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FURTHER CONSIDERATION OF INDICATORS OF
COMMUNITY ATTACHMENT *

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ABSTRACT. Two studies of contradictory results concerning models of community attachment are briefly reviewed, one of which reported strong support for a 'systemic' model while the other placed greater emphasis on the relationship of size of place with attachment. Using data from 27 communities located in Iowa, measures used in both studies are replicated to the extent possible. Length of residence, age, and local social ties, important elements in the 'systemic' model of community attachment, are more strongly related to attachment than is size of place in this restudy.

Kasarda and Janowitz (1974) described two models of community attachment in mass society — the linear-development model and the systemic model. Both were based on the work of pioneering social scientists. The linear-development model was constructed from the work of Toennies (1887) and Wirth (1938). Kasarda and Janowitz (1974, p. 328) labeled this 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". Toennies' predicted societal transformation from *gemeinschaft* to *gesellschaft* plus Wirth's suggestion of weakening kinship bonds and stress on secondary rather than primary contacts led to the prediction of decreased emphasis on the social importance of the local community. But Kasarda and Janowitz noted that there have been numerous studies that have refuted these notions. Thus they hypothesized that the two key variables in the linear-development model, population size and population density, would not be significantly related to community attachment.

The systemic model, on the other hand, stressed the importance of length of residence, position in the social structure, and stage in the life cycle in the construction of community attachment. Based on the work of Park and Burgess (1921, 1925) and Thomas (1967), this model allows for the influence of both mass society and of friendship and kinship networks, formal and informal associational ties, and family life on attachment to the local com-

munity. The key variable was thought to be length of residence, although social position (measured by occupation) and stage in the life cycle (measured by age) were suggested to play important rôles as well. The implied hypothesis was that these three variables would be significantly related to community attachment.

Using survey data gathered in Great Britain, Kasarda and Janowitz examined the alternative hypotheses and found strong support for the systemic model of community attachment. Length of residence was a significant predictor of each of their three measures of community attachment; occupational class was significantly related only to the degree of interest in local community affairs and age was not associated with any measure to a statistically significant degree. Population density was negatively related to the extent of sorrow expressed about the possibility of leaving the community; that is, those living in more densely settled areas noted less regret about leaving the community if they had to. But population size never was a statistically significant factor; although the relationship was not strong, interest in local affairs increased with population size, which was directly opposite the prediction based on the linear-development model.

Questioning the adequacy of both the theoretical and methodological formulations of the Kasarda and Janowitz study, Buttell *et al.* (1979) replicated the analysis with data from a statewide survey in Wisconsin. In the work of Buttell *et al.*, population size and age were the most important indicators of community attachment, not length of residence. These results were not surprising to Buttell *et al.* (1979, p. 477) because they believed that "the social and physical decay occurring in large American cities seemingly should have some effect on the satisfactions with and social attachments to these large urban areas". In the usual though nonetheless true *caveat*, Buttell *et al.* call for further research on community attachment because of the differences between their results and those of Kasarda and Janowitz. This paper replicates the two studies to the extent possible in an attempt to determine the relative importance of the linear-development and systemic models of community attachment.

I. PROCEDURES

Data to examine the two models are available from a study of 27 communities conducted in 1975. These communities were selected from a six-county

region of north-central Iowa and vary in size from 200 to 32 000 residents; 10 had from 200 to 499 inhabitants, 4 from 500 to 999, 8 from 1000 to 2499, 4 from 2500 to 5000, and one — the regional center — had 32 000 residents. All were predominantly rural communities, with the larger ones serving agricultural needs through some industry as well. Within each community, households were identified from telephone and other utility lists, and a preferred respondent was designated within each household selected for a sample. This was done on an alternating female-male basis. If the preferred adult did not live in the selected household, then an adult of the opposite sex was asked to respond.

A mail questionnaire was used to gather data; returns totaled 4627, or 78.7% of those eligible. Checks against census data and interview data obtained from a nonrespondent subsample indicated that the original respondents provided an accurate sample of local residents (Goudy, 1978). For this paper, the data have been weighted according to the proportion of the total six-county population represented by each community size category because the communities were sampled disproportionately from the different sizes.

Community size (number of inhabitants) and population density (population per acre of nonagricultural land within the incorporation limits of the community), the two key variables in the linear-development model, were obtained from 1970 census materials. Length of residence, age, annual family income, and education, important variables in the systemic model, were obtained in the mail questionnaire¹. Length of residence and age were asked in years; income [(1) less than \$3000; (7) \$25 000 and over] and education [(1) never attended school, (8), advanced degree after completed college] were obtained in categories. In addition, four questions on local social ties modeled on those asked by Kasarda and Janowitz were included. They asked about the proportions of friends and relatives living in the respondent's community (none, half or less, most, all; those few respondents with two friends or relatives or less were collapsed together with those saying none lived there). Information was also obtained on the proportion of local people known (none, a few, many, very many) and the number of organizational memberships.

Two measures of community attitudes were selected as dependent variables. The first indicator, labeled community attachment, included three questions asked by Kasarda and Janowitz: "Would you say you feel 'at home' in this community?" [(1) definitely not or probably not, (2) probably,

(3) definitely]; "What interest do you have in knowing what goes on in this community?" [(1) no interest, (2) some interest, (3) much interest]; and "Suppose that for some reason you had to move away from this community. How sorry or pleased would you be to leave?" [(1) very pleased, quite pleased, it wouldn't make any difference one way or the other, (2) quite sorry, (3) very sorry]. This measure is also somewhat similar to the community-solidarity scale reported by Buttel *et al.* The second scale is called community satisfaction and is nearly identical to that labeled with the same name by Buttel *et al.* (1959). Three items were included: "Please indicate how satisfied you are with: your residence (house, apartment, room) as a place to live, your particular neighborhood as a place to live, and your community as a place to live". Responses varied from very dissatisfied (1) to very satisfied (5). This scale (community satisfaction) has a reliability of 0.72 (Cronbach's alpha) while reliability for the community-attachment scale is 0.64. The two

TABLE I

Multiple classification analysis summary statistics for the bivariate relationships between selected independent variables and community attachment and community satisfaction

Independent variables and categories	Weighted <i>N</i>	Community Attachment		Community Satisfaction	
		Unadjusted deviation	<i>Eta</i>	Unadjusted deviation	<i>Eta</i>
<i>Grand mean</i>		7.07		12.64	
Population size:			0.11 ^a		0.11 ^a
200-499	692	0.19		0.16	
500-999	1008	0.03		0.04	
1000-2499	1420	0.18		0.31	
2500-9999	1944	0.11		0.18	
10 000-49 999	3290	-0.19		-0.28	
Population density:			0.07 ^a		0.06 ^a
1.99/acre or less	1408	0.11		0.10	
2.00-3.99	2498	0.10		0.16	
4.00/acre or more	4448	-0.09		-0.12	
Length of residence:			0.33 ^a		0.27 ^a
4 years or less	1199	-0.71		-1.04	
5-9	757	-0.50		-0.50	
10-19	1504	-0.29		-0.05	
20-29	1481	0.04		-0.05	
30-39	1003	0.14		0.23	
40-59	1604	0.49		0.46	
60 years or more	806	0.85		1.01	

Independent variables and categories	Weighted <i>N</i>	Community Attachment		Community Satisfaction	
		Unadjusted - deviation	<i>Eta</i>	Unadjusted deviation	<i>Eta</i>
Age:			0.28 ^a		0.30 ^a
34 or younger	2059	-0.60		-0.96	
35-44	1332	0.01		-0.16	
45-54	1756	-0.08		0.14	
55-64	1362	0.20		0.35	
65-74	1168	0.62		0.70	
75 or older	677	0.54		0.95	
Annual family income:			0.14 ^a		0.15 ^a
\$5999 or less	1712	0.20		0.04	
\$6000-\$8999	1384	-0.24		-0.29	
\$9000-\$11 999	1623	-0.11		-0.32	
\$12 000-\$14 999	1439	-0.21	-0.11		
\$15 000 or more	2196	0.22	0.47		
Education:			0.03		0.05 ^a
11 years or less	1952	0.04		0.09	
12	2969	-0.05		0.00	
13-15	2045	0.03		0.07	
16 years or more	1388	-0.01		-0.23	
Friends living in this community:			0.29 ^a		0.21 ^a
None or half or less	2987	-0.57		-0.59	
Most or all	5367	0.32		0.33	
Relatives living in this community:			0.09 ^a		0.05 ^a
None	3425	-0.13		-0.12	
Half or less	3207	0.02		0.05	
Most or all	1722	0.23		0.15	
People known who live in this community:			0.38 ^a		0.24 ^a
None or a few	1018	-1.35		-1.24	
Many	4872	0.01		0.02	
Very many	2464	0.54		0.48	
Organizational memberships:			0.34 ^a		0.22 ^a
0	2216	-0.67		-0.69	
1	1372	-0.26		0.05	
2	1680	0.12		0.06	
3	1144	0.25		0.35	
4	854	0.66		0.49	
5 or more	1088	0.72		0.51	

^a Indicates the *eta* coefficient is statistically significant at the 0.05 level or beyond.

scales are quite strongly correlated (0.52; Pearson product-moment correlation); thus, they cover much the same area of interest.

II. RESULTS

Because Buttlet *et al.* found that not all results were of a linear nature, multiple classification analysis is used rather than the log-linear technique employed by Kasarda and Janowitz. The bivariate relationships between the 10 independent variables and the community-attachment and community-satisfaction scales are reported in Table I. The proportion of local people known, organizational memberships, length of residence, the proportion of friends living in the community, and age are most strongly related to community attachment, although only education is not a statistically significant variable. For community satisfaction, the most important variables are age and length of residence; in this instance, all the variables are significantly related to the scale scores².

Of the variables in the linear-development (population size, population density) and systemic (length of residence, age, annual family income, education) models, length of residence and age are clearly the most important indicators. Except for two minor deviations, the relationships of length of residence and age with community attachment and community satisfaction are linear; those who had spent more years in the community or who were older express greater attachment to and satisfaction with the community. Population size and population density are the fourth and fifth strongest indicators of these six variables, results more compatible with those of Kasarda and Janowitz than with those of Buttlet *et al.*

The relationships of the two dependent variables with measures of local social ties (friends living in this community, people known who live in this community, organizational memberships) also tend to be much stronger than those reported by Buttlet *et al.* In addition, these relationships tend to be linear, unlike three of the four reported by Buttlet *et al.* for social participation with friends and relatives. Only on the measure of contact with relatives do Buttlet *et al.* report higher associations than those noted in Table I of this paper. Kasarda and Janowitz also noted relatively strong relationships between indicators of local social ties and community attachment; eight of their 12 tests were statistically significant, and all indicated that greater ties at the local level led to greater attachment. Again, then, results in Table I

tend to confirm those of Kasarda and Janowitz more than those of Buttel *et al.*

But Buttel *et al.* are correct in noting that not all relationships are strictly linear. Indeed, the relationships between income and the dependent variables

TABLE II

Multiple classification analysis summary statistics for the regression of community attachment and community satisfaction on selected independent variables

Independent variables and categories	Community Attachment		Community Satisfaction	
	Adjusted deviation	Beta	Adjusted deviation	Beta
<i>Grand mean</i>	7.07		12.64	
Population size:		0.10 ^a		0.12 ^a
200-499	0.20		0.21	
500-999	-0.02		0.03	
1000-2499	0.16		0.28	
2500-9999	0.13		0.20	
10 000-49 999	-0.18		-0.29	
Length of residence:		0.27 ^a		0.15 ^a
4 years or less	-0.56		-0.66	
5-9	-0.40		-0.23	
10-19	-0.31		-0.01	
20-29	0.10		0.06	
30-39	0.10		0.17	
40-59	0.44		0.21	
60 years or more	0.64		0.49	
Age:		0.16 ^a		0.26 ^a
34 or younger	-0.28		-0.68	
35-44	0.08		-0.31	
45-54	-0.16		-0.01	
55-64	0.05		0.27	
65-74	0.44		0.73	
75 or older	0.25		0.92	
Annual family income:		0.16 ^a		0.21 ^a
\$5999 or less	-0.16		-0.51	
\$6000-\$8999	-0.33		-0.40	
\$9000-\$11 999	0.04		-0.07	
\$12 000-\$14 999	-0.07		0.09	
\$15 000 or more	0.35		0.64	
\bar{R}^2		0.155		0.152

^a Indicates the *beta* coefficient is statistically significant at the 0.05 level or beyond.

are curvilinear; those on both the income extremes are more attached to and satisfied with their communities than are those in the middle of the income distribution. In addition, population size, population density, and education deviate from monotonic linearity.

When selected variables representing the linear-development and systemic models are placed in a multivariate framework, again the superiority of the systemic model is observed (Table II)³. Population size, although a statistically significant indicator, is lowest in magnitude of the four independent variables on both tests. Length of residence is the most important indicator of community attachment. But both age and income are more important indicators of community satisfaction than is length of residence.

Although Buttel *et al.* found population size to be a very important variable in their multivariate tests, the results in Table II do not support this. Yet when the dependent variable nearly identical in both papers (community satisfaction) is used, the proportion of variance explained in this test is 15.2% and 15.5% in that reported by Buttel *et al.* Thus, approximately the same proportion of variance is explained in both, although the order of the explanatory factors differs somewhat.

The two more general indicators of local social ties are added to population size, length of residence, and age for a final multivariate test (Table III). Age continues as the predominant factor in relation to community satisfaction, although both the proportion of local people known and the number of organizational memberships are more strongly related to this dependent variable than are length of residence or population size. This pattern continues for community attachment; in this instance, however, both social-tie variables are stronger indicators than are age or the two remaining independent variables. Thus, local social ties are more important and population size is less important in this study than in that reported by Buttel *et al.*

III. DISCUSSION

Data from the Iowa respondents support the results reported by Kasarda and Janowitz more than they do those of Buttel *et al.*, who questioned the initial study. When examined with other indicators of the linear-development and systemic models, length of residence retains importance, especially in relation to the three-item scale called community attachment. This variable was critical in the findings reported by Kasarda and Janowitz. In a manner similar

TABLE III

Multiple classification analysis summary statistics for the regression of community attachment and community satisfaction on selected independent variables

Independent variables and categories	Community Attachment		Community Satisfaction	
	Adjusted deviation	<i>Beta</i>	Adjusted deviation	<i>Beta</i>
<i>Grand mean</i>	7.07		12.64	
Population size:		0.06 ^a		0.08 ^a
200-499	0.07		0.05	
500-999	-0.10		-0.07	
1000-2499	0.09		0.21	
2500-9999	0.10		0.18	
10 000-49 999	-0.08		-0.19	
Length of residence:		0.14 ^a		0.09 ^a
4 years or less	-0.20		-0.35	
5-9	-0.33		-0.16	
10-19	-0.14		0.16	
20-29	0.04		0.02	
30-39	-0.03		0.04	
40-59	0.22		0.01	
60 years or more	0.40		0.27	
Age:		0.15 ^a		0.23 ^a
34 or younger	-0.25		-0.67	
35-44	-0.02		-0.28	
45-54	-0.16		0.10	
55-64	0.09		0.27	
65-74	0.36		0.53	
75 or older	0.38		0.88	
People known who live in this community:		0.27 ^a		0.17 ^a
None or a few	-0.96		-0.84	
Many	0.01		0.00	
Very many	0.38		0.35	
Organizational memberships:		0.23 ^a		0.14 ^a
0	-0.46		-0.47	
1	-0.17		0.17	
2	0.15		0.10	
3	0.10		0.15	
4	0.45		0.26	
5 or more	0.47		0.22	
<i>R</i> ²		0.272		0.167

^a Indicates the *Beta* coefficient is statistically significant at the 0.05 level or beyond.

to that noted by Buttel *et al.*, however, age takes on far greater importance than that observed by Kasarda and Janowitz, especially on community satisfaction. Finally, local social ties are significantly related to both dependent variables in the bivariate and multivariate tests; these results second the conclusions of Kasarda and Janowitz and are somewhat contrary to those reported by Buttel *et al.*

Thus, the systemic model of community attachment receives support with these data; population size and population density, key variables in the linear-development model, are far less significant. But within the systemic model, age takes on greater importance than that observed by Kasarda and Janowitz, especially when it is related to community satisfaction. This is similar to the results posited by Buttel *et al.* Thus, different elements of the systemic model come to the fore depending on the empirical measure of attachment that is under investigation, but the systemic model still is upheld more than is the linear-development model. Obviously, the results are at least somewhat dependent on the variables selected for examination. The community-attachment scale definitely captures the psychological sense of community while the items in the community-satisfaction scale relate more to the living environment in which physical aspects may be more of a factor. Thus, care must be taken in constructing indicators of attachment in future studies.

No matter what analysis was attempted, the contribution of population size was relatively minor. This may have been due, at least in part, to a major limitation of these data, which are from residents of Iowa communities ranging from 200 to 32 000 inhabitants, or only the 'small' end of the continuum. Obviously nationwide data would be preferable because they would more readily approximate those of Kasarda and Janowitz from Great Britain; even statewide data would be better because then they would be more similar to those from the study of Buttel *et al.* of Wisconsin, although Iowa is even more lacking in large cities. The attenuated population continuum could limit the importance of this variable, although the largest population category was most negative toward satisfaction and attachment in both this study and that of Buttel *et al.* But they had a much longer continuum with which to work and found far greater differences among the size categories with both dependent variables. If the 'linear-development' model holds, however, differences between a community of 300 residents and one with 30 000 should have consequences similar to the comparison of a city of 50 000 with one of 5 million; in both comparisons, one city has 100 times more

inhabitants than the other. Examinations of the Iowa data not reported in this paper, however, suggest that there is as much variation in the relationships between sociodemographic variables and community attachment and satisfaction among communities in a single size category as there is across all the sizes. This suggests that variables other than population size are at work; inclusion of other indicators of community structure might be useful in future studies.

Population density is also flawed in this study; the range is extremely small among these Iowa communities. Comparisons are not possible, however, because Buttell *et al.* did not use it in their article. Other problems include the different methods of measuring local social ties. These limitations suggest that this study does not offer the final answer on the importance of the linear-development and systemic models of community attachment. For towns at the lower end of the population continuum, the variables in the systemic model are far better predictors of community attachment than are variables in the linear-development model. But the *caveat* noted by Buttell *et al.* concerning the necessity of future research still holds.

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NOTES

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¹ Kasarda and Janowitz used occupation as a measure of social position. Buttell *et al.* used annual family income and education. These two (income, education) are used in this paper because they were available for nearly all respondents while occupation was obtained only for respondents who were currently employed full-time.

² Because of the large number of cases in the calculations, relatively small values of *eta* are statistically significant. When the unweighted data were examined, however, the results were very similar to those reported in the tables. It should also be noted that variables were collapsed so that no categories with extremely small proportions of the total number of cases remained.

³ Population density and education were dropped from these calculations because of their low initial relationships with the dependent variables. In addition, the computer program employed in this analysis allowed for no more than five independent variables. Both population density and education were run as the fifth variable, but the results were not significantly different from those reported in Table II.

BIBLIOGRAPHY

- Buttel, F. H., Martinson, O. B. and Wilkening, E. A.: 1979, 'Size of place and community attachment: a reconsideration', *Social Indicators Research* 6, pp. 475-485.
- Goudy, W. J.: 1978, 'Interim response to a mail questionnaire: impacts on variable relationships', *The Sociological Quarterly* 19, pp. 253-265.
- Kasarda, J. D. and Janowitz, M.: 1974, 'Community attachment in mass society', *American Sociological Review* 39, pp. 328-339.
- Park, R. E. and Burgess, E.: 1921, *Introduction to the Science of Sociology* (University of Chicago Press, Chicago).
- Park, R. E. and Burgess, E.: 1925, *The City* (University of Chicago Press, Chicago).
- Thomas, W. I.: 1967, *On Social Organization and Social Personality* (edited by M. Janowitz), (University of Chicago Press, Chicago).
- Toennies, F.: 1887, *Gemeinschaft and Gesellschaft* (Fues's Verlag, Leipzig).
- Wirth, L.: 1938, 'Urbanism as a way of life', *American Journal of Sociology* 44, pp. 3-24.