COMMUNITY ATTACHMENT IN MASS SOCIETY*

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Survey research data permit examination of two models of community attachment in mass society. The first model, derived from the work of Toennies and Wirth, treats increasing population size and density as key independent variables influencing local community attachment. An alternative model derived from the work of W. I. Thomas, Park and Burgess, focuses on length of residence as the primary independent variable. The alternative approach views the local community as a complex system of friendship, kinship, and associational networks into which new generations and new residents are assimilated while the community passes through its own life-cycle. Goodman's modified multiple regression analysis provides consistent support for the alternative model, while little empirical support is found for the Toennies-Wirth model.

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Sociologists have long been concerned with the effects of urbanization and industrialization on the social fabric of communities (cf., Reissman, 1964; Short, 1971; Warren, 1972). One problem that has generated a substantial amount of scholarship is the influence of population size and density on patterns of social participation and community attachment (Fischer, 1972; Hauser, 1965; Morris, 1968). In this paper, we will use survey research data to explore some of these basic sociological issues of local community organization, especially those factors which account for strong or weak community attachments.

Two models of the local community have come to dominate the thinking and research of contemporary social scientists. These models explicate the work of competing theorists of the early Chicago school of urban sociology who sought to specify the factors which account for the presence or absence of local social bonds and community sentiments. Their divergent perspectives on the local community generate quite different models of social behavior in the urban setting.

The first model we call the linear development model because linear increases in the population size and density of human communities are assumed to be the primary exogenous factors influencing patterns of social behavior. This model has its intellectual roots in the philosophical writings of Ferdinand Toennies (1887), which postulated the transformation of society from Gemeinschaft to Gesellschaft. In this view, urbanization and industrialization alter the essential character of society from that based on communal attachments to an associational basis. The writings of Louis Wirth gave strong impetus to contemporary formulations of this approach. In “Urbanism As a Way of Life,” Wirth (1938) saw the essential character of urban society resulting from (a) an increased number of population, (b) density of settlement, and (c) heterogeneity of inhabitants and group life. The outcomes of these variables were said to include a substitution of secondary for primary contacts, a weakening of the bonds of kinship, and a declining social significance of the local community.

Other members of the Chicago school of urban sociology resisted this view, in particular W. I. Thomas (1967), Robert E. Park and Ernest W. Burgess (1921, 1925) who sought to account for the range of “social worlds” and social solidarities which emerged in the urban metropolis. For them, the local community was not a residue but a social construction which had its own life-cycle and
reflected ecological, institutional and normative variables. Their research and the writings of subsequent social scientists supply the basis for an alternative model of community attachment which we call the systemic model.

The systemic model is, in part, based on historical and anthropological materials which question the existence of a Gemeinschaft in pre-industrial societies because of their internal discontinuities, complexity, and especially because of their dependence on some variant of bureaucratic or associational institutions. The theoretical formulations of Toennies and his disciples are incomplete and tautological at essential points. Much of the Toennies tradition is a normative treatment of modern life which reflects a reasoned moral position, but it is not suited for empirical research. The fundamental problem with the Gemeinschaft-Gesellschaft approach, however, is that it fails to explain the extent and forms of community organization found in modern society. Research on the social structure of urbanized Western societies is rich in those empirical observations which cannot be accounted for by this sociological tradition.

In the systemic model, community organization is treated as an essential aspect of mass society. It is a structure which has ecological, institutional, and normative dimensions. The local community is viewed as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and on-going socialization processes. At the same time it is fashioned by the large scale institution of mass society. Indeed, it is a generic structure of mass society, whose form, content, and effectiveness vary widely and whose defects and disarticulations reflect the social problems of the contemporary period.

Community—that is the geographical based community—manifests diffuse boundaries and exhibits different intensity and scope of participation depending, among other factors, on a person's position in the social structure and life cycle stage. One can identify the social fabric of communities in systemic terms by focusing on local social networks and abstracting out those relations that are directly linked to the occupational system. The remaining geographically based social relations constitute the social fabric of human communities, be they neighborhoods, local communities, or metropolitan areas.

ISSUES AND METHOD

To explore adequately hypotheses about the social fabric of communities derived from the linear development and systemic models, more than case study data are required; sample surveys become essential. However, we are aware of the limitations inherent in survey research data for examining local social networks. There is obviously an element of arbitrary delimitation both in the questions asked and the sampling procedures used in survey research. Social networks require investigation by careful and detailed participant observation. In addition, frequency of community contact and participation should take into consideration available opportunities. However, survey research strategies have been developed which recognize these complex issues and which produce relatively meaningful measures of social participation and local community attachment.

We equally recognize the various cultural definitions in different types of communities as well as the different meanings persons will attribute to questions in a standardized survey research interview. Moreover, community participation and attachment in an advanced industrial society has its own incongruities. In the context of contemporary mass society the notion of the community of "limited liability" seems appropriate (Janowitz, 1951). This notion emphasizes that in a highly mobile society people may participate extensively in local institutions and develop community attachments yet be prepared to leave these communities if local conditions fail to satisfy their immediate needs or aspirations.

A body of research literature has emerged on formal and informal community participation and attachment since the publication of The Community Press in an Urban Setting (1951) which roughly supports the systemic model (cf., Edwards and Booth, 1973). However, the measures which have been employed are often incomplete and the sample design and size limited so as to prevent comprehensive statistical analysis. A large-scale and detailed survey from the Royal Commission on Local Government in England makes possible more comprehensive exploration of the impact of increased population size, density and residential mobility on local
community organization.¹

That our sample was drawn from Great Britain has certain advantages for the purposes at hand, especially because its relatively high degree of cultural homogeneity enables us to highlight pertinent variables. The population is living under a single unified system of central and local government, although there is administrative variation according to size. The regional differences to be found in Wales and Scotland are excluded; and England at the time of the sample had a relative absence of racial and ethnic enclaves, although the concentration of foreign born was increasing. We expected that the findings would converge with those already encountered in the United States but, because of these factors, the relations would be more clear-cut and pronounced.

The sample survey was conducted by Research Services, Ltd. in March 1967. It was designed to assist the Royal Commission on Local Government in England in making recommendations to restructure the size and format of local government units. In this survey 2199 adults were interviewed. A stratified random sample was drawn from one hundred local authority areas throughout England (excluding London) in numbers “correctly proportionate to the population which is contained within three main types of local authority of different population sizes within the Register General’s Standard Regions.” The survey collected information from individuals on their social position, attitudes, and social behavior both inside and outside their local communities. Data were also gathered on the demographic characteristics of the respondents' local jurisdictions.

As stated, the purpose of our reanalysis of this body of survey data is to examine empirically some of the sociological factors which influence the character of local community participation and attachment. However, our main thrust is not a direct search for multi-variate findings of the highest aggregate explanatory value. Instead, the strategy is to explore a series of interrelated propositions which seek to examine the implications of the two models of the local community.

Our initial expectation, derived from the rejection of the linear development model, is that population size and population density will not be associated with significant differences in community participation and attachments. Under the Toennies-Wirth approach, the larger the population size and the greater the density of an area, the more attenuated would be community participation and attachments. Of course, some differences would be expected, especially between the largest and smallest population concentrations, but the overall relevance of size and density as explanatory variables should be limited.

By contrast, the systemic model focuses on length of residence as the key exogenous factor influencing community behavior and attitudes. The major intervening variables are friendship and kinship bonds and formal and informal associational ties within the local community. The local community is viewed as an ongoing system of social networks into which new generations and new residents are assimilated, while the community itself passes through its own life-cycle. Since assimilation of newcomers into the social fabric of local communities is necessarily a temporal process, residential mobility operates as a barrier to the development of extensive friendship and kinship bonds and widespread local associational ties. Once established, though, such bonds strengthen community sentiments.

This is not to suggest that length of residence is the only independent variable affecting community attachment. The available literature leads us to investigate whether a person’s social position and stage in his life-cycle likewise influence his friendship, kinship, and associational ties within the community (Axelrod, 1956; Laumann, 1973; Wilensky, 1961). Moreover, the influence of population size and density on community behavior and attitudes must also be determined and controlled if we are to compare the relative merits of the two models. We have therefore constructed and analyzed a general model of community attachment which will examine the impact of five independent

¹We wish to acknowledge the assistance of Dr. Mark Abrams, Director, Survey Unit, British Social Science Research Council, for arranging access to the basic survey materials collected for the Royal Commission on Local Government in England. This survey was conducted by Research Services, Ltd., in March 1967 and was published under the title, Community Attitudes Survey: England (London: HMSO, 1969).
variables (population size, density, length of residence, social class, and stage in life-cycle) on friendship, kinship, and associational bonds within the community, and the influence of all eight factors on local community attitudes and sentiments.

VARIABLES AND MEASURES

Community Attitudes and Sentiments

The Survey contains three items which may be used to measure community attitudes and sentiments. These are:

1. Is there an area around here where you are now living which you would say you belong to, and where you feel "at home"?

2. How interested are you to know what goes on in... (Home Area)? NB. In the actual interview questionnaire, the phrase "home area" was replaced, in all questions using it, with the name of the given local community.

3. Supposing that for some reason you had to move away from... (Home Area), how sorry or pleased would you be to leave?

Item 1 was given as a yes-no response. Responses to item 2 were scored into those who expressed strong interest in the affairs of the local community and those who expressed little or no interest in them. Responses to item 3 were divided into those who said they would be very sorry or quite sorry to leave the local community and those who said they would not be sorry to leave their local community.

Local Social Bonds (Networks)

To measure friendship and kinship bonds within the local community, an additional series of questions were asked, among them:

1. How many people would you say you know who live in... (Home Area)?

2. How many adult friends do you have who live within ten minutes walk of your home?

3. How many adult relatives and in-laws do you have who live within ten minutes walk from your home?

4. Taking all your adult friends that you have now, what proportion of them would you say live in... (Home Area)?

5. Taking all your adult relatives and in-laws, except the very distant ones, what proportion of them live in... (Home Area)?

Responses to item 1, relative number of local acquaintances, were scored as those who said they knew none or only a few people in their community and those who said they knew many or very many people in their community. Item 2 was categorized into those having five or fewer friends and those having more than five friends. Item 3 was divided into those having two or fewer relatives living nearby and those having more than two. Items 4 and 5 were categorized as half or less and more than half of all friends/relatives residing in the local community.²

To measure the degree of the respondent's participation in formal associations within the local community, an extensive question was asked regarding participation in the following types of organizations:

A. organizations connected with the respondent's work, such as trade unions, business clubs, and professional associations
B. public bodies or committees concerned with community affairs
C. organizations connected with politics
D. organizations connected with education and training
E. associations connected with churches or other religious groups
F. charitable organizations
G. civic or community groups such as a rentpayers association or parent-teacher association
H. formal social clubs such as a sports team, dance club, automobile club, hobby club, or fraternal organization
I. any other formal association not described above.

²In the survey, five response categories were used for the two questions regarding proportion of adult friends and relatives residing in the local community. The first four categories included: none of them; half or less of them; most of them; and all of them. An additional category was added to each respective question for those who claimed they didn't have any friends and/or relatives or only had one or two relatives. These respondents were not included in the first four categories because the relative proportions would not be meaningful and, therefore, were scored as missing data for those questions. A number of people also failed to respond to other items on the questionnaire, which reduced slightly the sample size for those particular items.
For each membership listed by the respondent, it was noted whether the place of participation was inside or outside the designated local community. Respondents were categorized into those who participated in fewer than two local community organizations and those who participated in two or more.

Similarly, a question was asked regarding informal participation in local social activities. Included under this item were visits to cinemas, live theatre, concerts, recitals, football, rugby or cricket matches, race tracks, bingo sessions, ten-pin bowling, public dances, swimming pools, golf, tennis, public parks or gardens, or drives into the countryside. Again we noted whether participation in such activities occurred inside or outside the local community, with the categories being the same as for formal organizational memberships.

Independent Variables

Population size was measured by the size of the respondent's local authority. Five size categories forming a rural-urban continuum were used. The continuum consisted of (1) rural districts; (2) municipal boroughs and urban districts up to 30,000; (3) municipal boroughs and urban districts 30,000-60,000; (4) municipal boroughs and urban districts 60,000-250,000; and (5) municipal boroughs and urban districts over 250,000, including conurbations.

Population density was measured by persons per acre in the local ward or parish where the respondent resided. Six density categories were obtained ranging from under one person per acre to over twenty persons per acre. Length of residence in the local community was scored into six categories ranging from less than one year to over twenty years/born there. Socio-economic position was also scored into six categories ranging from unskilled to professionals. Non-working housewives and retired persons were classified by last job held. Finally, life-cycle contained five stages including twenty-one to twenty-nine, thirty to thirty-nine, forty to forty-nine, fifty to sixty-four, and sixty-five and older.

To analyze these data and examine the relative merits of the linear development and systemic models we used the Goodman modified multiple regression method (Goodman, 1972a, 1972b, 1973). This method is designed specifically for multivariate causal analysis of survey data which do not meet assumptions of measurement scale, additivity, homoscedasticity, and independence of error terms required in conventional regression analysis. In short, the Goodman method analyzes relationships ("odds-ratios") among cell frequencies of multi-level factorial designs and provides effect parameters analogous to partial slopes in path analysis and measures of association analogous to the squares of zero-order, partial, multiple, and multiple-partial correlation coefficients. The Goodman method also provides estimates of the magnitude of all interaction effects and their levels of statistical significance.

Since effect parameters computed by the Goodman method are easiest to interpret when variables are dichotomized, and because our statistical analysis requires multi-level factorial designs encompassing five or more levels of cross-classification, it is helpful to dichotomize variables where statistical properties warrant. However, if curvilinear relationships exist between some variables, the curvilinearity must be taken into consideration by including polytomous variables in the cross-classifications.

Examinations of bivariate frequency distributions among our variables showed that community size (i.e., the rural-urban continuum) exhibited curvilinear relationships with a number of indicators of community involvement and sentiment. Further examination of the bivariate distributions between the five independent variables and each local social bond and each community sentiment suggested the following breakdowns of independ-
ent variables for multiple cross-classification: 4

Community size (rural-urban continuum):
1. Rural communities (24%)
2. Urban communities up to 60,000 (32%)
3. Urban communities over 60,000 (43%)

Population Density
1. Up to ten persons per acre (55%)
2. Ten or more persons per acre (45%)

Length of Residence
1. Less than one generation (twenty years) (57%)
2. More than one generation (including born here) (43%)

Social Class
1. Blue-collar occupations (53%)
2. White-collar occupations (including farm owners) (47%)

Life-cycle (age)
1. Between twenty-one and forty-nine years old (54%)
2. Fifty years of age and older (46%)

Our initial procedure was to construct ten six-way cross-classified contingency tables with each cross-classification encompassing the five basic independent variables along with either a social network or attitudinal variable. 5 Next, modified multiple regression effect parameters of all saturated models were computed to estimate the main and interaction effects of size, density, length of residence, social class, and life-cycle stage on each social bond (network) and each community sentiment. Results revealed that a multitude of small interaction effects exist but that none was statistically significant even at the .05 probability level. Under such circumstances matters are simplified and we can recompute effect parameters from unsaturated models to compare the main (direct) effects of the five independent variables on each social bond and community sentiment.

RESULTS

Table 1 presents the direct effects (Goodman’s Betas) and standardized effects (Beta*) of community size, density, length of residence, social class, and life-cycle stage on the seven indicators of local social bonds. 6 The parameters indicate that the effects of population size and density on local friendship, kinship, and associational bonds are mixed and not highly significant. Noteworthy is the finding that persons residing in large urban areas tend to have more extensive social ties than those residing in rural communities. The differential effects of residing in large urban communities as opposed to rural communities are especially pronounced with respect to relative number of acquaintances and memberships in formal organizations.

On the other hand, length of residence has positive and highly significant direct effects on all local social bonds with the exception of participation in informal social activities. The effects of length of residence are particularly strong on relative number of acquaintances in the community, number of relatives living nearby, and proportions of all friends and relatives residing in the local community. Social class and life-cycle (age) have specific and limited effects on local social bonds. Higher status individuals tend to have smaller proportions of their friends and relatives residing within their own communities and fewer relatives living nearby. They also tend to belong to more formal organizations in the community. Both these links reflect the greater mobility of higher status individuals and their more extensive reliance on formal or secondary social networks.

As we anticipated, involvement in the

4 The standardized effect parameters (Beta*) are computed by dividing each Beta by its standard deviation. With large samples, the Betas are normally distributed with a mean of zero and a unit variance. Therefore, to determine statistical significance, one consults a table of areas under a normal curve. For example, a Beta* (B* abbreviated) of greater absolute value than 1.96 is statistically significant at the .05 probability level. Likewise, a B* of greater absolute value than 2.58 is statistically significant at the .01 probability level. The Betas and their standard deviations were computed using the Goodman and Fay ECTA program at The University of Chicago Computation Center. This straightforward program may be acquired by writing Leo Goodman, Department of Sociology, University of Chicago.

5 Each contingency table thus contained 3 x 2 x 2 x 2 x 2 = 96 cells.
social fabric of communities declines with advanced life-stage. Most affected by older age are participation in informal social activities, local kinship ties, and membership in formal organizations. However, for comparative purposes, two main points emerge. First, neither social class nor stage in life-cycle are as powerful or consistent in affecting local social bonds as is length of residence. Second, neither large population size nor high density significantly weaken local friendship and kinship bonds or formal and informal social ties.

Let us now consider the relative impact of the five independent variables on local community sentiments, that is, the direct effects of population size, density, length of residence, social class, and life-cycle on (1) whether a person feels a sense of belonging to his local community, (2) whether he is interested in what goes on in his community, and (3) whether he would be sorry to leave his community if he had to. The effect parameters and their standardized values are presented in Table 2.

Again, we observe that population size and density have relatively weak and, for the most part, insignificant effects on local community sentiments. Conversely, length of residence has positive and statistically significant effects on all three community sentiments. Examining the three community sentiments separately, it is evident that whether a person feels a sense of community is clearly a function of

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Number of Friends</th>
<th>Number of Relatives</th>
<th>Number of Organization Memberships</th>
<th>Participation in Informal Social Activities</th>
<th>Number of Acquaintances</th>
<th>Percent Friends in Community</th>
<th>Percent Relatives in Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of residence</td>
<td>.266 .233</td>
<td>.664 .540</td>
<td>.310 2.51</td>
<td>.214 1.55</td>
<td>.722 5.50</td>
<td>.578 5.30</td>
<td>.804 5.39</td>
</tr>
<tr>
<td>Social class</td>
<td>.014 .13</td>
<td>-.228 -.185</td>
<td>.128 .95</td>
<td>.102 .74</td>
<td>.040 .50</td>
<td>-.152 -.135</td>
<td>-.158 -.04</td>
</tr>
<tr>
<td>Life-cycle (age)</td>
<td>-.036 -.32</td>
<td>-.532 -.270</td>
<td>-.200 -1.49</td>
<td>-.156 -.24</td>
<td>-.170 -.13</td>
<td>-.030 -.27</td>
<td>-.318 -.19</td>
</tr>
<tr>
<td>Density</td>
<td>-.142 -.136</td>
<td>.044 .35</td>
<td>-.062 -.47</td>
<td>.064 .46</td>
<td>-.052 -.40</td>
<td>.042 .38</td>
<td>-.014 -.09</td>
</tr>
<tr>
<td>Size</td>
<td>Rural .034 .27</td>
<td>.036 .13</td>
<td>-.144 -.57</td>
<td>.106 .74</td>
<td>-.076 -.31</td>
<td>-.038 -.19</td>
<td>-.186 -.59</td>
</tr>
<tr>
<td></td>
<td>Small urban -.150 -.111</td>
<td>-.174 -.128</td>
<td>-.062 -.42</td>
<td>-.350 -.23</td>
<td>-.116 -.80</td>
<td>-.072 -.60</td>
<td>-.354 -.19</td>
</tr>
<tr>
<td></td>
<td>Large urban -.076 .65</td>
<td>.144 1.03</td>
<td>.206 1.55</td>
<td>.154 .99</td>
<td>.194 1.34</td>
<td>.112 .91</td>
<td>-.168 -.85</td>
</tr>
</tbody>
</table>

NOTE: B* > 1.96, effect is statistically significant at .05 probability level.
length of residence. Although low population density and small community size (i.e., residing in a rural community) tend to have a positive influence on sense of community, their impact is relatively small when compared with length of residence.

Interest in the affairs of the local community is apparently influenced most by a person’s position in the social structure. Higher status persons have the skills and orientations to articulate their interests in community affairs. Furthermore, their social position implies a greater stake in the community which usually generates concern with community affairs. The effect parameters also show that community interest increases with length of residence and tends to decline with older age. However, contrary to the linear development model, interest in the affairs of the community tends to increase with community size. Ceteris paribus, rural communities have a weak negative effect on community interest whereas large urban areas have a moderate positive influence on interest in local community affairs.

Whether a person would regret leaving his local community is affected most by length of residence followed closely by population density and then by advanced life-cycle stage. Since population density was shown to have essentially no effect on involvement in the social fabric of communities (Table 1), we may infer that in high density areas, housing conditions or other social or physical features diminish community attractiveness. This supports the notion of the community of “limited liability,” namely, that despite participation in the social fabric of the community a person may wish to leave because of specific undesirable conditions.

Our analysis thus far of the direct effects of the five independent variables on local social bonds and community sentiments suggests that length of residence is the key exogenous factor influencing local community attachment. You will recall that the systemic model also stipulates that local friendship, kinship and associational ties foster strong community sentiments. Modified multiple regression analysis of basic cross-classifications of each social network variable with each community sentiment reveals this to be the case. All twenty-one effect parameters (Betas) are positive and highly significant.

The interesting research issue, though, is what are the relative contributions of friendship bonds, kinship bonds, and formal and informal community ties to the formation of strong community sentiments? Table 3 gives us the answer, by providing the effect parameters and standardized effects parameters from a modified multiple regression analysis of three five-way cross-classifications. Each multiple cross-classification included number of friends, number of relatives, memberships in formal organizations, and participation in informal social activities, along with a particular community sentiment.

The results indicate that number of friends is the overall most important type of social bond influencing community sentiments. Other types of local social bonds also exhibit some specific and significant partial effects. Number of relatives living nearby, for

<table>
<thead>
<tr>
<th>Local Social Bonds</th>
<th>Sense of Community</th>
<th>Interest in Community</th>
<th>Sorry to Leave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>B*</td>
<td>B</td>
</tr>
<tr>
<td>Number of friends</td>
<td>.370</td>
<td>3.51</td>
<td>.320</td>
</tr>
<tr>
<td>Number of relatives</td>
<td>.434</td>
<td>4.12</td>
<td>.022</td>
</tr>
<tr>
<td>Organization memberships</td>
<td>.050</td>
<td>.48</td>
<td>.500</td>
</tr>
<tr>
<td>Informal social activities</td>
<td>.226</td>
<td>2.14</td>
<td>.268</td>
</tr>
</tbody>
</table>

NOTE: B* > 1.96, effect is statistically significant at .05 probability level.
example, has a strong effect on a person's sense of community as well as a moderate effect on his desire to remain in the community. However, having greater numbers of relatives living nearby has essentially no impact on a person's interest in community affairs, once the degree of friendship and formal and informal ties are taken into account. Conversely, membership in local formal organizations has a strong direct effect on community interest but little independent influence on sense of community or desire to remain in the community. Finally, controlling for number of friends and relatives living nearby and for memberships in local formal organizations, participation in informal social activities has a moderate influence on sense of community and community interest but virtually no effect on desire to remain in the community.

In analyzing the effects of different social bonds we found that rather than replacing primary contacts, formal secondary ties foster greater numbers of local primary contacts (cf., Axelrod, 1956; Bell and Boat, 1957). Controlling for the main effects of community size, density, and length of residence, memberships in formal organizations have a direct effect of .33 on number of friends and a direct effect of .65 on number of acquaintances. The corresponding coefficients of determination ($r^2$) between number of formal organizational memberships and numbers of friends and acquaintances are .50 and .79, respectively.

As a final step in comparing the relative merits of the two models of community attachment, let us assess the relative amount of variation in each local social bond and each community sentiment that is accounted for by the main effects of population size, density, length of residence, social class, and stage in life-cycle. This is done with the Goodman method by first computing maximum-likelihood estimates of cell frequencies under different models (structural equations) using an iterative procedure described by Goodman (1972b:1080-85). The estimated cell frequencies generated by the different models are then compared with the observed cell frequencies by computing Chi-square based on either the conventional goodness-of-fit statistic or the likelihood-ratio statistic.

In the Goodman method, the Chi-square values serve as measures of unexplained variation. Thus, the smaller the Chi-square value (i.e., the better the estimated frequencies correspond to the observed frequencies) under a given model, the stronger is the explanatory power of the independent variable or variables in the model. By computing the relative reduction in Chi-square values from various models containing different combinations of independent variables with the dependent variable, one obtains measures of association roughly analogous to coefficients of determination, multiple determination, and partial determination in conventional regression analysis.

Table 4 provides pertinent coefficients of determination, multiple determination and partial determination calculated using the likelihood-ratio statistics. The first five rows (coefficients of determination) indicate the percent reduction in unexplained variation in each dependent variable accounted for by the main effects of each of the five independent variables. The next four rows (coefficients of multiple determination) indicate the relative reduction in unexplained variation in each dependent variable accounted for by the main effects of different combinations of independent variables. The last row (coefficient of partial determination) indicates the relative reduction in unexplained variation in each dependent variable accounted for by length of residence after the main effects of population size, density, social class, and stage in life-cycle have been taken into account.

For the most part, the coefficients speak for themselves. In six of ten cases, length of residence alone explains a greater percent of variation in local social bonds and community sentiments than do the combined effects of population size, density, social class, and stage in life-cycle. Note also the large increments in the coefficients of multiple determination when the effects of length of residence are added to the effects of the other four independent variables, and the high coefficients of partial determination between length of residence and each social bond and community sentiment when the other four independent variables are held constant. These results, together with the effect parameters presented in Tables 1 and 2, clearly indicate that length of residence plays a far more important role in assimilation into the social fabric of local communities than does
Table 4. Goodman's Coefficients of Determination ($r^2$), Multiple Determination ($R^2$) and Partial Determination ($r_{12}^{2}$) between Independent Variables and Indicators of Local Community Attachment

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables ($X_i$)</th>
<th>Dependent Variables ($X_i$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Friends</td>
<td>No. of Relatives</td>
</tr>
<tr>
<td>Length of residence ($X_2$) $r_{12}^{2}$ =</td>
<td>.33</td>
<td>.55</td>
</tr>
<tr>
<td>SES ($X_3$) $r_{13}^{2}$ =</td>
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<td>.11</td>
</tr>
<tr>
<td>Age ($X_4$) $r_{14}^{2}$ =</td>
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<td>Density ($X_5$) $r_{15}^{2}$ =</td>
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<td>.00</td>
</tr>
<tr>
<td>Size ($X_6$) $r_{16}^{2}$ =</td>
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<td>.02</td>
</tr>
<tr>
<td>$R_{1.14}^{2}$ =</td>
<td>.01</td>
<td>.14</td>
</tr>
<tr>
<td>$R_{1.56}^{2}$ =</td>
<td>.18</td>
<td>.02</td>
</tr>
<tr>
<td>$R_{1.34+6}^{2}$ =</td>
<td>.18</td>
<td>.16</td>
</tr>
<tr>
<td>$R_{1.23+456}^{2}$ =</td>
<td>.52</td>
<td>.81</td>
</tr>
<tr>
<td>$r_{12.34+56}^{2}$ =</td>
<td>.39</td>
<td>.78</td>
</tr>
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population size, density, social class, or stage in life-cycle.\textsuperscript{7}

**INFERENCES AND COMMENT**

The most general inference to be drawn from this analysis is that the systemic model based on length of residence is more appropriate than the linear development model based on population size and density for the study of community attachment in mass society. In drawing more specific inferences about the relative merits of the linear development and systemic models, we must underscore that we are dealing with a cross-sectional sample. But three conclusions emerge repeatedly from our analysis. First, location in communities of increased size and density does not weaken bonds of kinship and friendship. Instead, length of residence is a central and crucial factor in the development of these social bonds. Second, location in communities of increased size and density does not result in a substitution of secondary for primary and informal contacts. Rather, the results suggest that formal ties foster more extensive primary contacts in the local community. Third, increased population size and density does not significantly weaken local community sentiments. But community sentiments are compatible with desire to avoid the negative features of local community life.

Yet a persistent question remains; namely, the difference between these empirical results and the outlook developed by Louis Wirth. It can, of course, be argued that Wirth had insufficient empirical data—which was the case, especially data which could be statistically analyzed; that he was selective in his observation and that his concern with social planning led him to accept Toennies' model as a metaphor for social criticism. But another explanation is in order which delimits the scope of our findings. This explanation reinforces the idea that Wirth was examining a slice of social reality and that we are also examining a slice of social reality—hopefully with the advantages that accrue from his efforts.

Wirth was writing at a time in which cities in the United States—particularly the city of Chicago—had been expanded by massive waves of foreign-born immigrants. The patterns of migration and urban expansion drew these immigrants into the inner and densely settled portions of the metropolis. It was also a period of relative stability of the smaller communities of the United States, especially rural communities. Wirth no doubt was aware of the elements of intense social cohesion which developed in the urban community.\textsuperscript{8} But in the dense inner city, he saw what he thought was a lack of integration or assimilation of these population groups into the social fabric of the urban community. In retrospect, he failed to give sufficient emphasis to the temporal sequence of assimilation; while he focused on increased population size and density, variables which operate continuously and with a time lag. Had he “controlled” for length of residence, the differences in community attachment under conditions of increased urbanization would not have been as pronounced as he concluded.

\textsuperscript{7}The role of length of residence (residential mobility) in accounting for assimilation into community social structure has also been highlighted by the research of Henry McKay (Shaw and McKay, 1969). McKay's historical analysis of black communities in Chicago showed that communities where blacks have resided for the longest length of time have experienced decreasing delinquency rates, while those communities which have experienced black invasion most recently continue to exhibit high upward slopes of delinquency rates.

In the contemporary setting length of residence requires careful analytical appraisal. Of course, length of residence is influenced by population growth. But we use length of residence to indicate ecological, social organizational, and normative processes. Length of residence reflects the impact of large scale organizations and advanced technology on the life chances and values of the residents of communities in mass society. Therefore, length of residence of a person is not to be thought of primarily as an individualistic or voluntaristic act. It is in good measure the impact of the industrial order in the allocation and reallocation of employment and transportation opportunities. There is merit in speaking of this process as the social construction of community—a term offered by Gerald Suttles in elaborating the older notion of the social world of the metropolis (Suttles, 1972). The idea of the social construction of communities involves not only the impact of large scale institutional factors, but the consequence of cultural tradition and practices and the response of political institutions and associations based in the local community.

\textsuperscript{8}Everett Hughes, one of Wirth's close colleagues at Chicago, made the astute comment that "Louis used to say all those things about how the city is impersonal—while living with a whole clan of kin and friends on a very personal basis" (Short, 1971:xxix).
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