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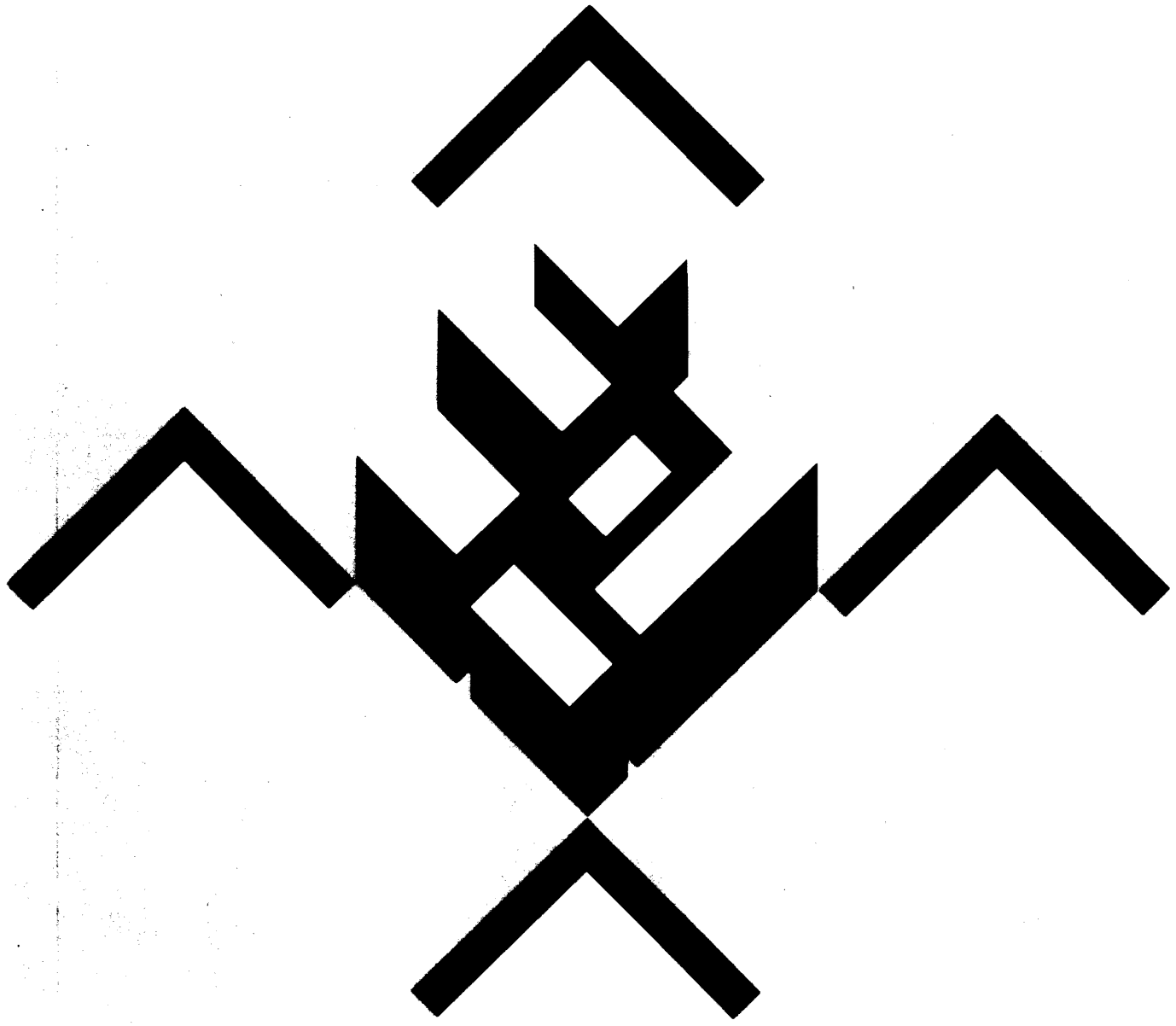
The Determinants of Neighborhood Quality



THE DETERMINANTS OF NEIGHBORHOOD QUALITY: AN ANALYSIS OF THE 1976 ANNUAL HOUSING SURVEY

Prepared for
U.S. Department of Housing and Urban Development
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by

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Data from the Annual Housing Surveys are available in joint HUD-Census publications. The national data are published in Series H-150, comprising six reports, and the metropolitan data are published in Series H-170, with a separate report for each metropolitan area. Series H-171 is a supplementary report on the metropolitan areas. These reports are also available in microfiche form from the Library, Bureau of the Census, Washington, D.C. 20233. The published reports may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. All the data are available in public use computer tapes from the Date User Services Division, Bureau of the Census, Washington, D.C. 20233.

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FOREWORD

This paper is the third in our series of Annual Housing Survey studies, reporting on research that utilizes the capabilities of the AHS for monitoring and interpreting current developments in housing, neighborhood, and household characteristics.

The Department of Housing and Urban Development has funded a national housing survey, performed by the Bureau of Census, since 1973, with separate surveys for 60 metropolitan areas included since 1974. The survey provides current information on the size and composition of the housing inventory, characteristics of its occupants, changes in the inventory resulting from new construction and from losses, indicators of housing and neighborhood quality, and characteristics and dynamics of urban housing markets for the Nation and four census regions. Every third or fourth year, these data are also gathered for most of the 50 largest metropolitan areas and for some smaller, fast-growing metropolitan areas.

The Annual Housing Survey is designed to help policymakers and scholars understand urban dynamics and analyze local policy problems. Longitudinal linkage of the annual national file provides an unparalleled opportunity to study dynamic processes in housing markets and population shifts; the metropolitan surveys give greater detail on the housing and population characteristics of suburbs and cities in specified metropolitan areas.

Items eliciting respondents' opinions of neighborhood services, neighborhood conditions and the general living environment were included in the survey because of a growing realization that neighborhood quality, as well as housing quality, is important to residential satisfaction. Yet, the role in determining neighborhood satisfaction of conditions and services that can be influenced by public policy is imperfectly understood. This paper, prepared under contract with HUD's Office of Policy Development and Research by Dr. Robert W. Marans of the Institute for Social Research at the University of Michigan, examines the relationships

between respondents' evaluations of neighborhood conditions and services and their overall assessment of neighborhood quality. Dr. Marans findings about the effect of well-kept buildings and streets on residential satisfaction emphasize the continued need for adequate maintenance of the urban infrastructure. His assessment of the relative influence of different neighborhood attributes to neighborhood satisfaction also contributes to our ongoing attempt to improve the AHS questionnaire. I welcome his paper as an example of both the policy-oriented and technical research that can be accomplished through the use of the Annual Housing Survey.

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ABSTRACT

Recent empirical research has demonstrated that neighborhood quality is associated with residents' evaluations of specific attributes of their housing environment. This paper uses the 1976 Annual Housing Survey to assess the contributions to overall neighborhood quality of people's evaluations of environmental conditions and public services. It considers 1) the extent to which the presence or absence of conditions influences ratings of neighborhoods, 2) the relative importance of condition and service evaluations in explaining overall neighborhood ratings, and 3) the extent to which the evaluations in households with different background characteristics differ in importance in explaining overall neighborhood ratings. It finds that:

Most Americans were quite content with their neighborhoods. More than four in five rated them as excellent or good places to live while only 2 percent gave them poor ratings.

The presence or absence of neighborhood conditions (as measured by respondents' perceptions) accounts for only one-sixth of the variation in people's ratings of overall neighborhood quality. The evaluations of neighborhood conditions, however, are stronger predictors accounting for nearly a quarter of the variation in the neighborhood ratings.

People's feelings about conditions around them contribute more to neighborhood ratings than the ways they assess local public services. In fact, after condition evaluations are taken into account, service evaluations contribute only marginally to our understanding of the overall neighborhood ratings.

Most important to the prediction of neighborhood ratings are the evaluations of neighborhood and housing upkeep, street noise, and crime. Among the service evaluations considered, feelings about police protection, public transportation, and health care facilities are most important to peoples' feelings about their neighborhoods.

Population subgroups differed significantly in their overall neighborhood ratings. Poor ratings were recorded for respondents who were poorly educated, young, black and renting their homes. Taken as a whole, however, the background of the respondents has little effect on how individuals evaluate specific neighborhood attributes.

These findings suggest several modifications in the set of neighborhood questions presently used in the Annual Housing Survey.

The intercorrelations among several of the respondents' evaluations and the limited usefulness of a number of neighborhood attribute evaluations in explaining variation in neighborhood ratings would suggest that questions covering selected attributes be modified, combined or totally eliminated from the Annual Housing Survey questionnaire in the future.

Patterns of responses to the neighborhood questions and their interrelationships differ for people living in urban and rural areas. Consideration should therefore be given to the possibility of using a different battery of evaluative questions in each setting.

The present structuring of the Annual Housing Survey questions covering environmental conditions and public services does not allow policy makers or analysts to examine peoples' moving intentions or the relationships between these intentions and neighborhood attribute evaluations. Consideration should be given to the elimination of final portions of the evaluation questions and the addition of a separate question dealing with people's intentions to move from their residence.

INTRODUCTION

During the past decade, several empirical studies have demonstrated that residents' evaluations of specific environmental conditions and local public services are associated with perceived neighborhood quality (Lamanna, 1964; Michelson, 1969; Lansing, Marans and Zehner, 1970; Campbell, Converse and Rodgers, 1976; Zehner, 1977). Neighborhood quality has been expressed in terms of peoples' satisfaction with their residential settings or their preferences for an ideal environment in which to live. Neighborhood data collected as part of the HUD-sponsored annual housing surveys can be used to corroborate findings from these earlier studies while at the same time directing attention to several policy and methodological issues.

Statement of Purpose

The purposes of this paper are threefold. First, it summarizes a number of descriptive findings covering neighborhood data collected as part of the 1976 Annual Housing Survey.[1] Second, it expands upon these findings by considering the contributions to overall neighborhood quality made by peoples' evaluations of environmental conditions and public services. Finally, the paper examines the set of neighborhood questions presently being used in the AHS and suggests modifications in its scope and content for the future. Substantively, the paper addresses the following questions:

1. How do Americans view their residential neighborhoods including environmental conditions associated with the street and the public services available to them?

2. To what extent does the presence or absence of environmental conditions (as measured by perceptions) influence peoples' ratings of their neighborhoods?

3. What is the relative importance of the neighborhood condition evaluations in explaining overall neighborhood ratings?

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[1] The Annual Housing Survey is herein referred to as AHS.

4. What is the relative importance of the public service evaluations in explaining overall neighborhood ratings?

5. Which of two sets of evaluations (conditions or services) is more important in explaining how people rate their neighborhoods?

6. To what extent do the evaluations of households with different background characteristics differ in importance in explaining overall neighborhood ratings?

Data Set

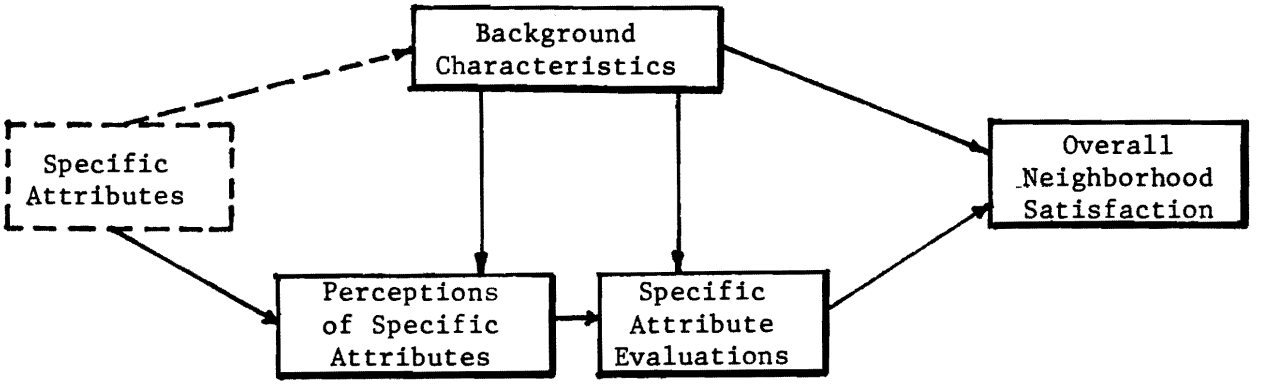
Responses to these questions are based on analyses of data obtained from a subsample of 4,999 of the original 69,992 housing units identified in the 1976 AHS. Specifically, a systematic sample of one in fourteen housing units was selected, the vacant and "usual residence elsewhere" units were eliminated, and for each of the remaining 4,526 occupied housing units, data covering housing unit respondents were incorporated into a separate data file.[1] Data covering selected background characteristics of the respondents and their responses to the neighborhood questions were included. In order to ensure that the subsample was representative, percentage distributions covering selected background characteristics of the respondents were examined and found to be virtually identical to distributions from the entire AHS sample. (See Appendix Table 1) Similar comparisons were made for responses to the neighborhood evaluation questions for the total sample and the ISR subsample.

Conceptual Framework

The conceptual framework or model which underlies the analysis that follows is derived in part from on-going work at the Institute for Social Research at The University of Michigan (cf. Marans and Rodgers, 1975). Briefly, the model suggests that an individual's evaluation of or satisfaction with any domain of his/her residential environment (housing, neighborhood, community) is influenced by the individual's assessments of specific attri-

[1]The data set is herein referred to as the ISR subsample.

butes of that environment. Furthermore, assessments of specific attributes are a function of a) the extent to which the individual accurately perceives the attributes as being present, and b) the characteristics of the individuals themselves, recognizing that individual judgments can vary depending on one's standards of comparison, social situation, past experiences and so forth. Background characteristics may also affect the overall evaluation as well as the evaluations of specific attributes. Finally the model suggests that individual perceptions of domain attributes correspond, to some degree, to the attributes as they are objectively measured. The model with respect to neighborhoods is shown in the following diagram.



Data collected as part of the 1976 AHS allow us to examine several relationships implied by the model and suggested by past research. In particular, data are available for a) an overall satisfaction measure (neighborhood rating), b) evaluations of several attributes (environmental conditions and public services), c) perceptions of whether or not environmental conditions exist, and d) selected background characteristics of individual respondents. The broken box around "Attributes" denotes the absence of AHS data.

I. OVERVIEW OF RESPONSES TO NEIGHBORHOOD QUALITY QUESTIONS

Before considering specific relationships implied by the model, it would be useful to review some of the major findings covering the neighborhood quality questions of the AHS.[1]

Overall Neighborhood Ratings

Table 1 shows that most people in the United States said their neighborhoods were excellent or good places in which to live. In both the AHS sample and the ISR subsample, more than 4 out of 5 people responded in this manner while only 2 percent rated their neighborhood poorly. In absolute numbers, however, this amounts to nearly 2 million households whose occupants viewed themselves as being in unsuitable living environments.

TABLE 1

Overall Neighborhood Rating
Comparative Data - 1976 Annual Housing Survey and ISR Subsample
(weighted frequencies)

Overall Neighborhood Rating	1976 AHS	ISR Subsample
Excellent	34.6	35.1
Good	47.0	48.5
Fair	15.3	13.9
Poor	2.5	2.2
Not Reported	0.5	0.3
Total	99.9%	100.0%
Number of respondents	(63150)	(4526)

[1] Descriptive statistics covering neighborhood measures are reported in Annual Housing Survey: 1976, Part B, Indicators of Housing and Neighborhood Quality, and Part F, Financial Characteristics by Indicators of Housing and Neighborhood Quality, Current Housing Reports, Series H 150-76.

Neighborhood Attribute Evaluations

With respect to the 12 environmental conditions, data from Table 2 reveal several interesting findings. For most conditions, 10 percent or more of the respondents said they existed in their neighborhoods. The most prevalent were street noise and heavy traffic; a third of the sample said each of these conditions was present. A quarter of the sample said poor street lighting existed while about one in five said their neighborhood contained industrial activity, airplane noise or streets which were in need of repair.

Table 2 also reveals that there are significant differences in the proportions of perceived conditions which bothered respondents. If we consider only the respondents who said a particular condition existed in their neighborhoods, and examine the ratio of those who were bothered to those who were not, two groups of conditions emerge. In one group, a greater proportion of respondents are bothered than not (ratio greater than one) while in the other group, the opposite occurs (ratio less than one). Table 3 indicates that where conditions such as crime, litter, odors, streets impassable and in need of repair and rundown housing existed, more than half of the respondents described them as bothersome. On the other hand, when other conditions were reported, fewer than half of the respondents said they were bothersome.

Even though conditions such as street noise, heavy traffic, and crime were often mentioned as being so bothersome that respondents wanted to move, the ratio approach suggests that the presence of industrial activity, rundown and abandoned houses and odors was also a problem for people with these conditions in their neighborhoods.

TABLE 2

Evaluation of Neighborhood Conditions
Comparative Data - 1976 Annual Housing Survey and ISR Subsample
(weighted frequencies)

Evaluation of Neighborhood Conditions	1976 AHS	ISR Subsample
Street Noise		
None exists	65.2%	65.7%
Exists but does not bother	22.1	21.2
Bothers but not enough to move	8.9	8.8
Bothers enough to move	3.9	4.2
Total	100.1%	99.9%
(Number of observations)	(N.A.)	(4505)
Heavy Street Traffic		
None exists	69.6%	68.7%
Exists but does not bother	20.3	20.3
Bothers but not enough to move	6.6	6.8
Bothers enough to move	3.5	4.2
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4510)
Streets Needing Repair		
None exists	82.5%	81.9%
Exists but does not bother	6.8	7.1
Bothers but not enough to move	8.7	9.0
Bothers enough to move	1.9	2.0
Total	99.9%	100.0%
(Number of observations)	(N.A.)	(4506)
Streets Impassable		
None exists	89.3%	87.9%
Exists but does not bother	4.8	5.3
Bothers but not enough to move	4.6	5.4
Bothers enough to move	1.3	1.5
Total	100.0%	100.1%
(Number of observations)	(N.A.)	(4500)

TABLE 2 (continued)

Evaluation of Neighborhood Conditions
Comparative Data - 1976 Annual Housing Survey and ISR Subsample
(weighted frequencies)

Evaluation of Neighborhood Conditions	1976 AHS	ISR Subsample
Poor Street Lighting		
None exists	75.6%	75.1%
Exists but does not bother	15.5	16.0
Bothers but not enough to move	7.5	7.5
Bothers enough to move	1.4	1.4
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4496)
Neighborhood Crime		
None exists	82.2%	84.3%
Exists but does not bother	5.1	4.7
Bothers but not enough to move	8.5	7.7
Bothers enough to move	4.2	3.3
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4506)
Trash and Litter		
None exists	84.7%	86.1%
Exists but does not bother	4.6	4.2
Bothers but not enough to move	7.6	7.1
Bothers enough to move	3.0	2.6
Total	99.9%	100.0%
(Number of observations)	(N.A.)	(4508)
Abandoned Structures		
None exists	93.0%	93.3%
Exists but does not bother	4.3	4.2
Bothers but not enough to move	1.7	1.6
Bothers enough to move	1.0	0.9
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4517)

TABLE 2 (continued)

Evaluation of Neighborhood Conditions
Comparative Data - 1976 Annual Housing Survey and ISR Subsample
(weighted frequencies)

Evaluation of Neighborhood Conditions	1976 AHS	ISR Subsample
Rundown Houses		
None exists	90.0%	89.8%
Exists but does not bother	4.5	4.6
Bothers but not enough to move	3.2	3.4
Bothers enough to move	2.2	2.2
Total	99.9%	100.0%
(Number of observations)	(N.A.)	(4501)
Industrial Activities		
None exists	79.7%	80.6%
Exists but does not bother	17.7	16.8
Bothers but not enough to move	1.6	1.4
Bothers enough to move	1.0	1.2
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4503)
Odors or Smoke		
None exists	90.6%	91.2%
Exists but does not bother	3.2	2.9
Bothers but not enough to move	4.2	3.9
Bothers enough to move	2.0	2.0
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4515)
Airplane Noise		
None exists	82.2%	81.3%
Exists but does not bother	11.9	12.5
Bothers but not enough to move	4.7	5.1
Bothers enough to move	1.2	1.1
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4514)

TABLE 3

Proportion of Respondents Bothered and Not Bothered by Neighborhood Conditions

	Percent Who Were Bothered	Percent Who Were Not Bothered	Ratio
Crime	11.0	4.7	2.34
Trash, Litter	9.7	4.2	2.31
Odor, Smoke	5.9	2.9	2.03
Streets Impassable	6.9	5.3	1.64
Streets Need Repair	11.0	7.1	1.55
Rundown Houses	5.6	4.6	1.22
Street Noise	13.0	21.2	0.61
Abandoned Structures	2.5	4.2	0.60
Poor Street Lighting	8.9	16.0	0.56
Heavy Street Traffic	11.0	20.3	0.54
Airplane Noise	6.2	12.5	0.50
Industrial Activities	2.6	16.8	0.15

Compared to other public services, public transportation was viewed as inadequate by the greatest number of respondents (40.4 percent). (See Table 4) At the same time, about 13 percent said shopping and health care facilities were inadequate, 9 percent reported inadequate police protection, while only 4 percent said that fire protection and public schools were unsatisfactory. Although the public services asked about were viewed unfavorably by a number of respondents, few felt that the services were bad enough to warrant their moving. No more than 2 percent said a service was bad enough for them to consider changing residence.

Patterns of Interrelationships

The pattern of interrelationships between peoples' evaluations of environmental conditions and public services is shown in Figure 1. The strengths

TABLE 4

Evaluation of Neighborhood Services
Comparative Data - 1976 Annual Housing Survey and ISR Subsample
(weighted frequencies)

Evaluation of Neighborhood Services	1976 AHS*	ISR Subsample
Public Transportation		
Adequate	66.8%	59.6%
Inadequate	31.8	38.5
Inadequate enough to move	1.4	1.9
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4123)
Public Schools		
Adequate	98.1%	96.0%
Inadequate	0.9	3.0
Inadequate enough to move	1.0	1.0
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(3942)
Shopping		
Adequate	88.7%	86.8%
Inadequate	10.1	11.9
Inadequate enough to move	1.2	1.3
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4455)
Police Protection		
Adequate	92.7%	90.9%
Inadequate	5.6	7.7
Inadequate enough to move	1.7	1.4
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4206)
Fire Protection		
Adequate	97.3%	96.2%
Inadequate	2.2	3.4
Inadequate enough to move	0.5	0.4
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4277)
Hospitals and Clinics		
Adequate	89.5%	87.4%
Inadequate	9.5	11.4
Inadequate enough to move	1.0	1.1
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4368)

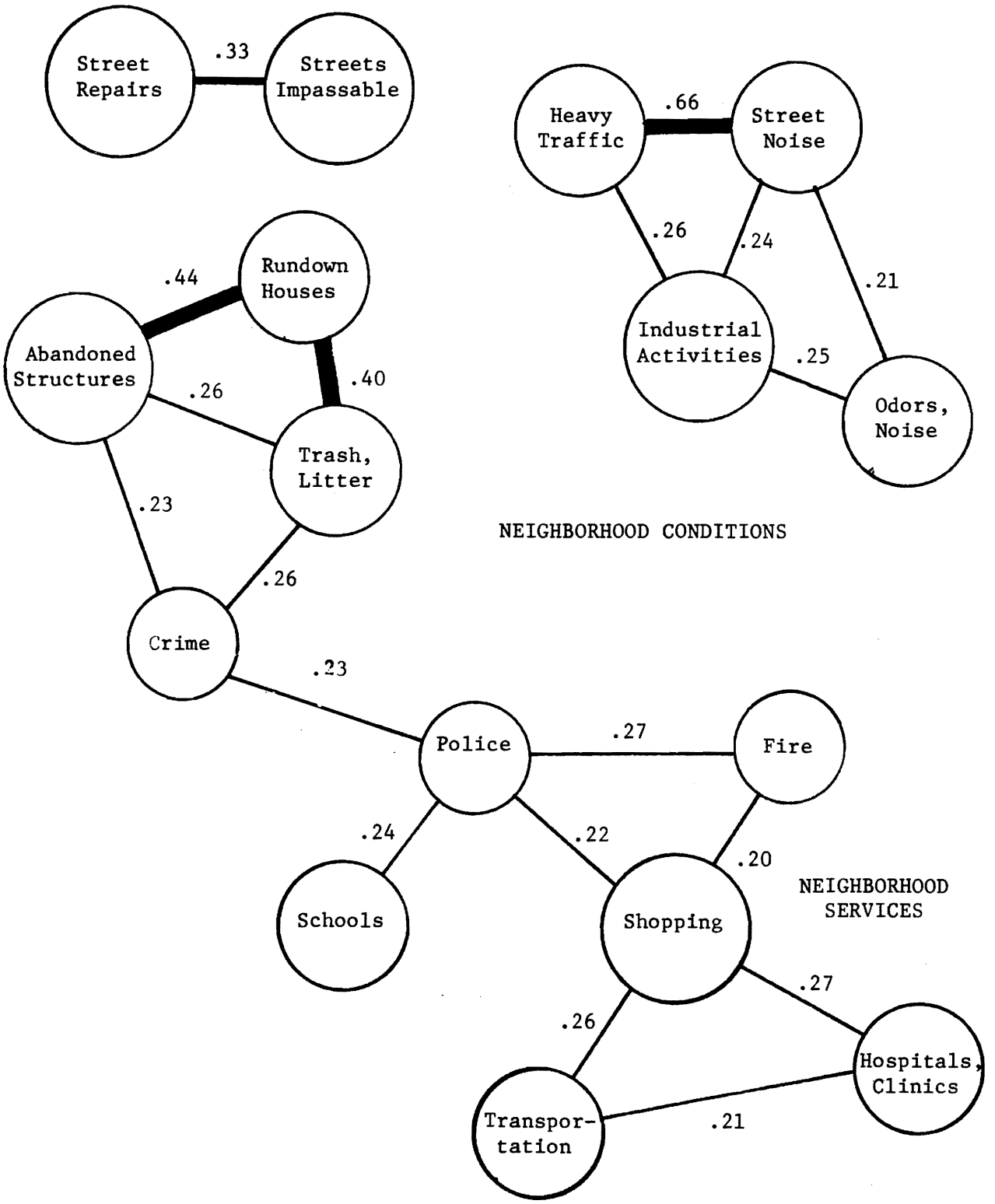
*Distributions are approximations since data presented in Annual Housing Survey: 1976 Part F do not include the proportion of missing data associated with each service.

of the zero-order correlations are represented by the three thicknesses of lines. Only correlations of .20 and above are shown.

In general, the diagram depicts three groups for the neighborhood conditions which, for the most part, are separate and distinct from the group of service evaluations. One group is characterized by neighborhoods thought to be plagued by crime and deteriorated and dilapidated buildings, a second is represented by neighborhoods with non-residential uses producing stressful environmental conditions while a third group of neighborhoods is viewed as containing poor street and road conditions. The only link between the neighborhood conditions and public services is shown by the line between the evaluations of neighborhood crime and police protection ($r = .23$).

FIGURE 1

Product-Moment Correlations



II. ATTRIBUTES AS PREDICTORS OF NEIGHBORHOOD RATINGS

Perceptions of Conditions and Neighborhood Ratings

The conceptual model suggests that the way people evaluate attributes of their neighborhood is determined by their perceptions of those attributes; that is, an evaluation is made in part on the basis of whether or not the attribute in question is perceived to exist. Because the AHS questions dealing with specific neighborhood conditions combine individual perceptions and evaluations, it is not possible to test this proposition. It is possible however to consider the links between the perceptions of conditions and the overall neighborhood rating. If such links were stronger than relationships between condition evaluations and the overall neighborhood rating, consideration could be given to eliminating the evaluative portions of questions 102 (b and c) from the AHS. This issue will be addressed in the next section.

Using Multiple Classification Analysis, predictor variables reflecting the perceived presence or absence of neighborhood conditions were examined in relation to the neighborhood rating scores.[1] As shown in Table 5, perceptions covering the 12 conditions account for 16.7 percent of the variance in ratings.

By far, perceptions of the existence or absence of trash and litter and neighborhood crime are the most important predictors of the overall neighborhood rating while the presence or absence of streets in disrepair, poor street lighting and airplane noise has virtually no bearing on how people evaluate their neighborhoods.

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[1] Multiple Classification Analysis (MCA) is the multivariate technique used throughout this paper. It is used to examine the relationship between each of a set of independent variables and a dependent variable while holding constant the effects of all other predictors. In addition to a multiple R^2, the statistics include an eta coefficient indicating how each independent variable relates to the dependent variable and a beta coefficient for each independent variable indicating its relative importance in the total variance explained. For a complete discussion of the technique, see Andrews, et al., (1975).

TABLE 5

Neighborhood Rating Predicted by Perceptions of Conditions
(multiple classification analysis)

Neighborhood Conditions	Eta Coefficient	Beta Coefficient
Trash, Litter	.26	.142
Crime	.23	.134
Rundown Houses	.24	.109
Abandoned Structures	.19	.089
Streets Impassable	.14	.075
Street Noise	.20	.071
Heavy Traffic	.18	.069
Industrial Activities	.16	.061
Odors, Smoke	.15	.060
Streets Need Repair	.10	.036
Poor Street Lighting	.07	.023
Airplane Noise	.06	.008
Percent of Variance Explained (Adjusted R^2)		16.7

Evaluation of Attributes and Neighborhood Ratings

The conceptual model also suggests that neighborhood satisfaction is influenced by the evaluations of specific neighborhood attributes (conditions and services) and the characteristics of the respondents making the evaluations. Indeed, national studies have clearly demonstrated that those relationships exist although the evaluations of specific neighborhood attributes contribute significantly more than respondent characteristics to overall neighborhood satisfaction (cf. Campbell et al., 1975).

The Annual Housing Survey data not only enable us to corroborate earlier findings, but they can be used to answer a number of questions relevant to the formulation of public policy. One question deals with the relative importance of various neighborhood conditions in explaining peoples' overall neighborhood ratings--What conditions do people view as being most salient to their

satisfaction with the neighborhood environment? A similar question can be asked about the importance of different public services in peoples' overall neighborhood ratings. And finally, do peoples' evaluations of conditions or services contribute more to explaining how people rate their neighborhoods? The questions have been addressed through a series of multiple classification analyses, the results of which are summarized in Table 6.

In the first analysis, only the evaluations of conditions are considered, and together they explain nearly a fourth (23 percent) of the variance in the responses to the neighborhood rating question, approximately 6 percentage points more than the amount of variance accounted for by the perceptions of conditions. Because of their stronger predictive power we can conclude that evaluation measures are more appropriate to our understanding of neighborhood quality and therefore should be retained.[1]

The pattern of relationships between individual evaluations and the overall neighborhood rating is similar to that found in the perception model. The two most important conditions are those dealing with neighborhood crime and upkeep; respondents who were bothered by crime and trash and litter in their neighborhoods were most likely to rate their neighborhoods poorly. Other important condition evaluations which contribute to the explanation of neighborhood ratings are those dealing with rundown housing and street noise. On the other hand, evaluations of airplane noise, odors and smoke, and streets in need of repair have little bearing on how people rated their neighborhoods.[2]

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[1] The question of how evaluations and perceptions of neighborhood conditions relate to specific quantities or levels of those conditions is perhaps a more interesting and important issue, particularly from a policy perspective. Unfortunately, the AHS does not provide such measures.

[2] It should be noted that although the rank ordering of conditions in both the perception and evaluation models is about the same, the specific rankings of importance of each condition are quite different. For example, data from Table 5 and 6 show that the presence or absence of abandoned housing is relatively more important than the way abandoned housing is evaluated.

TABLE 6

Neighborhood Rating Predicted by
Evaluations of Conditions and Services
(multiple classification analysis)

		Beta Coefficient		
Neighborhood Conditions	Eta Coefficient	Conditions Only	Services Only	Conditions and Services
Crime	.33	.154 (1)		.110 (4)
Trash, Litter	.34	.148 (2)		.143 (1)
Rundown Houses	.29	.108 (3)		.118 (3)
Street Noise	.29	.090 (4)		.121 (2)
Streets Impassible	.17	.071 (5)		.058 (11)
Heavy Traffic	.27	.066 (6)		.046 (13)
Industrial Activities	.21	.064 (7)		.070 (8)
Poor Street Lighting	.21	.060 (8)		.057 (12)
Abandoned Structures	.24	.055 (9)		.063 (10)
Airplane Noise	.15	.052 (10)		.068 (9)
Odors, Smoke	.21	.048 (11)		.043 (14)
Streets Need Repair	.16	.044 (12)		.035 (15)
Neighborhood Services				
Police Protection	.22		.175 (1)	.086 (5)
Transportation	.13		.123 (2)	.077 (6)
Clinics and Hospitals	.16		.089 (3)	.077 (7)
Public Schools	.12		.054 (4)	.030 (16)
Shops	.12		.051 (5)	.028 (17)
Fire Protection	.08		.005 (6)	.015 (18)
Percent of Variance Explained (adjusted R^2)		23.0	7.6	24.7

When a similar analysis is performed using the evaluations of neighborhood services as predictors, it is found that they collectively account for 7.6 percent of the variance in the neighborhood ratings, or approximately one-third of that explained by the evaluations of neighborhood conditions. The most important evaluations in accounting for the way people felt about their neighborhoods are those dealing with police protection and public transportation; people who felt these services were inadequate were most likely to rate their neighborhoods poorly.

In the third analysis where the sets of neighborhood services and conditions are considered simultaneously, the proportion of variance explained is increased to 24.7 percent. In other words, the marginal contribution of the service evaluations to our understanding of the overall neighborhood ratings is quite small suggesting that the way people evaluate the neighborhoods within which they live is primarily affected by the specific conditions around them which are viewed as bothersome.[1]

Intensity of the Desire to Move and Neighborhood Ratings

In the development of those parts of the questionnaire and codes dealing with neighborhood conditions, the 1976 AHS has incorporated questions which combine moving intentions as well as perceptions and evaluations. Respondents are first asked whether or not each condition exists, then whether or not it bothers them, and finally, whether it bothers them enough to consider moving.[2] For each condition, responses are combined in a single code where the most positive response (condition doesn't exist) is code 1 and the worst response

[1] We have ignored for the moment the finding based on other research that peoples' assessment of their neighborhoods is largely influenced by their feelings about their neighbors and the dwelling in which they live (Scharf, 1978; Marans and Wellman, 1978).

[2] Questions about neighborhood services ignore the perceptual component. Respondents are asked first whether or not the service is adequate or satisfactory and then whether it is so inadequate or unsatisfactory that the respondents would like to move from the neighborhood.

(condition exists and is so objectionable that R wants to move) is coded 4. If we assume that each condition is valued equally, then the number of 4's coded for each respondent can be considered a measure of intensity of his/her desire to move from the neighborhood.[1]

In an exploratory attempt to examine the combined effects on the overall neighborhood ratings of negative evaluations as reflected by the "desire to move" responses, indices measuring the "Intensity of the Desire to Move" were constructed. For each respondent, three index scores were determined; one for conditions, one for services, and one for responses to both conditions and services. Each "Intensity of the Desire to Move" Index was based on the sum of responses to the evaluative questions where the respondent received a "1" for each condition or service that bothered him/her enough to want to move and "0" for all other responses. For example, when only the 12 conditions are considered, a given respondent could have a minimum score of 0 and a maximum score of 12. The maximum score for the service index would be 6 while the maximum score for the combined index would be 18.

The distribution of respondents' scores for the three indices are highly skewed. As we have seen in the distributions of evaluations reported earlier, relatively few Americans felt that neighborhood conditions and services were bothersome enough to warrant their changing neighborhoods. Among those who said they wanted to change neighborhoods because of poor conditions, four in ten mentioned one condition, three in ten mentioned two conditions and three in ten mentioned three or more conditions. (See Table 7) With respect to services, only one in twenty respondents mentioned at least one which was so

[1] The codes for each service range from 1 (service is adequate) to 3 (service is so inadequate that R wants to move). The same assumption can be made about the number of 3's reflecting a measure of intensity of the respondent's desire to move from the neighborhood.

inadequate that they wanted to move. Most (seven in ten) mentioned one inadequate neighborhood service while no one reported that he/she wanted to move because of five or six inadequate services.

TABLE 7

Intensity of the Desire to Move Indices
(weighted distributions)

Number of Desire to Move Responses	Neighborhood Conditions	Neighborhood Services	Conditions and Services
0	88.5	95.3	86.3
1	4.8	3.3	5.8
2	3.2	1.0	3.5
3	1.7	0.3	1.7
4	0.7	0.1	1.1
5	0.5	0	0.7
6	0.3	0	0.4
7-12	0.3	--	0.5
Total	100.0	100.0	100.0
Number of Observations	4526	4526	4526

Relationships between each of the three Indices and the overall neighborhood rating were examined and are reported in Table 8. The pattern of relationships is similar to that found in the earlier analysis involving attribute evaluations; with respect to the intensity of the desire to move, conditions are more important than public services.

TABLE 8

Relationship between Intensity of Desire to Move Indices and Overall Neighborhood Rating

Intensity of Desire to Move Index	Product-Moment Correlation	Percent of Variance Explained
Conditions Only	.41	16.8
Services Only	.24	5.8
Conditions and Services	.42	17.6

In both instances, poorly rated neighborhoods are associated with a greater number of attributes which are bothersome enough to warrant the respondents expressing an interest in moving.

III. RESPONDENT CHARACTERISTICS AND NEIGHBORHOOD QUALITY

How do selected subgroups of the population rate their neighborhoods and evaluate each condition and service? Are there particular groups who rate their neighborhoods poorly? Do any of these subgroups report an unusually high or low incidence of bothersome conditions or inadequate services? In order to answer these questions, bivariate relationships were examined between the overall neighborhood rating and each condition and service evaluation and several background characteristics of respondents. These characteristics included race, education and age of the head, family income, whether or not there were preschool or school-aged children in the household, ownership status and where the respondent lived.[1]

Population Subgroups and Neighborhood Ratings

Significant variations in subgroup responses are found in their overall evaluations of neighborhood quality. Bivariate relationships between each of several background characteristics and the neighborhood rating question indicate that higher ratings were reported by whites, by people who owned their houses, and by those with high family incomes and high levels of educational attainment. Most of these relationships are maintained in a multivariate analysis when the effects of respondent characteristics are considered simultaneously. As seen in Table 9 the bundle of background characteristics account

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[1] In our attempt to identify a usable place of residence variable, we found that the AHS code contained only two measures that were worthy of consideration--V3 (CENT CITY RESIDENCE) and V4 (URBAN STATUS). Unfortunately, both had large numbers in the "other" categories but by running the variables against each other, the proportion of "other" in the subsample could be reduced. Nonetheless, many respondents could not be classified by the size of place of their residence. Those that could were classified into three global groups--urban residents (N = 1506), rural non-farm residents (N = 1957) and rural farm residents (N = 256). With about 30 percent of our subsample not classified, the N for our size of place variable was substantially smaller than the number of cases available for the other variables to be used. So as to avoid losing cases in the regression analysis we anticipated, the place of residence variable was treated separately from the other background characteristics. See Appendix Table 2 for the bivariate relationship between V3 and V4.

for 11.3 percent of the variance in the overall neighborhood rating with respondents who were poorly educated, young, black and renting being less satisfied with their neighborhood than well-educated respondents who were older and white and owned their homes.

TABLE 9

Neighborhood Rating Predicted by Background Characteristics
(multiple regression analysis)

Background Characteristics	Eta Coefficient	Beta Coefficient
Educational Attainment	.18	.154 (1)
Age of Head	.11	.150 (2)
Tenure	.22	.131 (3)
Family Income	.21	.119 (4)
Race of Head	.18	.112 (5)
Children under 6	.08	.029 (6)
Children, 6-17	.06	.019 (7)
Percent of Variance Explained (adjusted R^2)		11.3

Population Subgroups and Attribute Evaluations

Although the analyses of subgroups of the population show significant differences in their neighborhood ratings, very modest variations in subgroup responses are found in their evaluations of each neighborhood condition and service. The analyses reveal that blacks were more likely than others to be living in neighborhoods with abandoned structures and inadequate public transportation while renters, more than homeowners, were found in neighborhoods with industrial activity and poor transportation. In each instance, the measure of association is weak (Tau B = .13). Moreover, the relationships are further weakened when the effects of all background characteristics on each evaluation are considered simultaneously. Using Multiple Classification Analysis for each of the twelve condition evaluations and six service evaluations, the background characteristics account for no more than 3.2 percent of

the variance (public transportation) while for the other evaluations, they explain an average of only 1.5 percent.

Relative Effects of Respondent Characteristics

Although the background characteristics of the respondents have little bearing on the way individuals evaluated specific neighborhood attributes, we have shown where individually and collectively, several are related to the overall neighborhood ratings. When we examine the combined effects of both sets of attribute evaluations together with the background characteristics, the relationship is maintained. In fact, the background characteristics raise the multiple R^2 from 24.7 percent to 31.3 percent, suggesting that the link between the overall neighborhood rating and the background of the respondents is stronger than the neighborhood rating-service evaluation link. While all background characteristics except the presence or absence of children contribute to the explanation of neighborhood ratings, the two most important are the head's educational attainment and race. Limited education and being black are most likely to be associated with neighborhood dissatisfaction.

Effects of Place of Residence

We noted earlier that because of missing data in the place of residence variable, it was not included in the multivariate analyses which examined the effects of respondent characteristics on specific evaluations and the overall neighborhood rating. With approximately one-third of the respondents unclassified according to their place of residence, we chose to examine bivariate relationships between the three size of place classes on one hand and specific attribute evaluations and the overall neighborhood rating on the other.

Unlike the other respondent characteristics considered, place of residence is significantly related to several neighborhood condition and service evaluations. Table 10 shows the strength of these relationships and indicates where conditions are most bothersome and where services are most inadequate. Among the neighborhood conditions, street problems appear to be most prevalent in rural non-farm areas while other stressful environmental conditions are most likely to be found in urban areas. Problems such as litter and abandoned structures are just as likely to be bothersome in rural areas as in urban areas.

With the exception of public schools, people in rural areas were much more likely than urban residents to say the neighborhood services were inadequate. For example, two out of three in both rural farm and rural non-farm settings reported inadequate public transportation compared to one in four from urban areas.[1]

When overall neighborhood ratings are examined for people living in urban and rural settings, moderate differences are found (Tau B = .13). Whereas 46 percent of the rural farm population said their neighborhood was an excellent place to live, 39 percent of the rural non-farm population and 28 percent of the urban population gave such favorable ratings. (See Table 11) Similarly, less than one in ten from rural farm areas rated their neighborhoods as fair or poor compared to two in ten living in urban areas.

In order to determine if the simultaneous effects of evaluations and respondent characteristics differed for people who lived in urban and rural areas, a series of regression analyses was undertaken. These analyses are summarized in Table 12 and reveal that a) irrespective of where people live, characteristics such as educational level and age are associated with the

[1] With the exception of street problems, the evaluations of conditions and services in rural farm and rural non-farm areas were similar.

TABLE 10

Measure of Association Between Evaluations of Neighborhood Conditions and Services and Size of Place

Neighborhood Conditions	Condition is Most Bothersome in:	Tau B
Poor Street Lighting	Rural Non-Farm (9.0%)	-.25
Streets Needing Repair	Rural Non-Farm (19.5%)	-.18
Industrial Activities	Urban (3.5%)	.16
Airplane Noise	Urban (8.1%)	.14
Street Noise	Urban (16.1%)	.13
Heavy Street Traffic	Urban (12.5%)	.12
Neighborhood Crime	Urban (12.5%)	.12
Rundown Houses	Urban (7.8%)	.10
Odor, Smoke	Urban (7.0%)	.07
Streets Impassable	Rural Farm (11.3%)	-.07
Abandoned Structures	Urban (2.5%)	.05
Trash, Litter	Urban (10.6%)	.03

Neighborhood Services	Service is Most Inadequate in:	Tau B
Transportation	Rural Farm (67.2%)	-.35
Fire Protection	Rural Farm (19.0%)	-.24
Hospitals and Clinics	Rural Non-Farm (24.3%)	-.22
Shopping	Rural Farm (26.9%)	-.19
Police Protection	Rural Farm (18.6%)	-.14
Public Schools	Rural Non-Farm (5.4%)	-.03

TABLE 11

Overall Neighborhood Rating,
by Place of Residence
(percentage distribution)

Overall Neighborhood Rating	Rural Farm	Rural Non-Farm	Urban	All
Excellent	45.6%	38.8%	27.9%	32.6%
Good	46.0	47.7	51.6	49.9
Fair	8.4	12.2	17.3	15.0
Poor	--	1.3	3.3	2.4
Total	100.0%	100.0%	100.1%	99.9%
Number of observations	(239)	(1707)	(1386)	(3332)

way they rate their neighborhoods, b) condition evaluations are a more powerful set of predictors in urban areas than in rural areas and c) service evaluations contain approximately the same predictive power in rural areas as they do in urban areas.[1]

TABLE 12

Neighborhood Rating Predicted by Evaluations and Respondent Characteristics--Urban-Rural Differences in R^2

Predictors	All	Urban	Rural Non-Farm	Rural Farm-Non-Farm
Condition Evaluations Only	23.0	26.9	17.4	16.0
Service Evaluations Only	7.6	8.6	8.3	7.8
Condition and Service Evaluations	24.7	29.1	18.4	17.3
Evaluations and Respondent Characteristics	31.3	36.0	23.7	22.7
Number of Observations	4385	1353	1656	1888

[1]For the sample as a whole, neighborhood upkeep (trash, litter) is the most important predictor of the overall neighborhood rating. When examining the relative importance of predictors in the analysis for urban and rural areas, street noise is the most important predictor in both instances.

IV. SUMMARY OF FINDINGS

Using a subsample of the 1976 AHS, this paper has examined a particular subset of variables dealing with neighborhood quality issues. Specifically, it has considered relationships between peoples' evaluations of neighborhood conditions and services and their overall assessments of their neighborhood as places to live. The examination revealed that:

1. Most Americans were quite content with their neighborhoods. More than four in five rated them as excellent or good places to live, while only 2 percent gave them poor ratings. In absolute numbers, however, this amounts to nearly 2 million households whose occupants viewed themselves as being in unsuitable residential environments.

2. The extent to which adverse neighborhood conditions exist and bother people varies from condition to condition. Whereas 35 percent of the sample, or somewhat more than a third, said their neighborhood contained street or highway noise, only 13 percent reported the noise as being bothersome. On the other hand, 16 percent of the respondents reported crime in their neighborhoods but more than two-thirds were bothered by it.

3. Conditions which were bothersome to the greatest number of neighborhood residents were noise, heavy traffic, crime, litter and poorly maintained streets.

4. Among public services, transportation was viewed as inadequate by the greatest number of respondents (40 percent). Shopping and health care facilities were next, with 13 percent saying they were unsatisfactory.

5. Despite the presence of adverse environmental conditions or inadequate public services, relatively few residents felt that such conditions and services were so bad that they wanted to move from their neighborhoods. Bothersome conditions associated with a desire to move were crime, traffic, noise, industrial activities, abandoned and rundown housing, and odors and smoke.

6. The presence or absence of environmental conditions (as measured by respondents' perceptions) accounts for only one-sixth of the variation in peoples' ratings of overall neighborhood quality. The evaluations of neighborhood conditions, however, are stronger predictors accounting for nearly a quarter of the variation in neighborhood ratings.

7. Peoples' feelings about conditions around them contribute more to neighborhood ratings than the ways they assess local public services. In fact, after condition evaluations are taken into account,

service evaluations contribute only marginally to our understanding of the overall neighborhood ratings.

8. Most important to the prediction of neighborhood ratings are the evaluations of neighborhood and housing upkeep, street noise and crime. Among the service evaluations considered, feelings about police protection, public transportation, and health care facilities are most important to peoples' feelings about their neighborhoods.

9. A relatively small proportion of respondents (4.5 percent) mentioned more than two conditions as being bothersome enough to warrant their moving from their neighborhoods. A smaller proportion (1.4 percent) mentioned two or more inadequate services which conjured up thoughts of changing residence.

10. Population subgroups differed significantly in their overall neighborhood ratings. Poor ratings were recorded for respondents who were poorly educated, young, black and renting their homes.

11. Of the characteristics of respondents considered, only race and housing tenure were associated with evaluations of selected neighborhood conditions and services. Blacks more than whites were more likely to report inadequate transportation and abandoned structures which were bothersome while renters, more than homeowners, complained about inadequate transportation and industrial activity around them. In all likelihood, these evaluations reflect the attributes of neighborhoods occupied by many in these population subgroups. Taken as a whole, however, the background of the respondents has little effect on how individuals evaluate specific neighborhood attributes.

12. People living in rural and urban areas evaluated specific neighborhood attributes differently. Rural residents were far more critical in their assessments of all services (except public schools) and street conditions than were urban residents. On the other hand, people in urban areas were most likely to complain about stressful environment conditions such as industrial activity, noise, crime and traffic.

13. People in rural areas tended to be more positive in their overall neighborhood ratings than those living in urban areas.

14. Attribute evaluations and background characteristics explain more of the variance in neighborhood ratings in urban areas than they do in rural areas.

15. Although condition evaluations are a more powerful set of predictors of neighborhood ratings in urban than in rural areas, service evaluations contain the same predictive power in both urban and rural areas.

V. CONCLUSIONS AND RECOMMENDATIONS

There are a number of issues which emerge as a result of the analysis of the 1976 Annual Housing Survey's data on neighborhood quality. One stems from the fact that the bundle of attribute evaluations explains only a quarter of the variance in the overall neighborhood rating. In part, this is attributed to the limited scope of the attributes under consideration. These attributes, with one possible exception (crime), relate to either the neighborhoods' physical environment or to the public services available to its residents. We noted earlier that other studies have demonstrated the importance of social attributes of neighborhoods in people's assessments of their quality. Similarly, attitudes toward the individual dwelling and the larger community can influence people's assessments of the neighborhood environment. If one of the purposes of the AHS is to develop a better understanding of people's feelings about where they live, consideration should be given to the collection of data covering people's evaluations of their housing and non-physical aspects of their neighborhoods.

Our examination of the interrelationships among the physical conditions affecting the overall neighborhood rating revealed a considerable degree of multicollinearity. Indeed some of the intercorrelations were extremely high, and our explorations of the data using a stepwise regression technique revealed a somewhat different ordering of importance of predictors from that which was reported in the multiple classification analysis. For example, when the 12 condition evaluations were used as predictors in the MCA, street noise ranked fourth in importance while heavy traffic ranked sixth. Using a stepwise regression, street noise maintained its relative importance while heavy traffic was relegated to the least important predictor in the group. Different multivariate approaches with highly correlated predictors sometimes yield

different orderings which present problems of interpretation for the analyst and policy maker. Such problems could be avoided in part if one of the highly correlated predictors were removed from the analysis. Based on a review of the pattern of intercorrelations presented earlier and the limited usefulness of several attribute evaluations in explaining variation in neighborhood ratings, consideration might be given to eliminating some of the conditions from the list which people are expected to evaluate. If all conditions were retained in the AHS, pattern variables could be created at the analysis stage by combining highly correlated items which are conceptually related.

A third issue worthy of exploration is whether the list of services offered to respondents is appropriate. The 1977 Annual Housing Survey added questions about the adequacy of outdoor recreation facilities but eliminated questions about fire protection. Although our analysis of the 1976 data for the entire sample indicates that deleting fire protection from the list of services was justifiable, an examination of the relationship between fire protection evaluations and neighborhood ratings <u>in urban areas</u> suggests that the deletion may have been hasty. In the multivariate analysis for urban residents, fire protection was a more important predictor of neighborhood quality than the adequacy of public schools, shopping and public transportation.

In a similar vein, it is questionable whether the services being considered are appropriate and meaningful to people in rural and nonmetropolitan sections of the country. For example, in a study of northern Michigan, respondents mentioned rubbish collection and sanitary sewers when asked about public services important to their residential quality. In future annual housing surveys, consideration might be given to the types of public services respondents are asked to evaluate.

It is becoming increasingly clear from this exercise and other data analyses that certain neighborhood questions may be inappropriate for those living on farms or in rural settlements within nonmetropolitan areas of the country. Consideration should be given to the broader issue of what constitutes a quality living environment for people in such areas and where appropriate, a completely different set of questions about the residential environment might be asked.

In another context, we have questioned the value of having evaluative questions so closely linked to the concept of residential mobility. From a policy perspective, data on people's moving intentions are important, as are factors contributing to these intentions. Currently, people's plans to move are tied to the worst possible evaluation they can give for any attribute. It is suggested that in addition to their inability to produce reliable measures of the moving plans of respondents, question wording for the annual housing survey's 102c and 103b may not yield the most reliable negative evaluation for each attribute under consideration. If it can be systematically demonstrated that these problems do exist, then consideration should be given to eliminating the 102c and 103b portions of the evaluative questions and adding a separate question dealing with people's intentions to move.

Finally, we have demonstrated where evaluations of environmental conditions are more useful than perception of the presence or absence of conditions in our understanding of neighborhood quality. Evaluations are measured on a continuum of responses depicting the intensity of people's feelings about the conditions. Whether or not the question linking the negative evaluation with the desire to move is eliminated, the issue of scaling of evaluative responses needs to be addressed in the planning of future annual housing surveys.

APPENDIX
TABLE 1

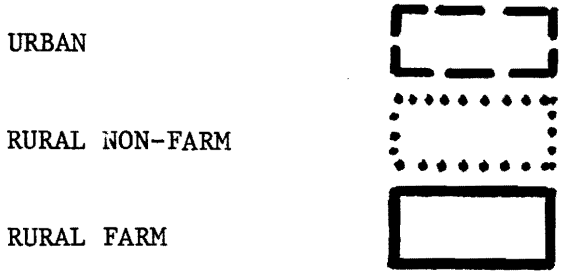
Respondent Characteristics
Comparative Data - 1976 Annual Housing Survey and ISR Subsample
(weighted frequencies)

Respondent Characteristics	1976 AHS	ISR Subsample
Race		
White	88.0%	88.3%
Nonwhite	12.0	11.7
Total	100.0%	100.0%
(Number of observations)	(63150)	(4526)
Housing Tenure		
Owns	64.7%	65.0%
Rents	35.3	35.0
Total	100.0%	100.0%
(Number of observations)	(63150)	(4526)
Whether Children 6-17		
Yes	31.2%	30.5%
No	68.8	69.5
Total	100.0%	100.0%
(Number of observations)	(N.A.)	(4525)
Family Income		
Less than $5,000	19.8%	20.9%
$5,000 - 9,999	22.0	22.4
$10,000 - 14,999	20.1	19.5
$15,000 - 24,999	24.3	24.1
$25,000 or more	13.8	13.1
Total	100.0%	100.0%
(Number of observations)	(63150)	(4526)

APPENDIX
TABLE 2

Creation of "Place of Residence" Variable
(absolute number of occupied units)

Urban Status (V4)	Central City Residence (V3): Central City	SMSA Not Central City	Other	Total
Urban	306	109	518	933
Rural Farm-- greater than 10 acres	0	26	202	228
Rural Farm-- less than 10 acres	0	2	9	11
Rural-NonFarm-- greater than 10 acres	0	30	180	210
Rural-NonFarm-- less than 10 acres	0	135	1319	1504
Other	465	1029	192	1640
Total	765	1381	2380	4526



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