would have been achieved in choosing the final index.

Table 5 shows the relationship between each of the three factors and the eight indexes of housing quality. The extremely high(.99) correlation between the physical quality factor and the overall score based on the twenty-six items (Index I) again points up the similarity of the two approaches. Comparing the strengh of the various sub-indexes with the physical quality factor, we find that Index VIII has the highest correlation (.97), which is also shared by Index II and Index VII. This finding is almost identical with the results noted earlier when the individual indexes and the overall score were compared. (See Table 3.) Index VIII also maintains itself as the best all-around measure of housing quality when it is compared with Indexes II and VII on the service quality and caretaking quality factors.

Table 5. Correlations Between Each of the Three Factors And the Eight Indexes of Housing Quality

Index	Physical Quality	Service Quality	Caretaking Quality
I	.99	.86	.89
II	.97	.74	.80
III	.96	.73	.80
IV	.72	.89	.69
V	.71	.79	.67
VI	.51	.48	.85
VII	.97	.81	.83
VIII	.97	.82	.91

Having developed a relatively valid and reliable index of housing quality through the application of two different techniques, it is appropriate to inquire whether this scale relates in a logical manner to other variables. A moderately high positive correlation of quality of housing with indices of social class is to be expected because of the relationship between class position and (1) the ability to pay for housing and (2) preference for quality housing, both of which are closely allied with socio-economic status.

This expectation is confirmed (See Table 6) in that correlation coefficients of about .40 were obtained between Index VIII and Family Income and the Education of the head of the household for all non-Public Housing respondents and for owners and renters separately. This provides a certain amount of implicit validation for our housing quality index. In addition, support is obtained for the choice of index VIII over the other alternatives. Index VIII has a higher correlation with income and education for the non-Public Housing sample than any of the other scales.

Table 6. Correlations of Housing Quality Index VIII with Income and Education

	Family Income	Education, Head of Household
Total	.44	.43
Owners	.46	.43
Renters	.41	.43

Note: Public Housing respondents omitted

Summary

A review of the literature suggested that no adequate measure of housing quality had been developed. The need for a single, quantifiable, and parsimonious measure of that variable was apparent. Using data collected in a large-scale survey of housing in San Juan, Puerto Rico, an effort was made to construct a measure of housing quality that met these criteria. Two separate statistical techniques were employed in evaluating the relative merits of seven indexes of housing quality. The results of both were identical. Both methods singled out one index (referred to as Index VIII)as a valid and parsimonious measure of housing quality.

As with all work of this nature, a great deal remains to be done. Several modifications are being undertaken. The reliability of this measure of housing quality remains to be determined. The application and utility of the measure to areas other than those from which the data were collected have still to be tested. Neverthless, it appears to the writers that for purposes of large scale, economical surveying of housing conditions or for use as a variable in social scientific analyses, one or more of the Indexes developed here are applicable and would give results essentially similar but at much lower cost than appraisal-type methods.

Footnotes

1. See, for example, Philadelphia Housing Authority, Real Property and Low Income Housing Surveys (Philadelphia: 1939); U.S. Bureau of the Census, Enumerators Reference Manual: 1960 Census of Population and Housing (Washington, D.C.: 1959); and American Public Health Association, An Appraisal Method for Measuring the Quality of Housing: A Yardstick for Health Officers, Housing Officials, and Planners (Washington, D.C.: 1945).

2. U.S. Works Progress Administration, Technique for a Real Property Survey (Washington, D.C.: 1935).

3. Allan A. Twichell, "Measuring the Quality of Housing in Planning for Urban Redevelopment," in Coleman Woodbury, ed., Urban Redevelopment: Problems and Practices (Chicago: 1953), pp. 36-37. Though somewhat outdated, this essay considers the two major measures now being used by housing authorities.

4. Philadelphia Housing Authority, op.cit., p. 147.

5. Twichell op. cit., pp. 21-25. It might be added that there are so many questions concerning the 1960 trichotomous classification that, it is reputed, the Advisory Committee to the 1970 U. S. Census of Housing is considering abandoning it.

6. Enumerators Reference Manual, op.cit., p.67

7. See "Measuring the Quality of Rural Housing" (Ithaca: Cornell University Housing Research Center, 1958, mimeo) and supplemental flow chatts. For the application of this technique, see Glenn H. Beyer, Economic Aspects of Housing for the Aged (Ithaca: 1961) and the questionnaire used in that survey.

8. American Public Health Association, op. cit.

9. See Allan L. Edwards, Techniques of Attitude Scale Construction (New York: 1957).

10. Twichell, op.cit., pp. 89-98.

11. Reference here is to the San Juan pilot study.

12. This is the least important of the three criteria and in general would only be invoked where two otherwise equivalent measures differed in complexity.

13. The advantages of the work reported here result from the analytic procedures utilized rather than from improved interviewer training, improved research instruments or the use of special field techniques.

14. William W. Cooley and Paul R. Lohnes, Multivariate Procedures for the Behavioral Sciences (New York: 1962), pp. 151-185. L. L. Thurstone, Multiple Factor Analysis: A Development and Expansion of the Vectors of the Mind (Chicago: 1947).

15. An original pool of 43 items related to housing was included in the study. These items were obtained from previous studies attempting to measure housing quality (especially the 1960 Census of Housing. Items were eliminated if (a) there were problems or ambiguities in coding (3 items), (b) the items taken by themselves did not directly and obviously tap housing quality (7 items) and (c) if items were logically inclusive within other items (7 items). Items in the latter category were combined with other items by means of a coding scheme which differentiates major and minor defects.

16. For the items having "major" and "minor" response categories, a value of "3" was assigned to an observation where no defect was indicated, a value of "2" was assigned where a "minor" defect was indicated, and a value of "1" was assigned where a "major" defect was indicated. For the items having a simple "yes" or "no" response, the question was first judged as to its relative "major" or "minor" importance, and then assigned scores of either "3" and "1" or "2" and "1". For example, if the interviewer answered "yes" to "substantial sagging or bulging of outside walls or roof," a score of "1" was assigned (major defect). However, if he answered "yes" to a broken window pane, a "2" was assigned, (minor defect). In this way we insured the operational integrity of meaningful empirical destinctions. A listing of the dechotomous items showing "minor" or "major" attributes appears in Appendix I. The range of the index was from 10-30 (achieved by averaging the response codes of the 26 items for each observation and multiplying by a constant, 10) with a high score reflecting relatively "better" housing quality. This procedure for restricting the range of the index from 10-30 was used to render meaningful comparisons with subsequent indexes to be constructed using a different number of items.

17. The computations for this table, as well as for the remaining tables in this report, were prepared with the use of the Cornell University Statistical Programs System (CUSTAT) at the Computing Center.

18. The relative lack of variance in the scores of the Public Housing and the Middle Class area, although in part due to a true uniformity of housing quality in these areas, is also due to the fact that items capable of fine distinctions at the upper levels of housing quality were not included. Another factor may have been the inability, perhaps due to inadequate training of the interviewer to make such fine distinctions.

19. The results reported here treated all items equally. More refined versions of a housing quality index may choose to weight items on the basis of statistical results and/or expert opinion. This step was considered, but felt to be premature for our purposes.

20. The strategy of forming various combinations of the items and then seeing which combination yielded the most favorable results seemed to be the optimal way of assuring selection of the most desirable index.

21. Empirical confirmation for this classification was supplied in the factor analytic results reported in a subsequent section of this paper.

22. The computer program utilized in this part of the analysis was FACTAN, a part of The Cornell Computing Center's library of statistical programs, with some special modifications for our purposes. The correlation of the items with the factors in Table 5 refers to factor scores for each observation, derived from factors rotated by varimax procedures.

23. Cooley and Lohnes, op. cit., p. 151

24. Labeling of Factors is an especially treacherous business where no a priori conceptualization has been forwarded. In this case we in fact did have some preconceived idea about the Factors that were generated, and the loadings of the individual items on the Factors tended to confirm this.

25. Among the facility items, all three of the items used in the item analyses would have been repeated using the correlations on the final factor as a standard. Similarly, all three caretaking items would have been included since they were the total set of such items.

Subappendix A. Items Included in the Over-all Index.

*1. Inadequate original construction or conversion: dirt floors (major).

1. Yes
3. No

2. Considerable wear on inside steps or floors (minor).

2. Yes
3. No.

3. Are the rooms in good order? (minor).

2. No
3. Yes

4. Is the furniture in good repair? (minor).

2. No
3. Yes

5. Substantial sagging or bulging of outside walls or roof (major).

1. Yes
3. No

6. Shaky or unsafe porch, steps or railing (minor).

2. Yes
3. No

7. Broken or missing window panes (minor).

2. Yes
3. No

8. Rotted or loose window frames (minor).

2. Yes
3. No

* Numbers correspond to actual values assigned in coding.

9. Deep wear on doorsill, door frames or outside steps (minor).

2. Yes
3. No

10. Badly rusted or partially missing gutters and downspouts (minor).

2. Yes
3. No

11. Is the lot clean and in good order? (minor)

2. No
3. Yes

12. Where do you get water?

1. Other
2. Pipes or wells outside.
3. Piped into house.

13. What type of lighting does unit have?

1. Other
3. Electric

14. What kind of fuel do you use for cooking?

1. Other
3. Electric or gas

15. What kind of refrigeration is used?

1. Other or none
3. Electric

16. What toilet facilities are available for this household?

1. Other
2. Flush toilet inside (shared) or outside.
3. Flush toilet inside, exclusive use.

17. What kind of bathing facilities are available for this household?

1. Other
2. Installed tub or shower inside (shared) or outside(Exclusive use)
3. Installed tub or shower inside, exclusive use.

18. Inadequate original construction or conversion: makeshift interior walls (major).

1. Yes
3. No

19. Inadequate original construction or conversion: makeshift exterior walls or roof (major).

1. Yes
3. No

20. Holes, open cracks, rotted, loose, or missing materials on inside walls.

1. Over a large area (major)
2. Over a small area (minor)
3. None

21. Holes, open cracks, rotted, loose, or missing materials on floors.

1. Over a large area (major)
2. Over a small area (minor)
3. None

22. Holes, open cracks, rotted, loose, or missing materials on ceilings.

1. Over a large area (major)
2. Over a small area (minor)
3. None

23. Substantial sagging of floors or walls.

1. Over a large area (major)
2. Over a small area (minor)
3. None

24. Holes, open cracks, rotted, loose or missing materials on foundation.

1. Over a large area (major)
2. Over a small area (minor)
3. None

25. Holes, open cracks, rotted, loose, or missing materials on outside walls.

1. Over a large area (major)
2. Over a small area (minor)
3. None

26. Holes, open cracks, rotted, loose, or missing materials on roof.

1. Over a large area (major)
2. Over a small area (minor)
3. None

Subappendix B. Items Included in Index VIII

(2) Considerable wear on inside steps or floors (minor)

2. yes
3. no

(3) Are the rooms in good order? (minor)

2. no
3. yes

(4) Is the furniture in good repair? (minor)

2. no
3. yes

(8) Rotted or loose window frames (minor)

2. yes
3. no

(11) Is the lot clean and in good order? (minor)

2. no
3. yes

(15) What kind of refrigeration is used?

1. Other or none
3. Electric

(16) What toilet facilities are available for this household?

1. Other
2. Flush toilet inside (shared) or outside
3. Flush toilet inside (exclusive use)

(17) What kind of bathing facilities are available for this household?

1. Other
2. Installed tub or shower inside (shared) or outside (exclusive use)
3. Installed tub or shower inside (exclusive use)

(20) Holes, open cracks, rotted, loose, or missing materials on inside walls.

1. Over a large area (major)
2. Over a small area (minor)
3. None

(21) Holes, open cracks, rotted, loose, or missing materials on floors.

1. Over a large area (major)
2. Over a small area (minor)
3. None

(24) Holes, open cracks, rotted, loose, or missing materials on foundation.

1. Over a large area (major)
2. Over a small area (minor)
3. None

(25) Holes, open cracks, rotted, loose, or missing materials on outside walls.

1. Over a large area (major)
2. Over a small area (minor)
3. None

APPENDIX II. ANALYTIC FRAMEWORK AND SELECTED MODEL QUESTIONNAIRE ITEMS

The theoretical and empirical phases of any research meet when the theoretical concepts are defined in terms of measures, indices, or observations which are to be made in order to detect a quantity of, or the presence of, the property thought to be represented by the concept. This Appendix, therefore, is an inventory of the concepts and measures utilized in the San Juan pilot study and proposed for use in housing-urbanization research for lower-income groups in developing countries.

The concepts dealt with in this report have been grouped under one of four broad classes of variables, although it will be seen that several of them also are classifiable under more than one heading. The three broad classes are: (1) Independent variables and Intervening or Test variables, (2) Dependent variables (Housing), and (3) Dependent variables (Urbanization).

I. INDEPENDENT VARIABLES

A. Neighborhood Types

1. Types
   a. Lower middle class established
   b. Lower class established
   c. Squatter slums
   d. Public Housing

2. General data: type of structure, number of stories, (single-family houses only), paying business in house or on lot.

3. Housing costs (original and operating)

   All respondents

   a. Own or rent property
      1. Owns the house and lot
      2. Rents the lot (what is the monthly rent for the lot?)
      3. Does not pay rent for the lot (does not own lot)
      4. Pays cash rent for the house
      5. Does not pay cash rent for the house

   All respondents

   b. Amounts paid monthly for utilities

   Owners only

   a. Market value of house; whether house bought or built; age of house; year property acquired; whether or not rooms or apartments rented out and how many of each; purchase price (or other original cost) of the house.

   b. How the present house was paid for

      The following questions are recommended, with redundancies, excessive detail, and local applicability to be determined in the pretest.

   All owners

      1. Is this house mortgaged at the present time?

Those who answer "Yes"

2. What was the purpose of the mortgage: (multiple response)
   To buy the house
   For home improvements; other housing purpose.
   General purpose, not housing

3. How is the mortgage being paid:
   Lump-sum
   How much is being paid regularly on interest and principal
   Amortized
   How much do you pay each month?

4. Term of mortgage
   What year was the mortgage taken out
   What year will the mortgage be paid off

5. Who holds the mortgage?
   (categories should be set up for type (not name) of agency or person.)

Those who answered "No" and current mortgagers except those who used mortgage to purchase the present house

6. Did you pay cash for this house or have a mortgage which you have paid off?

Those who paid cash

7. Did you find it necessary to borrow from anyone in order to have enough money to buy (or build) this house? From whom?

8. Have you ever borrowed money on this house? To improve the house or for some general purpose?

Those who have paid up a mortgage

9. About how long did it take to pay off the mortgage?

10. Who held the mortgage?

11. Have your ever borrowed money on this house for any other purpose?

All homeowners

12. Did you own or did you rent the last house you lived in--the house where you lived just before moving to this one?

    a. Owner of lot and house
    b. Rented the lot
    c. Did not pay rent for the lot
    d. Paid cash rent for the house
    e. Did not pay cash rent for the house

All renters (and non-owners who live in a house free of charge)

13. Amount of monthly rent; whether or not apartment or house is rented furnished;

Those who do not pay rent in cash

14. Relationship of owner of house (apartment) to head of household.

B. Housing Quality

1. Number of rooms
   Number of bedrooms
   Rooms, and which ones, shared daily with another family from outside the household
   Optional items: source of water for household use; type of sewerage; electric wiring; cooking fuel.

2. Items for Index of Quality (Interviewer's observation)
   See "Items Included in Index VIII" in Appendix.

3. Household Equipment
   (Items selected on basis of local conditions and in accordance with items in national surveys of levels of living.)

4. Purchases of household furnishings; cost of each, and whether cash or credit used.

5. Plans to buy household furnishings and which items; replacing wornout or outmoded equipment, or a first-time purchase.

C. Socioeconomic Characteristics

1. Family income from all sources

2. Education of head of household, spouse, and oldest son living at home

3. (Optional) Language spoken in home or in father's home

4. Employment situation of household head

   a. Labor-force participation (i.e., in or not in the labor force, or economically active-inactive)

   Those whose husbands were in the household and in the labor force:

   b. Employment status (works for self or others)
   c. Type of industry
   d. Usual number of hours worked per week
   e. Number of weeks worked during the past year

   Those whose husbands were living in the household but reported as not employed:

   f. Whether or not husband is retired, incapacitated, or temporarily unemployed
   g. Length of time since spouse has worked regularly.
   h. Principal type of work when he was working regularly

5. Occupation of household head whose husbands are living in the household and are in the labor force

   a. Principal type of work in present job (in sufficient detail to be classifiable into standard categories)
   b. Length of time on present job
   c. Secondary occupationof male head of household
      Type of work and number of hours a week so employed.

   Journey to Work (Optional)

   d. How long does it take you to get to and from work every day? (Husbands)
   e. Do you work within city limits or outside city?
   f. How do you get from your house to where you work?

6. Employment situation of sons and occupations of those who are currently employed.

7. Labor-force status of wives

   a. Whether or not employed regularly and receiving a salary at time of interview.
   b. Those who are employed: type of work; self employment; at home or away from home; number of hours worked per week; number of weeks worked during past year. (Optional): Length of time on present job and reasons

D. Demographic Characteristics

1. Age of wife and household head

2. Household composition
Number of normal residents in household, including those temporarily absent. For each: relationship to head of household; sex; date of birth; age at last birthday; marital status and year married; whether or not worked during past month.

3. Fertility
On the basis of an analysis of the data from the San Juan Pilot study, the following items are recommended for inclusion in a general housing sample survey:

   a. number of children ever born alive
   b. number of living children
   c. Expect to have more children or another child
   d. perception of effects of housing on having children and vice versa
   e. preferred family size

E. Social Class Identification

1. See Mobility Scale under "Economic, Social, and Political Attitudes."

2. In general, how would you compare your social position with that of the other people that live in this neighborhood? (same, higher, lower)

II. DEPENDENT VARIABLES: HOUSING AND NEIGHBORHOOD

A. Attitudes Toward the House

1. How well do you like the number of bedrooms in your house? (Much, satisfactory, very little).

2. If you could have your ideal house, how many bedrooms would you like to have? Why would you like to have this number of bedrooms?

Layout and Plan

3. Here we have a list of things about the house or the neighborhood that people usually think about. Even if it has nothing to do with your house or neighborhood, we would like to know how important each of the following is:

(Read choices and circle corresponding number, as follows: 1 Doesn't bother me 2 Bothers me a little 3 Bothers me more than a little 4 Bothers me quite a lot 5 Bothers me very much)

Not to have a place to keep the car
To have to get wet when getting out of the car to go into the house
To have to bring the groceries through the living room
That guests can see the garbage or milk bottles when entering the house
The fact that the wife is separated from the rest of the family while she is cooking
That odors from the kitchen go through the whole house
That unexpected visitors must see the family while they eat
That people that pass in the street can see inside the house
To have other members of the family around while getting dressed
To have to use the bathroom at the same time as other members of the family
To be able to see everything that happens in the street while being inside the house
The fact that the facade (front) of your house is the same as fronts of the other houses along the street
To have the adolescent children around when entertaining visitors
To have the small children's room next to yours

House

4. How does this present house compare with the one you lived in just before you moved to this one? (Better, worse, the same.) Why do you consider it (better, worse, the same)?

5. Did you select this present house because you liked the house or because you liked the neighborhood?

6. Which is more important to you, a good house or a good neighborhood? Why do you prefer....?

B. Attitudes toward the Location and Neighborhood
(See also: Attitudes toward the House and Residential Mobility)

1. How does this neighborhood appeal to you as a place to live? (Read choices.) Like it very much Like it a little Like it (satisfactory) Do not like it at all

Why do you ....?

2. Why have you not moved from this neighborhood? (Read choices. Multiple response)

Educational facilities for the children
Recreational facilities for the children
Shopping facilities
Transportation facilities
Close to place of work
Recreational facilities for adults
Little Traffic
Quiet neighborhood
Clean neighborhood
Agreeable neighbors
Low cost of living
Nearness to relatives
Owns the property
Like the house
Other _____(specify)

3. What do you consider the disadvantages of this neighborhood to be? (Multiple response. Reach each choice)

No schools nearby for children
No good schools nearby for children
No parks or playgrounds for children
Much drug addiction
Prostitution
Much delinquency
No stores
Very few stores
Poor transportation
Too far from work
Lack of recreation facilities for adults (parks, etc.)
Too much traffic
Too much noise
Bad odors

Disagreeable neighbors
Dirty neighborhood (much dust)
Bad environment
High cost of living
Everything is satisfactory
Other (specify) _____

4. In general, would you say that you had enough space around your house for: (Multiple resonse. Reach each item):

Good light and ventilation
Privacy from neighbors
Privacy from the street
Recreational activities (and room to store equipment)
Children's play (and place for equipment)
Storage for supplies such as ladders, tools, paint, etc.

C. Values Related to Housing

1. We would like to know something about how important your house is to you. I will read some sentences and you may indicate which alternative you prefer, from little to very much.

None	A Little	More than a little	Much	Very much
1	2	3	4	5

A house where all members of the family can spend their free time together
A neighborhood where my relatives can come to visit us
A house with sufficient space so that our children can live with us when they marry, if they want to
A house with enough space so that our parents can move in with us, if they want to.
A house of which I can be proud in front of my friends
A house that can help me (facilitate my social relations)
A house as good as my friends have
A neighborhood where my children's playmates will be of the appropriate social class (or so that my children may meet them)
What influence does your house have in the opinion that others (your friends, neighbors, acquaintances) have of you
Sometimes I think that owning your own house leaves one with very little money for other things
I want a house that I could make a profit from, if I sold it
I would only buy a house that would not be costly to maintain
I want the cheapest house possible (when buying it).
I have to live in a neighborhood where the other houses wouldn't depreciate the value of mine if I wanted to sell it
A well decorated and well furnished house makes life more pleasant
A garden with the house makes life more pleasant
I have to have a house that is pleasant to look at

D. Attitudes Toward Home Ownership

1. Would you rather live in a house or in an apartment?

2. Would you rather rent now, or own your own home?

   Why do you prefer to.....?

3. What do you think might happen to make you change your mind?

Present Renters who prefer to own:

4. Do you think it will be possible for you, if all goes well and you can find a place you want, to buy a home within the next year? (Certain, Possible, Impossible)

Those who are not Certain: (within the next five years? (Certain, Possible, Impossible)

5. Is your spouse also interested in (owning, renting)?

6. Have you ever discussed with your (spouse) the possibility of buying a house?

All Renters:

7. If you were to buy a house, how would you like to pay for it? (Read choices)

   cash, in full
   make a substantial down payment; make regular payments on mortgage (or loan) for only a few years
   Make a small down payment; pay off mortgage (or loan) by regular payments over a long period of time
   Buy lot and build house as income permits
   Have no desire to own

   Why do you prefer.....?

All Owners

8. Whose decision was it to buy (or build) this house? (Own, spouse, relative (specify), other)

9. How long do you think you would like to own this house? Why?

10. What would make you change your mind?

11. Have you recently considered selling this house and renting? Why did you consider (selling, not selling)?

12. What would make you seriously consider selling this house?

All Respondents

13. Under what circumstances would you say that it might be better to rent a house or apartment than to own one?

14. What do you think it might be possible for the (National, municipal government, housing authority, or official agency responsible for housing) to do to help people like you have the kind of housing you would like?

E. Attitudes Toward Public Housing

1. Do you think it is a good idea to build public housing? Why do you think this?

2. Why do you think the government wants to eliminate the slums?

3. What is a slum?

4. Do you know where there are some?

5. Have you ever lived in public housing?

Those who have never lived in public housing

6. Would you be interested in having an apartment or a house in public housing, now or in the future?

7. Under what conditions would you move to public housing?

8. Do you know anyone who lives in public housing? In which one?

9. Have you ever visited anyone who was living in public housing? In which one?

10. How do you think that families are selected to live in public housing?

According to where they are living
According to income
According to number of children
By pull or family connections
According to whether there is a soldier or veteran in the family

11. How were you informed about public housing?

    Press or radio
    Conversations with friends or relatives
    Making inquiries of (responsible authority)

12. We are interested in knowing if you have heard about the rules and restrictions in public housing. I'm going to read you a list--you tell me if you have or have not heard about it and indicate to me if this bothers you or not.

	Heard		Bothers	
	Yes	No	Yes	No
Visitors cannot spend the night				
Apartment must be kept clean				
Project administrators inspect many homes				
Have to turn off the lights at a certain hour				
Have to paint the houses at own expense				
Rent increases if family income increases				
Can't hammer nails into the walls				
Can't have pets				
One is very limited with respect to garbage				
Can't have a business in the house				

13. Do you know if public housing projects have:

    Schools (nursery schools)
    Recreation areas for children
    Recreation areas for adults
    Trucks to collect garbage
    Health centers
    Recreation parks

14. What do you think happens if you can't pay the rent in public housing?

F. Residential (Intra-urban) Mobility
(See also: Attitudes toward house, location and neighborhood, and home ownership).

Past residential mobility

1. In how many houses have you lived in (this city), within the last five years?

2. What was your last previous address? (Street, number, barrio or section)

3. How long had you lived in that house?

4. Who made the final decision to move to this present house, where you are now living? (Self, spouse, relative (specify) other)

5. What kind of housing were you looking for when you were thinking of moving?

6. When you were looking for a house, did you find a house you liked better but which you were not able to take? Where was this house situated? Why did you like it better?

7. Did some relative live in this present neighborhood before you moved here? Which relative?

8. How did you find the house you are now living in?
   Through relatives
   Through friends
   Read about it in newspaper
   Previous visit
   Other

9. What were your principal reasons for moving from your previous residence?

   Housing reasons: poor physical condition
   Housing reasons: wanted a better home
   Housing reasons: wanted a better social atmosphere (neighborhood)
   Economic reasons: better opportunity at work
   Family reasons: wanted to be near parents (children)
   Other: specify

10. Why didn't you move from your previous residence sooner?

    Lack of money
    Family reasons
    School reasons
    Job reasons
    Reasons of friendship
    Other (specify)

11. How long did you expect to stay when you moved to this house?

Prospective residential mobility

12. How long have you lived in this present house?

13. Do you want to stay in this house or move from it?

14. Why do you want to (stay) (move)?

Those who want to move:

15. Where would you like to move to? (Specific area; street, barrio)

All respondents:

16. Do you see any possibility of moving within the next year? (Certain, possible, impossible. Those who are not "Certain: Within the next five years?)

17. Whose idea is it to (move) (stay)? (Self, spouse, relative (specify), other)

18. Does your (spouse) want to move from here?

19. Have you discussed the possibility of moving with your (spouse)?

G. Improvement of owner-occupied housing (Homeowners only)

1. Have you rebuilt this house, enlarged it, or made some major repair to it since you bought it? (Yes, No)

Those who have:

Type of work:	Total Cost?	Work done by self or rel.	Hired Work	Year
Complete reconstruction				
Partial reconstruction				
Additions				
Major repair				

2. (Optional) Did you pay for this work out of savings or use a loan?

Those who made additions or major repairs:

3.

Type of work	Total Cost	Work done by Self or rel.	Hired	Year
Raised house				
Added rooms				
Added another story				
Built floors				
Partitions, walls				
re-roofing				
Installed, finished plumbing				
Sewer or septic tank connections				

Electricity
Kitchen work
Stairs
Windows, doors
Added Balcony
Built or rebuilt patio
Painted House (whole house
or all inside or outside)
Other (specify)

All respondents

4. Have you made any minor repairs to this house during the past year?

Those who have:

Type of work	Cost	Work done by Self or rel.	Hired
Painted rooms			
Repaired roof			
Repaired walls, floors, ceilings, etc.			
Other carpentry			
Other (specify)			

All respondents

5. Do you think you will make any other changes or repairs in the next year and a half (18 months)?

Those who plan to:

6. What changes or repairs?

IV. DEPENDENT VARIABLES: URBANIZATION PROCESS

A. Migration

1. Intergenerational
   Place of birth of mother and father (municipic, barrio, other country, etc.)

2. Did your father ever live in a large city (more than 10,000 inhabitants)?
   For how long a time?
   - Less than five years
   - From 5 to 10 years
   - From 11 to 15 years
   - More than 15 years

3. Before you were 21 years of age, had you ever lived in a city or town where the population was less than 10,000 inhabitants?
   For how long? (Same as 2 above)

4. Migration history

   Tell me now all the places you have lived in since you were born (including the place of your birth.) In each case, specify the place, the neighborhood, and the city. How long did you live there? When did you move from the place? Who accompanied you? Why did you leave?

Sequence of Residence	Place of Residence: Municipio	Place of Residence: Place and Neighborhood	Date: From	Date: To	Acco. by (spec)	Reasons for Move
1. Place of birth						

5. Last move (to the city in which presently residing). (Not asked of those who have always lived in the present city).

   a. Who made the final decision to move to this city? (Self, spouse, friend, parents, other (specify).
   b. What were your reasons for moving to this city (i.e., what made you select this particular city to move to)?
      - Better opportunities to find (any) work
      - Transferred by employer
      - Good opportunities in my work
      - Better housing (physical structure)

Better social environment (Neighborhood)
To be near relatives
Wanted to live in the city
Other (specify)

c. How did you find out about (the better opportunities or living conditions here)?
   Relatives
   Friends
   Read about it in the newspaper or heard it on the radio
   From a previous visit
d. Why did you not move to this city sooner?
   Lack of money
   Family reasons
   School reasons
   Work reasons
   Had no place in city to go to
   Reasons of friendship
   Other (specify)
e. How did you make the move?
   Public transportation
   Transportation provided by friends or relatives
   Other (specify)
f. When you first arrived here, did you live with someone? With whom? For how long?
g. Did you have relatives living around here before you moved to this city? What relatives?

6. Fulfillment of expectations

a. How long did you expect to stay when you moved to this city?
b. Do you expect to remain in this city, move on to some other city, or return to some place where you have lived previously? Which place?
c. Why do you want to (stay, move, return)?
d. How would you say your situation in this present city compares with your situation in the place where you lived just before? (Better, same, worse)
e. How would you say your situation in this city on each of the following compares with your situation in the last previous city (or other place outside this present city) on each of the same items:

	Better	Same	Worse
Income			
Housing			
Neighborhood environment			
Employment situation			
Family life			
Advantages for your children			
Making friends			

B. Economic, Social, and Political Attitudes

Sequence of questions as used in the San Juan Pilot study is for the most part followed in this section.

1. Scale of mobility
Show the respondent the drawing of the scale from 0 to 10. While you speak of the right-hand part of the drawing, show the point "10". When you speak of the left-hand part of the drawing, point to "0". When reading the rest of the question, indicate the whole area of the drawing.

Scale

0	10
Low	High

As you can see, here we have a drawing, the right-hand side represents the number 10, the left-hand side the number 0.

a. Let us suppose that at the right-hand side are located the people with the best conditions of life, at the left side are located people who have the worst conditions of life. If you were to locate yourself at some point in the graph:

As to present condition of life, where are you located in the drawing? Scale number _____

As to your condition of life five years ago, where were you located in this drawing? Scale number _____

And five years from now, where would you locate yourself, as to conditions of life? Scale number _____

b. Now let's suppose that the right-hand part of the drawing represents the best situation for (name of country) and the left part represents the worst situation that (name of country) could encounter.

Where does (name of country) find itself in the drawing at this time? Scale number _____

Where was (name of country) located five years ago? Scale number _____

Five years from now in which part of the drawing will (name of country) be located? Scale number _____

c. In the right-hand side let us locate a person who has the opportunity (chance) to do or carry out everything he imagines he would like to; at the left side is

located a person who has no opportunity to do the things he would truly like to:

Speaking of you, in which part of the drawing would you place yourself at present? Scale number _____

Fathers and Sons (In-depth coverage)

1. They say these days that there are many problems holding up the progress of the country. Below I will read only 6 problems. I would like to know which of the six you think is the most serious or gravest.

Unemployment, low wages, lack of work
Lack of comfortable housing
Political status of
Lack of respect for civil rights
Corruption in the present government
Lack of efficiency in the present government

Husbands, Fathers and Sons:

2. I will ask you some questions concerning the present situation in the country.
(Responses read and corresponding number circled, as follows: 1 A lot 2 A little but not much 3 None or almost none 4 Has a more complex, ambivalent opinion 5 No opinion; doesn't know how to answer.)

How much social injustice do you think exists nowadays in this country?
How much corruption do you think exists in the country nowadays?
How much economic injustice exists in this country nowadays?
How much of an effort is the national government really making to better your life and of people like you?

3. Are you in agreement or not with the criticisms of the present situation in the country which I am going to read you now:
(Responses read and corresponding number circled, as follows: 1 Agree very much, totally 2 Agrees 3 Doesn't know, no opinion, complex or ambivalent opinion 4 Does not agree 5 Disagree very much, totally).

The present government does not pay attention to the desires of the people.
The majority of our politicians are not honest.
The national legislature talks a lot but does little.
A man of the same social or economic condition as you has no chance in this country of having a worthy and respectable life.

These days the humble classes make more sacrifices than the moneyed classes.
These days the information that reaches the people through the newspapers, radio, TV, etc. disguises or hides the truth.
It's not worth the trouble to vote since the vote doesn't produce any change.
In spite of what is said, the fate of the majority of , has not changed.
The economic policy of the country harms precisely those businessmen that have the most initiative in the country.
In the present economic environment, the small merchant can hardly earn a living.
The police do not respect civil rights.
The police mistreat the poor.
The Courts of Justice serve the interests of some groups but not of all the people.
The Courts of Justice distort (don't respect) the principles of the Constitution.
The military interferes too much with the political life of the country.
Divorce should not be allowed.
Public schools should inculcate(teach) children more respect for religious principles.
Unfortunately the people are not a united people.

4. If you were to receive three offers of work, which one would you take?

   1. One with a low income but with the security of being able to have the job indefinitely.

   2. One with a good income and a 50-50 chance of keeping the job permanently.

   3. One with an extremely high income and the possibility of permanently keeping the job only if you succeed at it.

5. State your general opinion of the people around you, except your relatives and good friends, as "Yes" if you agree with the statement made or "No" if you do not agree:

   The people around you:

   Return what they borrow without your having to ask for it.
   Fulfill their promises.
   Distrust the majority of people.
   Always tell the truth even though it may damage them.
   Live to impress others, showing a fictitious situation, imitating those who have more means.

6. In your spare time, or on your vacation, what do you do?
   Read
   Be with my friends
   Practice a hobby
   Help father or some other relative to work
   Work at another job

7. State whether you agree or do not agree with the following statements:
   Success in life depends more on luck than on personal ability.
   The secret of a happy life is not to reach for too much and to be content with what happens.
   An intelligent man lives today and doesn't worry about tomorrow.
   Making plans for the future is useless because they never work out.
   How often do you take on the leadership of your group of friends? (Often, sometimes, rarely).

Fathers and Sons Only (In-depth coverage)

(Read responses and circle corresponding number, as follows: 1 Agree very much, totally 2 Agrees 3 Doesn't know, no opinion, complex or ambivalent opinion, 4 does not agree 5 Disagrees very much.)

The system of paying taxes favors the moneyed classes too much and does not favor people of the middle and lower classes.
The people of ( ) vote without seeking the information it needs to do so intelligently.
The present government has done really nothing worthwhile to help people in conditions similar to yours (or your family's)
The majority of the elections are fraudulent.
The government does not fulfill its obligation to create conditions that will increase the number of jobs.
The youth of ( ) is losing its feeling of being ( ).
The reactionaries are a serious menace to the security of ( ).
Communism is a serious menace to the security of ( ).
University professors and school teachers with communist ideas should be thrown out (fired).
Reactionary university professors and school teachers should be thrown out (fired).
Inspite of the apparent economic progress our development is stagnant.
It is not worthwhile for a citizen to communicate his opinion to his representative because in general they don't listen (pay no attention).

Capital and Foreign companies are slowing (are harming) the true economic progress of the country.
Without a social revolution the condition of the majority of the people of this country is not going to get better.
The social prejudices that exist these days in (country) do harm to people in conditions similar to yours (or your family's).
I notice racial prejudice in this country that I do not approve.
The government interferes(intervenes) too much in the economy of the country.
The people of (country) argue too much instead of working together to better the lives of everyone.
It is said that governmental planning helps economic progress but in reality it stops it (slows it).
Monopolies and large companies are a barrier to the economic progress of the country.

8. We are now going to talk about a list of people. We would like to know which of them deserve to be respected as distinguished persons and which deserve to be renounced according to your opinion: (Circle corresponding number as follows:) 1 Distinguished 2 Neutral (neither distinguished nor renounced) 3 Doesn't know who he is or doesn't know what he deserves 4 Renounced

The following names, used in the San Juan Pilot study, are cited only as examples:
Luis Munoz Rivera
Lyndon B. Johnson
John F. Kennedy
Fidel Castro
Albizu Campos
Luis Munoz Marin

9. Now, I would like to know which of the following cases make you angry and which give you pride: (Circle corresponding number, as follows: 1 Pride 2 Neutral, neither one nor the other 3 Anger 4 No opinion (doesn't know, can't answer.)

Being (citizen of)
The (Republic of)
Your work or profession (For sons, the question applies to his father's work).
Your home
Your religion

10. How important do you consider the following dates: (Read responses and circle corresponding number, as follows: 1 Very important 2 More or less important (moderately important) 3 Unimportant 4 Doesn't recognize the holiday, doesn't know how to answer. (short list to include significant national and religious holidays).

11. What kind of treatment do you receive or would you expect to receive from the groups that I will mention next, if you had to deal with them concerning some matter? Do you receive or would you receive just or unjust treatment? Treatment that is equal or that is unequal (different) from that given any other person? (Circle corresponding number, as follows: 1 Just or equal 2 Can't say simply just or unjust, opinion is more complex 3 Unjust, unequal 4 Doesn't know, has no opinion, cannot answer)

The police (A concrete case: Violating a traffic law)
Labor Unions
Small merchants
Foreign business enterprises
The Catholic Church (priests, clergymen)
The owners of large enterprises
Government Offices (for example, the tax office)
Federal Employment Service
Health Center or Health Units

12. Attitudes toward work. Read choices and circle corresponding number, as follows: 1 Very satisfying; or very interesting; or very good 2 Satisfying; or interesting; or good, etc. (less intense than 1) 3 More complicated, ambivalent, answer, neutral, doesn't know 4 Unsatisfying; or boring; bad, etc. (less intense negation than 5) 5 Very unsatisfying; or very boring; or very bad, etc. (More intense negation than 4)

<u>Fathers</u>
How satisfied are you with the amount of responsibility that you have in your job?
How interesting do you think your present job is?
What do you think of the opportunity your present job gives you to better use what you know how to do? (very good - very bad)
How good or bad is the opportunity your job gives you to develop new abilities or learn new things?
How do you feel about working under a lot of pressure?
How satisfied are you with your present salary (or earnings)?
Does the opportunity for advancement (rising to posts of greater responsibility) give you much or little satisfaction?

Fathers and Sons (Only Sons in the labor force)

13. Would you accept the position of supervisor, if it were offered to you?

14. Comparing your salary (or earnings) with that of others that do the same thing as you, do you think you earn more, less, or the same amount as they?

15. How often do you feel like not going to work?
Very frequently
Frequently
Once in a while
Never

16. Have you ever thought of leaving your job?
No
Yes, once in a while
Yes, often

17. Now, I'm going to read you a few opinions about work. I would like to know if your attitudes toward your present job are in agreement or not with the following opinions. (Read choices and circle corresponsing number, as follows:
1 Very much in agreement 2 In agreement 3 Neutral
4 Not in agreement 5 In total agreement)

I would remain working overtime to finish a job even if they did not pay me for the extra time.
Time flies in the mornings when I am doing my work.
I prefer to arrive at work early to prepare things.
I have other activities which are more important than my job.
I would probably keep working even if I didn't need the money.
I often want to stay at home and not go to work.
My job mattered most to me before, but now there are other things that are more important to me.

18. If you had to choose between two jobs, earning the same amount in both, but in one you would be a worker and in the other an office employee, which would you prefer?
1. Worker (laborer)
2. Office employee

19. (If the respondent has chosen office employee , read him the following situations and mark with an X the situation he chooses. Mark one.)

If you earned 50 dollars more per week you would prefer to be a laborer.
If you earned 100 dollars more per week you would prefer to be a laborer.
If you earned 200 dollars more per week you would prefer to be a laborer.
You would never choose to be a worker under any circumstances.

20. Types of job preferred:
The kind of job I would prefer most would be:

A job where I can almost always work on my own.
A job where there is someone who can help me with the problems I can't solve.

The kind of job I would prefer most would be:
A job where I would have to make many decisions.
A job where I would have to make almost no decisions.

The kind of job I would prefer most would be:
A job with detailed instructions.
A job with very general instructions.

The kind of job I would prefer most would be:
A job where I'm always sure of my abilities to do a good job.
A job that requires the maximum of my abilities.

The kind of job I would prefer most would be:
A job where I am the responsible one.
A job where another person or a procedure takes on the responsibility.

The kind of job I would prefer most would be:
A job where I succeed or fail completely.
A job where I would never have a complete success or failure.

The kind of job I would prefer most would be:
A job that changes very little.
A job that changes constantly.

The kind of job I would prefer most would be:
A job that is very interesting but that will not last long.
A less interesting job but with the possibility of lasting a long time in the company.

The kind of job I would prefer most would be:
A job that would utilize my brain.
A job that would utilize my manual skills (with the hands).

The kind of job I would prefer most would be:
A job where I earn a lot of money
A job that would help the economic progress of my country.

21. How much in agreement has your behavior been with what your parents expected of you?

22. How important is it to you to please (get along well with) other people ?
    Very important
    Moderately important
    Rather unimportant
    Not at all important

23. How important is it to you to know beforehand and very plainly your plans for the future?
    Very important
    Moderately important
    Rather unimportant
    Not at all important

24. How frequently do you feel depressed?
    Almost always
    Very often
    Sometimes
    Rarely
    Very rarely
    Almost never

Husbands and Fathers and Sons (Sons in the labor force only)

25. I arrange the income or salary that I receive to save some quantity of money: (Always, sometimes, never)

26. When you have a task to do, how do you usually do it?

    I do it the best way I can, even when no one required it of me.
    I do it in a manner that satisfies me, even when I know I can do it better.
    I do it in a manner that satisfies my superiors, even when I know I can do it better.
    I do it in such a way that my superiors don't reject it, but are not satisfied with it.
    I would try not to do it.

C. Political Attitudes (See also Section IV)

1. Who is your representative in the legislature?
   _____1. Name
   _____2. Don't remember
   _____3. Don't know

2. Has your representative done anything to improve your life or has he done nothing?

3. Does your barrio have a commissioner?

   Those who answer yes:

   Has he done anything to better the condition of the barrio? or has he done nothing?

   Who is the commissioner?
   _____1. First and last name _____
   _____2. Don't remember for the moment
   _____3. Don't know

All Respondents

4. Did you vote in the latest election?

D. Social Attitudes: Marriage, Family, Parents' Family

1. Matrimonial history
   Number of times married; age at first marriage; length of each marriage; how each marriage terminated; type of each marriage (church, civil, consensual); type of marriage of parents.

2. Decision-making dominance

   In every family, someone has to decide things, as, for example, where the family is going to live, and so on. Many couples discuss the subject first, but the final decision often must be made by the husband or the wife. For example, in your family, who decides finally on the following things: (Read choices and circle corresponding number for each of the six questions, as follows:
   1 The husband always decides 2 The husband more than the wife 3 The husband and the wife more or less equally 4 The wife more than the husband 5 The wife always

a. How much can the family spend on food only?
b. To have another child or not?
c. To buy, or not, a new fixture, like a radio or a refrigerator?
d. How to bring up the children?
e. What to do on holidays?
f. In what neighborhood to live?

3. Family relationships

a. How much do your children talk with you and your wife about school problems, problems with their friends, or simply general problems that children and young adults have while they are growing up? (Read choices and mark corresponding response)

1. Never
2. Usually, but mainly with wife
3. Usually, but mainly with you
4. Usually, equally with wife and you
5. Sometimes, but mainly with wife
6. Sometimes, but mainly with you
7. Sometimes, equally with wife and you
8. Hardly ever, but mainly with wife
9. Hardly ever, but mainly with you
10. Hardly ever, equally with wife and you

b. In general terms, how would you describe the relationship that exist between the members of your household? 1 Very harmonious 2 Somewhat harmonious 3 A little harmonious 4 Very little harmony 5 No harmony at all

4. Decision-making in parents' family

a. Who makes (made) the decisions about spending in your father's family?
b. In your father's family, who decides (decided) about everything concerning the children?

(For each of above questions, read choices and circle corresponding number as follows: 1 Father only 2 Mainly my father, but mother's opinion carried weight 3 Both parents almost equally but father a little more 4 Both parents equally 5 Both parents equally but mother a little more 6 Mainly mother, but father's opinion carried weight 7 Mother only 8 Usually some other person.

5. Relationship with parents
If your parents or one of them is deceased and:

1. If you remember the relationship you had with them, answer the questions by referring to them.

2. If you don't remember the relationship you had with them, answer the questions by referring to people who have been like a father or mother to you.

If you have not seen your parents, or one of them, since you were very young, and you do not remember the relationship you had to them, answer the questions by referring to people that have been like a father or mother to you.

a. To what extent has your father helped you (or did help you) to resolve problems or difficulties that you have had?

1. Has helped me analyze the problem, leaving decision to me
2. To the extent of solving entire problem for me
3. To the extent of eliminating difficulties beyond my ability
4. Limited himself to giving me suggestions
5. Did not worry about my problems
6. Has made the problems I have had more difficult

b. What kind of authority did (do) your parents exercise?
1 Rigid, harsh, authoritarian 2 Rather mild, temperate 3 More complex response, don't know 4 Don't remember

c. Did or do your parents control your social life and your going out?
1 Father only 2 Mother only 3 Both 4 Don't remember 01 Always 02 Often 03 Sometimes 04 Don't remember
(The same code applies to the following questions)

d. Did (do) your parents concern themselves with your studies?

e. When your parents wanted (or want) you to do something, did (do) they tell you the reasons?

f. Was it easy for you to talk with your parents about your problems?

E. Religion

1. Whether or not they belong to a religion; which religion, and frequency of attending church services.

F. Social Interaction

1. People outside the household with whom have the most frequent contact.
Sex; relationship to respondent; place of residence (same barrio, same neighborhood; same barrio or neighborhood; other (specify); if in public housing, in the same project or another one); frequency of visits from or to each individual. (Husbands also were asked occupations of the people with whom they had most frequent contact).

2. Number of persons living in the same block with whom visited at least once a week or oftener.

3. Number of persons living outside the same block with whom visited at least once a week or oftener.

4. Number of persons living outside the same neighborhood with whom visited at least once a week or oftener.

5. Celebration of special occasions with the people visited at least once a week or oftener, such as graduations, confirmation, etc. (Never, most of the time, sometimes, seldom).

6. Contacts with persons who live outside the city:
Place of residence of each person; relationship; frequency of visits from or to each person.

7. Membership in formal organizations
Type of organization (religious, civic, professional, political, social, recreational); frequency of attendance at meetings; whether or not relatives (and which ones) or friends are also members; contributions to each organization (always, sometimes, seldom, never) and type of contribution; offices held.

8. Frequency of certain activities: Reading a newspaper, news magazine, listening to radio or television, praying.

G. Social Mobility

(See Scale of Mobility under Section IV-B)

1. Intergenerational mobility

   a. Educational level of father
   b. Educational level of mother
   c. Type of work of father at time of respondent's birth
   d. Type of work of father at present (or at time of last job held)

2. Intragenerational mobility

   a. Type of work in which engaged five years ago.
   b. Number of different jobs held in the last five years
   c. Type of work in which engaged at time of present marriage
   d. Type of work in which engaged at time of son's birth

3. Income mobility

   a. Total family income five years ago
   b. Total expected family income five years from present.

APPENDIX III. THE McCLELLAND TECHNIQUE

The McClelland Technique

One part of the San Juan pilot study included an attempt to test the applicability in a large-scale survey of projective techniques of assessing certain personality factors.[1] The technique involves showing relatively neutral photographs of various situations to the respondent and asking him to tell a story about the past, present, and future of the situation in the photograph. Thus, by projection, the respondent is presumably able to manifest his basic orientation when he would not be able to do so through direct questioning.

The experience in San Juan suggests that some means other than hand recording by an interviewer is necessary for use of the technique. A portion of the interviews where this technique was used was done with portable battery-operated tape recorders and a portion were done by asking the interviewer to record verbatim what respondent said in his stories about the photograph. The latter interviews were clearly inadequate.

The cost and inconvenience of using tape recorders would indicate that this technique would be applicable only for small samples, unless the study were focused primarily on that data rather than being a more general study, as is the type presented in this report.

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[1] See David C. McClelland, et.al., The Achievement Motive, New York: Appleton-Century-Crofts, 1953.

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