

Factors Associated with 4-H Enrollment Levels in the Alabama Cooperative Extension Service

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The 4-H program has the largest membership of any youth organization in the United States (Ohio Cooperative Extension Service, 1986). The mission of 4-H is to provide educational experiences for boys and girls, 9 to 19 years of age, to improve their quality of life. The 4-H program provides practical learning experiences for nearly five million youth each year (Ohio Cooperative Extension Service, 1986).

The 4-H program is constantly changing. Current changes in contemporary society are forcing 4-H professionals to examine more closely the content and methodology of their youth programming to insure that it addresses the needs of a changing society. The quality and quantity of 4-H activities must deal with the critical needs and interests of young people.

The assessment of factors associated with high levels of 4-H enrollment may improve the effectiveness and efficiency of program delivery and further enhance the skills and competencies of young people. Several factors have been found to be associated with 4-H enrollment levels: county demographics (Diem, 1987; Miller, 1985; Mauer & Bokemeier, 1984; Yep, 1978), 4-H program characteristics (Diem, 1987; Schumacher, 1983; Miller, 1985; Orr, 1984; Caplinger, 1984; Gilliland, 1978), characteristics of the Extension agents (Milliser, 1987; Miller, 1985), and characteristics of the 4-H members (Little, 1988; Caplinger, 1984; Hartley, 1983; Wongsamun, 1983).

In the 80 years since 4-H has been established, enrollment has fluctuated and is now declining (Wessel & Wessel, 1982). Over the years, 4-H has not reached the potential youth population. The 1988-89 Alabama enrollment data suggest that fewer youth were enrolled in 4-H than in previous years (Cook, 1989). In 1986, more than 85,000 youth enrolled in 4-H programs (USDA-Extension Service, 1986). However, in 1988, less than 75,000 young people were 4-H members in Alabama (USDA-Extension Service, 1989). Less than 10 percent of the potential youth in Alabama are served by the 4-H program (Cook, 1989).

Purpose and Objectives

The major purpose of this study was to investigate selected factors that may be associated with 4-H enrollment levels in Alabama. If the factors that are associated with high enrollment levels are analyzed under various county conditions, then 4-H professionals would have a data base for developing and administering effective 4-H programs. The specific objectives of the study were to:

Describe each county on the following characteristics: total youth population by age, gender, and ethnicity; urban-rural classification; and the percent of the families below the poverty level.

Describe the 4-H program, in each county, on the following characteristics: number of volunteers; length of tenure of volunteers; activities performed by volunteers; the number of hours the agent spends in contact with 4-H members' parents/guardians per month; the number of 4-H radio/TV programs per month; the number of 4-H members per volunteer; and the gender and ethnicity of the

county staff.

Describe the Extension agents on the following characteristics: tenure in Extension; tenure in a 4-H position; number of years the agent participated in 4-H as a youth; and 4-H FTE.

Describe the county 4-H members on the following characteristics: age, gender, and ethnicity; and the number of 4-H projects selected.

Determine the number of youth enrolled in 4-H as a percentage of the total youth population in each county.

Investigate the relationships between the percentage of youth enrollment in the county 4-H program (10-14 and 15-19 years of age) and selected county demographics, 4-H program factors, and agent and youth characteristics.

Determine the factor(s) that best predict 4-H enrollment levels.

Methodology

The research was descriptive correlation. The data set for the study included: 67 county coordinators employed with the Alabama Extension System, the Alabama 4-H Membership 1989 Statistical Summary (Cook, 1989), Population Projections for Alabama Counties: 1985-95 (Raymondo, 1987), and the 1980 Census of Population and Housing: Alabama (United States Department of Commerce, 1982). The 1988-89 4-H enrollment data were used as the basis for calculating the enrollment level or percent of the county's youth population, 10-19 years of age, served by 4-H. Projected population data from census characteristics were the source for county youth characteristics. Enrollment levels of 4-H were calculated by dividing the 4-H population by the county youth population then multiplying by 100. The county was the unit of analysis for the study.

A data sheet was used by the researcher to record county land youth population characteristics from census and 4-H enrollment data. A mail questionnaire was developed to collect information on the characteristics of the Extension agents and the county 4-H program. A panel of experts, consisting of university faculty and current Extension agents, was used to establish the validity of the instrument. A pilot test was conducted with 15 randomly selected Ohio Extension agents. Test-retest procedures were used to determine the reliability of the instrument. A stability coefficient of .75 was established for the questionnaire.

Questionnaires and cover letters were mailed to the 67 county coordinators in May, 1990. The questionnaires requested specific 4-H programming factors and demographic data for each agent with 4-H responsibilities during the 1988-89 program year. Follow-up phone calls and reminder cards were mailed to late respondents. Eighty-eight percent of the questionnaires were returned. Characteristics of the responding counties were compared with nonresponding county data. Responding and nonresponding counties did not differ on the following variables of interest in the study: location in state, urban/rural, classification, 4-H enrollment levels, and poverty levels. Based on the comparison, the responding counties were judged to be representative of the state and the findings were generalized to the entire state.

Data were analyzed by the Statistical Analysis System (SAS). Means, standard deviations, and frequencies were computed. Correlation coefficients were calculated using the Proc Corr procedure of SAS. Point biserial and Pearson r values were appropriately reported for the data. The factors that were found to have a low, moderate, or substantial association (Davis, 1971) with 4-H enrollment levels were pooled out. These factors were

entered into a stepwise regression model. The coefficient of predictability or determination (R^2) values were used to determine the factors which would predict 4-H enrollment levels.

Results

County Demographics

The findings show that the youth population for Alabama was 722,056. The 10-14 age group represented 50 percent of the youth population and the 15-19 age group represented 50 percent of the population. Females (56%) slightly outnumbered males (44%). Minorities (i.e., African Americans, Hispanics, American Indians, and Asians) represented 33 percent of the youth population in Alabama. Minority youth represented 2 to 92 percent of the total youth population among the 67 counties. Twenty counties were classified as urban; 47 are classified as rural. Counties with 50 percent or more of the population residing in cities and towns of 2,500 or more inhabitants were classified as urban (United States Department of Commerce, 1982). The percent of families below poverty level ranged from 12 percent to 36 percent. Poverty level was determined by the percentage of families with four members with incomes below \$7,412 (United States Department of Commerce, 1982). Rural counties tended to have higher percentages of families below the poverty level.

As illustrated in Table 1, moderate and substantial negative associations were found between 4-H enrollment levels and the youth population by age, gender, and ethnicity. The data indicate that counties with lower youth populations tended to have a higher percentage of the youth enrolled in 4-H programs. A substantial association was found between type of county and 4-H enrollment. Rural counties tended to have higher 4-H enrollment levels. A moderate positive association was found between the percentage of families below the poverty level and 4-H enrollment. Counties with higher percentages of families below the poverty level tended to have higher 4-H enrollment levels.

Table 1. Relationships of Selected County Demographics and 4-H Enrollment

County demographics	r
Youth population (10-14 years)	-.47
Youth population (15-19 years)	-.49
Youth population (females)	-.48
Youth population (males)	-.48
Youth population (minority)	-.38
Youth population (nonminority)	-.51
Type of county	.51
#1=urban	
#2=rural	
Poverty level of families	.42

4-H Program Factors

The number of volunteers per county associated with 4-H activities ranged from eight to 662. According to the questionnaire, a total of 5,585 adults served as 4-H volunteers in the state. The majority of the volunteers had been with Extension for an average of six years. Eighty-eight percent of the counties designated club organization as a role for volunteers. Other volunteer activities included: participating on committees (95%), coordinating 4-H activities (92%), judging 4-H events and contests (92%), recruiting 4-H members (91%), teaching 4-H members (88%), participating in achievement programs

(83%), and raising funds for 4-H (59%). The mean number of hours per month that was spent in contact with parents/guardians of 4-H members by the Extension agents was 36. Forty-one percent of the counties had no 4-H radio programs; 49 percent of the counties reported having between one and five radio programs per month. Eighty-three percent of the counties did not have 4-H television programs; 15 percent of the counties reported having between one and five TV programs per month. The average number of 4-H members per volunteer was 15. The number of members per volunteer as reported by the counties ranged from 2 to 61. The ethnicity of the counties revealed that 37 percent of the counties had equal numbers of minority and nonminority 4-H agents, and 12 percent had only minority agents. Twenty percent of the counties had only female 4-H agents and five percent had only male 4-H agents. Fifty-eight percent of the counties had equal numbers of male and female 4-H agents.

All of the 4-H program factors had negligible to low association with the level of 4-H enrollment.

Characteristics of the Extension Agents

The mean number of years the agents had worked in Extension was 13. The mean number of years with 4-H responsibilities was 12. Seventy-six percent of the counties had agents who were former 4-H members. The average number of 4-H FTEs per county was 75 percent with a range between 25 and 100 percent.

Negligible to low correlations were found between 4-H enrollment levels and agent characteristics.

Characteristics of the 4-H Members

The 4-H youth enrollment was 68,688 for the state. This figure represents nine percent of the total youth population in Alabama. The level of 4-H enrollment as a percentage of the county's youth population ranged from 2 to 48 percent among the 67 counties. Eleven percent of the 4-H members were 15-19 years of age and 89 percent were 10-14 years of age. The 4-H enrollment of boys and girls was equal. Minority youth represented 33 percent of the 4-H enrollment. Seventy percent of the counties had three to four 4-H projects per member with a range between one and six projects.

Negligible to low associations were found between 4-H enrollment levels and 4-H member characteristics.

Factors that Predict 4-H Enrollment

Multiple regression was performed to determine the proportion of variance in the percent of 4-H enrollment that was explained by the linear combination of selected factors. A stepwise linear regression was performed to determine the best predictor(s) of the level of 4-H enrollment in the county. As shown in Table 2, 5 factors explained 50 percent of the variance in 4-H enrollment levels. Urban/rural classification explained 24 percent of the variance in 4-H enrollment levels, number of 4-H television programs per month accounted for seven percent, volunteers helping with 4-H judging events accounted for seven percent, poverty level accounted for seven percent, and volunteer participation in achievement programs accounted for an additional five percent of the variance in county 4-H enrollment levels.

Table 2. Regression of 4-H Enrollment Level on Type of County, 4-H Television Programs, Judging Events, Economic Status of Families, and 4-H Achievement Programs (n=56)

Variables	R ²	R ² Change	b
Type of county	.236	.236	.485
Number of 4-H television programs/month	.309	.073	.271
Volunteers helping with 4-H judging	.374	.065	.259
Economic status of families	.448	.074	.291
Member participation in achievement programs	.502	.054	.240
Constant			6.79

R² = .502

Conclusions

Based upon the findings of the study, the following conclusions are offered:

Four-H enrollment levels are higher in rural counties with low youth populations and a high number of families below the poverty level. Four-H programs in rural areas appear to reach a greater percentage of the youth population than urban 4-H programs. However, the total number of 4-H members in rural and urban areas is similar.

Four-H enrollment levels are independent of the number of volunteers in the county, the tenure of the volunteers, the number of members per volunteer, the number of hours spent in contact with parents of 4-H members, and the number of 4-H radio programs per month.

Four-H enrollment levels are independent of the 4-H FTE, the number of years the agent has been in Extension, the number of years the agent held a 4-H position, or the number of years the agent had participated in 4-H as a youth.

Four-H enrollment levels are independent of the age, gender, and ethnicity of the members. Enrollment levels are also independent of the number of 4-H projects selected.

The best single predictor of 4-H enrollment, as a percentage of the county youth population, is the urban/rural classification of the county.

Implications and Recommendations

Four-H agents should continue to develop and expand both urban and rural programs. Expanding 4-H programs to reach a larger population of potential members may require changes and improvements in the overall structure of program staffing and delivery. A more thorough examination is needed of the counties that have a high percentage of their youth enrolled in 4-H programs. Additional staffing in urban counties may be required to reach a higher percent of the youth population.

The economic status of rural counties reflects a higher percentage of the families below the poverty level. Four-H agents should consider developing innovative programs for members to improve their economic status. For example, projects that teach members

how to become entrepreneurs or how to develop marketable skills for employment should be examined as a technique to attract a larger youth audience.

Volunteer staffing expands a program's outreach. However, in this study, most of the volunteer factors were independent of 4-H enrollment levels. Further study is needed to examine the role of volunteers to maximize program efforts.

Even though a limited number of counties may have access to television programming, the use of television as a media to attract a wider youth audience should be explored by 4-H agents. The importance of television as a predictor of 4-H enrollment warrants further study.

In this study, the agent characteristics were independent of 4-H enrollment levels. Additional studies should be conducted to identify and investigate the quality of program planning and implementation performed by the agents. A comparison of 4-H activities and performance appraisal scores are other ways to determine program quality. With regard to agent FTEs for 4-H activities, observations and other assessments are needed to adequately determine the influence of FTEs on 4-H enrollment levels.

Older youth (15-19 years of age) represent 11 percent of the 4-H members in Alabama, but 50 percent of the total youth population. This population should be targeted for greater 4-H expansion and program development. Four-H should continue to strengthen the base for younger members; providing relevant experiences may encourage younger members to stay in the organization.

Future staffing patterns, allocation of time and resources, and program expansion to reach a greater percentage of youth are factors that may impact 4-H enrollment and quality of programming. Program expansion to reach a larger youth audience should be viewed in terms of the effectiveness of 4-H in accomplishing its mission. Further study is needed to determine the optimum levels of enrollment to effectively impact the educational value of 4-H programs.

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