

12-1-2005

## 4-H Experiences Contributing to Leadership and Personal Development of 4-H Alumni

Rama B. Radhakrishna  
*The Pennsylvania State University, brr100@psu.edu*

Megan Sinasky  
*The Pennsylvania State University, mus119@psu.edu*



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

---

### Recommended Citation

Radhakrishna, R. B., & Sinasky, M. (2005). 4-H Experiences Contributing to Leadership and Personal Development of 4-H Alumni. *The Journal of Extension*, 43(6), Article 10. <https://tigerprints.clemson.edu/joe/vol43/iss6/10>

This Research in Brief is brought to you for free and open access by the Conferences at TigerPrints. It has been accepted for inclusion in The Journal of Extension by an authorized editor of TigerPrints. For more information, please contact [kokeefe@clemson.edu](mailto:kokeefe@clemson.edu).



December 2005 // Volume 43 // Number 6 // Research in Brief // 6RIB2



PREVIOUS  
ARTICLE



ISSUE  
CONTENTS



NEXT  
ARTICLE



## 4-H Experiences Contributing to Leadership and Personal Development of 4-H Alumni

### Abstract

The study reported here examined the contribution of 4-H experiences on leadership and personal development of Pennsylvania 4-H alumni. A total of 168 4-H alumni responded to a mail survey. Stepwise regression analysis identified six variables (challenges and responsibilities, benefits of 4-H participation, number of years in 4-H, animal science projects completed, usefulness and total number of 4-H projects completed) contributing to leadership and personal development. The variables explained 69.5% of the total variance. Pennsylvania 4-H alumni view their 4-H experience as very beneficial. The experiences they had in 4-H continue to influence them in later life.

### Rama B. Radhakrishna

Associate Professor

[brr100@psu.edu](mailto:brr100@psu.edu)

### Megan Sinasky

Graduate Assistant

[mus119@psu.edu](mailto:mus119@psu.edu)

Department of Agricultural and Extension Education

The Pennsylvania State University

University Park, Pennsylvania

## Introduction

4-H is one of the leading youth clubs across the United States and Canada. 4-H is the most highly recognized of all Extension programs (Van Horn, Flanagan, & Thomson, 1999). For the past 102 years, 4-H has been helping children and youth reach their fullest potential through learning new life skills, meeting new people, learning responsibility, and building self-confidence. Participation in 4-H fosters core objectives, such as knowledge and skills, leadership and personal development, and citizenship skills through its projects, activities, and programs (Asthroth & Haynes, 2002).

A number of studies have examined the impact of 4-H projects and activities on life-skill development (Fox, Schroeder, & Lodl, 2003; Mead, Hirschl, Rodriguez, & Goggin, 2000; Boyd, Herring, & Briers, 1992; Heinsohn & Cantrell, 1986). Consensus from these studies indicated that 4-H members developed critical life skills, such as decision making, leadership, communication, personal development, and social skills.

Other researchers have studied the impact of 4-H on former members (alumni). In their national study of former 4-H members, Ladewig and Thomas (1987) found that 4-H alumni were more satisfied with 4-H's contribution to their personal development (self-worth, responsibility, and goal setting). They also found that years of participation, entry age, and gender contributed to life skill development of 4-H alumni.

Collins and Associates (1997) studied the impacts of 4-H programs on members, families, and alumni in Canada. Findings revealed that 4-H experience was beneficial (83%); helped in leadership, teamwork, and communication (82%); and taught them how to face challenges and take responsibility (78%). Further, 84% of 4-H alumni indicated that 4-H participation kept them busy and out of trouble, and parents and families benefited from their children's membership in 4-H.

In 2003, a follow-up to the 1997 study was conducted by the Canadian 4-H Council. Findings indicated that a majority of alumni (74%) felt that 4-H experiences contributed significantly to personal and career experiences later in their lives. Eighty-five percent said that they would recommend 4-H to young people, while 78% felt that the knowledge and skills gained in 4-H continue to benefit them in their adult lives.

In today's environment of accountability, budget constraints, and expensive program alternatives, evidence is needed concerning who benefited, by how much, and what difference does it make that individuals participated in 4-H. Stakeholders need to be informed of the impact 4-H is making on former 4-H members.

## **Purpose and Objectives**

The major purpose of the study reported here was to ascertain how 4-H experiences of past members (4-H alumni) has influenced or contributed to other experiences later in life. The following objectives guided this investigation:

1. Demographic and 4-H program profile of 4-H alumni;
2. Usefulness of 4-H projects completed by 4-H alumni;
3. The challenges and responsibilities and perceived benefits experienced by 4-H alumni;
4. 4-H experiences relative to leadership and personal development of 4-H alumni; and
5. 4-H experiences influencing leadership and personal development of 4-H alumni.

## **Methods and Procedures**

### **Population and Sample**

The population for the study included all 4-H alumni (N=1,254) listed in the 4-H Alumni Database maintained in the Department of Agricultural and Extension Education at Penn State. A random sample of 289 alumni was chosen for the study. This sample size reflects a 5% margin of error with a 5% risk of drawing a bad sample (Krejcie & Morgan, 1970).

### **Instrumentation**

A questionnaire developed by the Canadian 4-H Council (2003) was modified and used to collect data. Section one of the questionnaire consisted of information relative to 4-H participation, age at participation, number of years in 4-H, and county, club, or officer position held. Section two elicited information on number of 4-H projects and usefulness of 4-H projects completed. Section three contained nine statements relative to challenges and responsibilities experienced 4-H alumni and benefits of 4-H participation. Section four contained 18 statements relative to leadership and personal development. Statements in all the three sections were measured on a Likert-type scale. The final section consisted of demographic questions (place of residence, level of education completed, county, gender, current age, and employment status).

### **Validity and Reliability**

A panel of five experts (two agricultural and Extension education faculty, Extension program leader for youth, children, and families, 4-H program coordinator, and a graduate assistant) judged the questionnaire for content and face validity. A pilot test was conducted using Collegiate 4-H members to estimate the reliability. All the sections of the questionnaire had acceptable reliability. Cronbach's alpha for the final study ranged from a low of 0.87 (usefulness of 4-H projects) to a high of 0.95 (leadership and personal development), with an overall reliability of 0.96.

### **Data Collection and Analysis**

The questionnaire was mailed to the sample on November 24, 2003. After one follow-up and a post card reminder, a total of 178 4-H alumni had responded (61%). Of these, 168 (58%) provided complete and useful data. Early and late respondents were compared based on the procedures suggested by Miller and Smith (1983). The 103 early and 65 late respondents were not statistically significant ( $p > .05$ ) on key variables (gender, age, number of 4-H projects completed, usefulness of projects, challenges, and responsibilities learned in 4-H, and leadership and personal development skills) examined in the study.

The data provided by 168 4-H alumni was entered into a SPSS database. Descriptive, correlational, and stepwise regression techniques were used to analyze and summarize the data. The scale provided by Davis (1971) was used to determine the strength of relationships between independent and dependent variables.

## **Results**

## Objective 1: Demographic and Program Profile

A majority of the 4-H alumni were female (74%). Twenty-three percent had completed high school; 27% some college; 30% bachelor's; 16% graduate degrees (masters and doctoral); and 3% professional degrees. The average age of alumni was 47.6 years, with the youngest being 18 and the oldest 86 years. Almost two-thirds (65%) lived on a farm or in a rural, non-farm location; 12% in towns of 2,501-10,000 population; 9% under 2,500; 10% in cities with a population of 10,000 or more; and 4% other. A little over one-half of the respondents (52%) indicated that they currently work full-time.

Regarding 4-H participation, 82% of alumni had joined 4-H before age 12. Alumni had participated in 4-H an average of 8.5 years. Seventy-nine percent had held officer positions in 4-H. On average, alumni had completed 23, projects with a minimum of three and a maximum of 100 projects. Alumni had participated in a variety of 4-H projects: animal science (64%), leadership and personal development (60%), family and consumer science (34%), environmental education and earth sciences (31%), healthy lifestyles (28%), and communication and expressive arts (23%), and citizenship and civic education (23%). Three out of every four 4-H alumni reported that they had to leave 4-H because of age limitations, while 22% left 4-H while they were still eligible to participate.

## Objective 2: Usefulness of Completed 4-H Projects and Activities

4-H alumni were asked to indicate on a five-point scale (1 "not at all useful" to 5 "very useful") the usefulness of 4-H projects and activities they completed (Table 1). 4-H projects they worked on ( $M=4.56$ ,  $SD=0.66$ ) and the people they worked with ( $M=4.49$ ,  $SD=0.68$ ) were rated "very useful." In addition, alumni viewed participation in competitions, shows, fairs, and events at national and state levels as "useful."

**Table 1.**  
Usefulness of 4-H Projects and Activities

Statement	n	M*	SD	Rank
Projects you worked on	165	4.56	0.66	1
People you worked with	166	4.49	0.68	2
Competitions, shows, fairs	160	4.36	0.91	3
Club meetings you were involved in	167	4.27	0.70	4
Events at state or national levels	142	4.08	1.27	5
Awards, prizes and publicity you received	162	3.96	1.00	6
Exchange trips or opportunities to travel	137	3.93	1.33	7

\*Mean computed on a scale 1(not at all useful) to 5 (very useful)

## Objective 3: Challenges and Responsibilities and Benefits Experienced in 4-H

4-H alumni were asked to indicate on a scale of one to five, with 1 being "never" and 5 being "very often," the challenges and responsibilities experienced in 4-H. Results are shown in Table 2. 4-H alumni indicated that they "often" received help and encouragement from home ( $M=4.32$ ,  $SD=0.88$ ), had the opportunity for developing their own skills ( $M=4.26$ ,  $SD=0.76$ ), felt they were making contribution to 4-H ( $M=4.07$ ,  $SD=0.88$ ), and completed challenging tasks ( $M=3.82$ ,  $SD=0.85$ ). In addition, 4-H alumni indicated that they "often" experienced opportunities to lead others, make important decisions, and plan activities (Table 2).

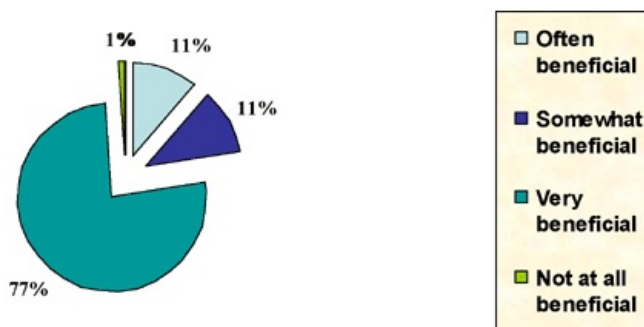
4-H alumni were asked to indicate on a single item using a seven-point scale (1 being "not all beneficial" to 7 "very beneficial") their overall 4-H experiences in terms of contributing to personal and/or career experiences later in their life (Figure 1). Seventy-seven percent said that their experiences as 4-H members were "very beneficial," followed by "somewhat beneficial" (11%), often beneficial (11%), and not at all beneficial (1%).

**Table 2.**

Statement	n	M*	SD	Rank
Received help and encouragement from home	164	4.32	0.88	1
Opportunity to develop your own skills	162	4.26	0.76	2
Made to feel you were making a contribution	164	4.07	0.88	3
Completing challenging tasks	162	3.82	0.85	4
Opportunity to lead others	163	3.76	1.15	5
Making important decisions	162	3.74	0.97	6
Planning 4-H activities	163	3.62	1.14	7
Worked in community service projects	163	3.23	1.23	8
Required to give public speech	164	2.80	1.32	9

\*Mean computed on a scale 1(never) to 5 (very often)

**Figure 1.**  
Benefits of 4-H Participation



**Objective 4: 4-H Experiences Relative to Leadership and Personal Development**

On a seven-point scale (1 "no contribution" to 7 "great contribution"), alumni indicated that the experiences they had in 4-H contributed "greatly" to developing personal pride in achievements and progress (M=6.19, SD=1.08); enjoying recreation, leisure, companionship, and fun (M=6.00, SD=1.04); and in developing self-esteem/self-confidence (M=5.96, SD=1.22). In addition, alumni felt that their 4-H experiences also greatly contributed to developing group interaction skills, leadership skills, and decision-making skills. However, experiences such as business management, entrepreneurial skills, practicing good health, safety, and nutritional practices contributed "somewhat" to leadership and personal development (Table 3).

**Table 3.**  
4-H Experiences Relative to Leadership and Personal Development

Statement	n	M*	SD	Rank

Developing personal pride in achievements and progress	165	6.19	1.08	1
Enjoying recreation, leisure, companionship, fun	164	6.00	1.14	2
Developing self-esteem/self confidence	164	5.96	1.22	3
Setting and working to achieve personal goals	165	5.81	1.20	4
Building group interaction skills	164	5.68	1.32	5
Acquiring skills for leadership	163	5.61	1.65	6
Developing decision making skills	163	5.60	1.29	7
Learning skills for judging, evaluating, and assessing	163	5.59	1.60	8
Acquiring teamwork skills	163	5.58	1.40	9
Building leadership skills	163	5.58	1.67	10
Developing problem solving skills	163	5.50	1.24	11
Learning meeting management skills/democratic procedures	164	5.41	1.68	12
Acquiring skills necessary for employment	163	5.19	1.60	13
Practicing good habits of health, fitness, and safety	164	4.89	1.60	14
Learning money management	165	4.74	1.69	15
Acquiring and developing good nutritional practices	164	4.68	1.70	16
Learning business management skills and techniques	163	4.60	1.61	17
Developing entrepreneurial skills	162	4.59	1.84	18
*Mean computed on a scale 1(no contribution) to 7(great contribution)				

### **Objective 5: 4-H Experiences Influencing Leadership and Personal Development of 4-H Alumni**

Descriptive, correlational, and stepwise regression techniques were used to determine the contribution of 4-H projects and activities to leadership and personal development. Regression analysis provides a wealth of information about the relationships between the independent variables and the dependent variable (Urdan, 2005). For example, 1) it tells the relationships between independent and dependent variables, 2) provides information on the variance explained

by each independent variable, 3) tells the relationships between independent and dependent variable when controlling for other independent variables in the regression equation, and 4) identifies which of the independent variables is a stronger predictor of the dependent variable.

The independent variables selected for this study were: challenges and responsibilities; benefits of 4-H participation to personal and career in later life; completing 4-H projects in animal science, family and consumer science, science and technology, environmental sciences, international and diversity, communication and expressive arts, healthy lifestyles, leadership and personal development, citizenship and civic education; number of years in 4-H; usefulness of 4-H projects; total number of projects completed; age; and gender. All nominal variables (4-H projects completed and gender) were dummy coded (1=completed 4-H projects, 0=did not complete 4-H projects; 1=female, 0=male).

Significant, positive relationships were found between the dependent variable (leadership and personal development) and independent variables--usefulness of 4-H projects ( $r=0.61$ ), challenges and responsibilities ( $r=.74$ ), and benefits of 4-H participation ( $r=0.68$ ). Low to moderate relationships were found between leadership and personal development and type of projects completed--animal science ( $r=.23$ ), leadership and personal development ( $r=.30$ ), citizenship and civic development ( $r=.18$ ), communication and expressive arts ( $r=.15$ ), and number of years in 4-H ( $r=.28$ ). No relationship existed between number of 4-H projects completed and leadership and personal development (see Table 4).

**Table 4.**  
Relationships Between 4-H Participation Variables and Leadership and Personal Development

<b>4-H Participation Variables</b>	<b>n</b>	<b>r*</b>
Usefulness of projects	166	.61 <sup>a</sup>
Challenges and responsibilities	166	.74 <sup>a</sup>
Benefits of 4-H participation	166	.68 <sup>a</sup>
Animal science projects	166	.23 <sup>a</sup>
Leadership and personal development projects	166	.30 <sup>a</sup>
Communication and expressive arts projects	166	.15 <sup>b</sup>
Citizenship and civic development projects	166	.18 <sup>b</sup>
Number of years in 4-H	166	.28 <sup>a</sup>
Total number of 4-H projects completed	166	.06
*Pearson correlation coefficient; <sup>a</sup> $p < .001$ ; <sup>b</sup> $p < .05$		

Table 5 summarizes the order in which the variables entered into the regression equation. The results indicate a total of six variables (in order of entry): challenges and responsibilities, benefits of 4-H participation, number of years in 4-H, animal science projects completed, usefulness of projects, and total number of projects completed significantly contributed to leadership and personal development. The order in which the variables entered gives valuable information on the contribution of each variable in explaining the variation in personal and leadership development of 4-H alumni.

The first variable to enter the regression equation was challenges and responsibilities. It explained 52.8% of the total variance in leadership and personal development. The second variable entered was benefits of 4-H participation, which explained 11.9%, followed by number of years in 4-H (1.8%), animal science projects completed (1.2%), usefulness of 4-H projects (0.8%), and total

number of 4-H projects completed (0.1%). Collectively, these six independent variables explained 69.5% of the total variance in leadership and personal development (Table 5).

**Table 5.**  
Summary Results of Step-Wise Regression Analysis of Factors Influencing Leadership and Personal Development of 4-H Alumni

Variable	Multiple R	R <sup>2</sup>	Adj. R <sup>2</sup>	R <sup>2</sup> Change	Final Step Beta	F Value*
Challenges and responsibilities learned in 4-H	0.727	.528	.526	.528	0.39	186.03
Benefit of 4-H participation to personal/career experiences in later life	0.805	.648	.644	.119	0.38	151.82
Number of years in 4-H	0.816	.666	.659	.018	0.13	108.84
Animal science projects completed	0.823	.677	.669	0.12	0.11	85.74
Usefulness of 4-H projects	0.828	.685	.676	.008	0.14	70.53
Number of projects completed	0.834	.695	.684	.001	-0.10	61.20
Constant					-3.503	
*p < .05; 1, 161 df; R <sup>2</sup> = 0.695 (10.55687); Adjusted R <sup>2</sup> = .684;						
Note: Coding: 4-H projects (1=completed 4-H projects, 0=did not complete 4-H projects).						

## Conclusions and Recommendations

Overall, Pennsylvania 4-H alumni, even after having left 4-H many, many years ago, view their 4-H experiences as very positive. It appears that the experiences they had in 4-H continue to influence them in later life. Many 4-H alumni believe that 4-H is a superior organization when compared to other youth organizations.

Participation in 4-H projects and activities, the value of projects completed, and the challenges and responsibilities experienced in 4-H have contributed to the personal and leadership development of 4-H alumni. These results support findings of earlier studies (Ladewig & Thomas, 1987; Asthroth & Haynes, 2002; Briers, Boyd & Herring, 1992; Fox, Schroeder, & Lodl, 2003) reported in the literature.

Extension educators should continue to find innovative ways to teach challenges and responsibilities to youth and children as these contribute to leadership and personal development. Emphasis should be placed on new 4-H projects or revising 4-H curricula to reflect current technological trends. For example, classes such as biology, anatomy, biotechnology, computer technology in agriculture, and food science could have a positive effect on 4-H enrollment. In addition, age-specific programs/projects needs to be developed so that project books are appealing and challenging to youth. In addition, a marketing and advertising strategy should be developed to communicate the various benefits that 4-H offers for young people. These efforts will help attract and retain youth in the 4-H program.

In a time when budget constraints and elimination of Extension programs and personnel are facing Cooperative Extension, the impact and value of Extension programs, especially 4-H programs and



activities, should be documented. In addition, these impact results should be communicated to key stakeholders for a better understanding of the positive impact that 4-H makes on young people that carry into adulthood.

Findings of this study should be shared with all stakeholders, especially Extension educators, specialists, and other development personnel to make informed decisions about Pennsylvania 4-H program. Extension educators in the counties may use the findings as a marketing and recruiting tool for 4-H programs.

## References

Asthroth, K. A., & Haynes, G. W. (2002). More than cows and cooking: Newest research shows the impact of 4-H. *Journal of Extension* [On-line], 40(6). Available at:

<http://www.joe.org/joe/2002august/a6.shtml>

Boyd, B., Herring, D., & Briers, G. (1992). Developing life skills in youth. *Journal of Extension* [On-line], 30(4) Available at: <http://www.joe.org/joe/1992winter/a4.html>

Cantrell, J., Heinsohn, A. L., & Doebler, M.K. (1989). Is it worth the cost? *Journal of Extension* [On-line], 27(1). Available at: <http://www.joe.org/joe/1989spring/a4.html>

Collins, J. B., & Associates (1997). *Measures of success: A project of the Canadian 4-H Council measuring the impacts of the 4-H programs on members, families, alumni*. Canadian 4-H Council, Central Experimental Farm, Ottawa, Canada.

Davis, J. A. (1971). *Elementary survey analysis*. Englewood Cliffs: Prentice Hall.

Fox, J., Schroeder, D., & Lodl, K. (2003). Life skill development through 4-H clubs. The perspective of 4-H alumni. *Journal of Extension* [On-line], 41(2). Available at:

<http://www.joe.org/joe/2003december/rb2.shtml>

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size in research activities. *Educational and Psychological Measurement*, 30, 607-610.

Ladewig, H., & Thomas, J. (1987). *Does 4-H make a difference?* College Station, TX: Texas A & M University System.

Mead, J., Hirschl, T., Rodriguez, E., and Goggin, S. (2000). *4-H clubs: Making a difference in the lives of New York state youth*. Cornell Cooperative Extension, 4-H Youth Development, Cornell University, Ithaca, New York.

Urdan, T. C. (2005). *Statistics in plain English*. Mahwah, NJ: Lawrence Erlbaum Publishers.

Van Horn, B. E., Flanagan, C. A., & Thomson, J. S. (1999). Changes and challenges in 4-H (Part 2). *Journal of Extension* [On-line], 37(3). Available at:

<http://www.joe.org/joe/1999february/comm1.html>

Zeldin, S., McDaniel, A., Topitzes, D., & Calvert, M. (2000). *Youth in decision-making: A study on the impacts of youth on adults and organizations*. National 4-H Council, Madison, WI.

*Copyright* © by Extension Journal, Inc. ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the *Journal Editorial Office*, [joe-ed@joe.org](mailto:joe-ed@joe.org).

If you have difficulties viewing or printing this page, please contact [JOE Technical Support](#)