

# PROGRESSIVISM IN ILLINOIS COMMUNITIES AS MEASURED BY LIBRARY SERVICES

ROBERT W. JANES  
*University of Illinois, Urbana*

## INTRODUCTION

The aim of this study is to discover the population characteristics of those Illinois communities which can be regarded as "progressive". Towns and cities which express progressivism are marked by a pattern of community services and a use of municipal resources different from other localities in the state. The progressive type, as the term suggests, are those places which are first to adopt certain policies or programs which serve or benefit the whole community and which are regarded as desirable for all localities. At least, such programs and policies, in time, come to be accepted by other municipalities after the innovation has been made in various progressive communities. These places can be regarded as the "pace-setters" in introducing into localities items such as public streetlighting, the city-manager, the planning commission, the mental health clinic, school consolidation, local art and recreational programs, the traffic engineer, human relations commissions and other functions which are expected to provide over-all services for the local population. In short, progressivism betokens allocation of a higher proportion of municipal funds and of the budget of other local governmental units for purposes which benefit the residents-at-large. The question to be answered here is, is it possible to discover the characteristics of the people who live in progressive localities?

The underlying purpose for seeking an answer to this question is to build up a body of information about conditions and influences in the towns and cities of Illinois which affect their response to the expanding challenges offered to community life. It seems likely that the current public debate revolving about the desirability and feasibility of increasing the amount of community support for services to local inhabitants will continue. Some understanding of the nature of the localities which now impose upon themselves a high burden for such services may cast light on both the capacity and desire of other communities to follow this trend.

## METHOD AND RESULTS

The first step was to select an index of progressivism. Such a measure would be one for which there was accurate report as to its presence and extent in various localities including smaller cities; it should be a service for which professional personnel were readily available so that any community which wished to avail itself of this function could do so at reasonable expense, and it should be a service which could vary in degree of adequacy where it is present. Library facilities and personnel appeared to satisfy these requisites, so the record of community library services was selected as the index. Communities with a high level of such services are assumed to be progressive.

The next step was to choose known characteristics which would describe the population composition of the communities of the state. Obviously, the volumes of the decennial U. S. Census of population offer the best set of pertinent and comparable data for this purpose. The Census reports eleven traits of population for all places over 2,500 in size. These traits could be statistically correlated with the information on library services available for all urban places. Then, population traits which showed a marked correlation with measures of a high level of library service would describe local populations which were progressive; those traits statistically associated with a low level of library services would indicate "non-progressive" localities; and, if a trait showed no relation with any of the library indices, it could be said to define a population make-up which was "neutral" to progressivism. The procedure followed was to correlate all population traits with all the items of information on library facilities reported for the communities of the state.

The sample of localities selected included all the places defined as urban in the U. S. Census of 1950 outside of the metropolitan area of Chicago, which was taken to include Cook, Dupage, Lake, Will and Kane counties. Towns and cities in the Chicago region were excluded because it was felt that the large number of commuter suburbs in the area represented a different class of communities in respect to expenditures for community services. The data on library facilities for the selected communities in the rest of the state

were compiled from the September, 1951 issue of *Illinois Libraries*, and these variables are shown in Table 1. Community characteristics were items reported in the *United States Census*, 1950 for all urban places and are shown in Table 1. Item 2 in this table, population increase from 1940 to 1950, was computed separately for the nine communities whose 1950 population was reported in the *Education Directory* as containing students in excess of ten per cent of the population. This correction was necessary because the 1950 census was the first to report students as community residents.

The averages and standard deviations of the 154 communities in the sample for all twenty-six variables were figured with the results also shown in Table 1. In respect to most items in the table, there is a broad range in the values for the items. This might be expected when communities range in size from 2,500 to more than 100,000 population. As a group of traits the library variables show greater variation, as for example, the per cent of population registered at the library, the per capita circulation, hours open per week and the two primary criteria of progressivism in library service—tax income and tax expenditure per capita. The only community variable which shows such extreme variation is per cent engaged in manufacturing. Certain other community variables such as median age and median school year completed show a relatively low range in values. In general, however, the range in the whole set of variables is such that product moment inter-correlations between all 26 items would

TABLE 1.—Averages and standard deviations of 26 measures of community characteristics and library facilities of 154 Illinois communities over 2500 population as of 1950.

| No.                        | Item   | Arithmetic Means | Standard Deviations |
|----------------------------|--|------------------|---------------------|
| <i>Community Variables</i> |  |                  |                     |
| 1                          | Size .....   | 11000.000        | 1639.000            |
| 2                          | % population increase 1940-1950.....                           | 15.866           | 2.373               |
| 3                          | Median age .....   | 33.271           | 3.531               |
| 4                          | % sixty-five years and older.....                              | 11.290           | 3.079               |
| 5                          | % non-white .....  | 2.872            | .964                |
| 6                          | Median school years completed.....                             | 9.510            | 1.078               |
| 7                          | % male in the labor force.....                                 | 78.202           | 7.498               |
| 8                          | % female in the labor force.....                               | 29.341           | 4.794               |
| 9                          | % engaged in manufacturing.....                                | 27.621           | 14.896              |
| 10                         | Median income .....  | 2771.400         | 568.800             |
| 11                         | % income less than \$2,000.....                                | 34.234           | 11.114              |
| <i>Library Variables</i>   |  |                  |                     |
| 12                         | % of population registered .....                               | 37.850           | 19.230              |
| 13                         | Book stock, in volumes .....                                   | 20450.000        | 3180.000            |
| 14                         | Total circulation, yearly .....                                | 49460.000        | 8415.000            |
| 15                         | Per capita circulation, yearly.....                            | 4.026            | 2.073               |
| 16                         | % of the circulation that was fiction.....                     | 68.110           | 18.842              |
| 17                         | Hours open per week.....                                       | 38.928           | 19.079              |
| 18                         | Full time staff members.....                                   | 2.558            | .521                |
| 19                         | Tax rate .....   | .043             | .002                |
| 20                         | Tax income .....   | 11690.000        | 2804.000            |
| 21                         | Total income .....   | 12810.000        | 2951.000            |
| 22                         | Total expenditure .....  | 11990.000        | 2673.000            |
| 23                         | % of total expenditure for books, magazines, and binding ..... | 19.318           | 8.854               |
| 24                         | % of total expenditure for salaries.....                       | 42.377           | 13.640              |
| 25                         | Tax income, per capita .....                                   | .800             | .442                |
| 26                         | Expenditure, per capita.....                                   | .864             | .435                |

show many relatively large standard errors of estimate. This point must be kept in mind in evaluating the results of factor analysis of this set of data since it is obvious that many of the inter-correlations from which the factors are derived are not precise.

Factor analysis was chosen as the technique to discover any possible association of measures of progressivism with characteristics of communities. The advantage of factor analysis over other techniques such as multiple regression is that it demonstrates the broadest dimensions of

association among the whole set of variables. Factor analysis also reveals association between particular variables which either are not easily discernible or are suspected from a matrix of raw correlations. Finally, this technique is appropriate in a problem such as this one which is exploring an area in which there are only limited hypotheses as to possible associations among the variables involved.

The factors were derived through the programs of the Illiac computer of the University of Illinois. The matrix of inter-correlations was fac-

tored by a centroid rotation with fixed communalities, and these results were rotated to orthogonal simple structure by the so-called Quartimax program. Six factors were selected as representing the basic clusters of correlations among the variables. These factors, each with an identifying designation and the component variables which show a high loading (.35 or greater) on the factor are shown in Table 2. The per cent of total variance attributed to each factor is shown in Table 3.

DISCUSSION

Examination of the factors shows that three of them, Factor C, "Occupation-Income", Factor D, "Population Age", and Factor F, "Rate of Community Growth", contain variables which are exclusively community characteristics and do not show high association with library variables. These three factors, therefore, are of interest because they show clustering of traits which could serve to distinguish the neutral type

TABLE 2.—Variables with high factor loadings in six community-library factors after rotation to orthogonal simple structure.

|                        |         |                               |         |
|------------------------|---------|-------------------------------|---------|
| A. "Community Size"    |         | B. "Socio-Economic Class"     |         |
| Variable               |         | Variable                      |         |
| No.                    | Loading | No.                           | Loading |
| 1                      | .950    | 6                             | -.457   |
| 13                     | .963    | 8                             | -.552   |
| 14                     | .945    | 15                            | -.742   |
| 17                     | .525    | 17                            | -.502   |
| 18                     | .977    | 19                            | -.646   |
| 20                     | .980    | 25                            | -.801   |
| 21                     | .981    | 26                            | -.827   |
| 22                     | .982    |                               |         |
| 25                     | .419    |                               |         |
| C. "Occupation-Income" |         | D. "Population Age"           |         |
| Variable               |         | Variable                      |         |
| No.                    | Loading | No.                           | Loading |
| 4                      | -.365   | 2                             | -.368   |
| 7                      | .588    | 3                             | .918    |
| 9                      | .776    | 4                             | .776    |
| 10                     | .926    |                               |         |
| 11                     | -.922   |                               |         |
| E. "Race"              |         | F. "Rate of Community Growth" |         |
| Variable               |         | Variable                      |         |
| No.                    | Loading | No.                           | Loading |
| 5                      | .436    | 2                             | .589    |
| 7                      | -.383   | 5                             | -.487   |
| 16                     | -.781   | 6                             | .616    |
| 23                     | -.734   |                               |         |
| 24                     | -.580   |                               |         |

TABLE 3.—Per cent of total variance attributed to each factor.

|   |       |
|---|-------|
| A | 28.12 |
| B | 13.39 |
| C | 17.13 |
| D | 7.07  |
| E | 5.08  |
| F | 5.26  |

of community in respect to community progressivism. The "Occupation-Income" factor indicates that in Illinois communities there is a high association of per cent of males in the labor force, the per cent engaged in manufacturing and median income and that this cluster of traits shows some negative association with per cent of population over sixty-five years of age. The factor "Population Age" shows that communities which did not show population increase from 1940-1950 had a large proportion of aged in 1950. The factor "Rate of Community Growth" shows that the communities with a relatively high rate of growth in this decade tended to be low in per cent non-white and high in the median years of completed schooling in 1950. This factoring of variables into these kinds of clusters reveals patterns already described in the literature on locality characteristics and in this sense, these findings about Illinois communities simply confirm that the Illinois pattern is a typical pattern. What is important is that none of these factors shows significant loadings on the library variables, so that it can be assumed that these factors describe Illinois towns and cities which are neutral in respect to progressivism.

The other three factors contain, however, both community and library variables and suggest characteristics of local populations which may have a direct relation to measures of progressivism. "Community Size" is such a factor. Here all the high factor loadings except population size itself are on items describing library service. Most of these

variables, such as number of volumes, total annual circulation and total expenditures could be expected to have a direct relation to community size. One important trait, however, library tax income per local resident, shows itself to be part of this cluster. This item can be regarded as a clear indicator of allocation of local resources to community welfare, and its presence in this factor suggests that size and progressivism are associated.

The factor "Socio-Economic Class" is an interesting combination of traits which casts light on what might be an important component of progressivism. This factor indicates that where median school year is low and per cent of females in the labor force is small, library facilities are poor, the hours of service are low, the tax rate is low as is per capita library expenditure. A low educational level combined with below average female employment suggests lack of white collar occupations. Such a lack appears in marked association with lack of progressivism. The final factor "Race" shows that high proportion of non-whites is in a negative relation to the per cent of males in the labor force and in expenditures for books and salaries of library personnel. Such a low level of services betokens non-progressivism in communities. Incidentally, one variable important in this factor confirms observations by professional librarians about the library habits of one segment of the local populations. The high negative loading on one item, per cent of circulation that was fiction, implies that where there is a large non-white population, cir-

ulation in fiction is low. Several librarians commented that this finding agrees with their experience that generally Negro clientele are interested in books in the do-it-yourself and self-help categories.

Summarizing the information shown in these six factors provides general descriptions of progressive, non-progressive and neutral towns and cities. These descriptions refer to the basic dimensions of Illinois communities that are related to the support of local community welfare, as it is measured by the quality of library service. Progressive local populations tend to be large, with white-collar employment and a low proportion of non-white. Non-progressive localities have the opposite traits. Neutral communities have high incomes and a large proportion of the work force in manufacturing; they show less than the average rate of population increase from 1940 to 1950 if a high proportion of people were aged; and they underwent a high rate of increase from 1940 to 1950 if there was a high level of schooling and a low ratio of non-white.

#### COMMUNITY EXAMPLES

Actual towns and cities, of course, cannot be expected to show all the characteristics of the progressive, non-progressive and neutral populations since the community dimensions defining these types are based on orthogonal factors which means that each factor is relatively independent of the other. However, when the census characteristics of an Illinois municipality show that a factor describes its population,

then generally the local library facilities are at the statistically predicted level. For example, Freeport, which is twice as large as the average community in the state, provides library tax income per capita almost twice the average for Illinois communities. Eldorado and West Frankfort are low in the scale of white collar employment and are correspondingly low in library services. Wood River, a community high in income and manufacturing employment, is close to the average in its library facilities. Jacksonville shows a very high median age, practically no population increase from 1940 to 1950, and about average library facilities. Madison, with an unusually high proportion of non-white population, falls below the average in library salary expenditures. This evidence from a few sample communities indicates that community characteristics selected by factor analysis can be used in the prediction of progressivism in actual communities.

Of course, the discovery of a discernible relation between census characteristics of community and its level of library services does not mean that there is a direct causal relationship between these traits. Rather, it should be apparent that a factor analysis, like any other statistical correlation, can only set the stage for explaining the causes of progressivism and non-progressivism in communities. The many activities involved in allocating financial resources for any form of local welfare, including the library, represent local policies and practices which themselves should be analyzed. The present findings simply suggest

certain pre-conditions which apparently enter into the development of local practices and which are ultimately reflected in the differences among Illinois localities in indices of community services.

#### SUMMARY

Progressive communities were defined as those providing above average support for local services including library facilities. A statistical analysis was made of U. S. Census characteristics and measures of library service in 154 Illinois towns and cities. The sample included almost all places of 2,500 or more population, according to the 1950 Census, outside of the Chicago metropolitan area. The results of this analysis showed patterns of census-reported traits which are associated with qualities of library service regarded as an index of a progressive community.

The statistical technique of factor analysis by computer methods was used to determine the inter-correlations of the library traits and community variables. This technique reveals any clustering or patterning of the variables in the form of factors. A factor represents a common dimension which the component variables, at least statistically, appear to share in some degree. Such a

statistic presents itself as an appropriate device for depicting presence or absence of progressivism.

Six factors were selected as a measure of the pattern of statistical association of the twenty-six variables. The factor "Community Size" was positively related to adequacy of library service and was taken as an index of community progressivism. A second factor was defined as representing "Social Class" and served to identify the non-progressive community. Another factor, "Race", was to some extent related to poorer library service. The factor "Occupation-Income" was not regarded as linked to library-service adequacy as was also the case with the factor "Population Age". The factor "Rate of Community Growth" was not significantly associated with library facilities. These last three factors were taken to demonstrate the traits of communities neutral in respect to progressivism.

#### LITERATURE CITED

- ANON. 1951. Library service. *Illinois Libraries*, 33: 301-333.
- UNITED STATES CENSUS 1950. Vol II, Part 13, Table 11.
- UNITED STATES OFFICE OF EDUCATION. 1950. Education directory. Part 3, Higher education — Illinois, pp. 44-52.
- Manuscript received May 1, 1960.*