KEY FINDINGS

- Regardless of a person's education level, gender, or age, performing arts attendance increases the likelihood of volunteering by 25 percentage points.

- Levels of activity, including arts and sports attendance, are better predictors of volunteering than are demographic traits.

VOLUNTEERING AND PERFORMING ARTS ATTENDANCE: MORE EVIDENCE FROM THE SPPA

By Bonnie Nichols

In November 2006, the NEA published *The Arts and Civic Engagement*, a research brochure reporting that arts participants are more active and civically engaged than non-participants.[1] Since then, two questions have emerged. First, if we control for demographic variables such as level of education, do arts participants still volunteer at higher rates than non-participants? Similarly, one might inquire whether the link between event attendance and civic engagement is exclusive to the arts. For example, do people who attend sporting events volunteer at higher rates, compared with people who do not attend sports?

The answer to both questions appears to be yes. Holding education and other demographic characteristics constant, the chances (or odds) that performing arts attendees will volunteer are 3.5 times higher than for non-attendees. Though not quite so high, the chances that sporting events attendees will volunteer are 2.9 times higher than for non-attendees of sports events.

Using data from the 2002 Survey of Public Participation in the Arts (SPPA), this note investigates the volunteer patterns of people who attend performing arts events and people who engage in other types of leisure activities tracked by the survey.

Consistent with recent research into American time use patterns, this analysis shows that people who attend performing arts and sporting events—as well as people engaged in other activities such as reading literature or playing sports—are more likely to volunteer than people who do not partake of those leisure activities.

PERFORMING ARTS ATTENDEES VOLUNTEER MORE

Correlation Analysis

The first step in investigating a relationship between performing arts attendance and volunteering is correlation analysis.

The attached table shows correlation coefficients for selected arts, leisure, and demographic traits captured by the 2002 Survey of Public Participation in the Arts (SPPA). Ranging from 0 (no relationship) to 1 (perfectly correlated), the correlation coefficient quantifies the strength of a relationship between two variables. The closer the coefficient is to 1, the stronger the relationship.

In the "Volunteer" column, correlation coefficients are reported for factors such as sports attendance, book reading, education and marital status. For example, the correlation coefficient for volunteering and education is comparatively strong—0.22. Education is more closely related to volunteering than, say, marital status, which has

a coefficient of 0.07, or having school-age children (correlation of 0.05). Whether a person resides in a metropolitan area appears to be unrelated to volunteering.
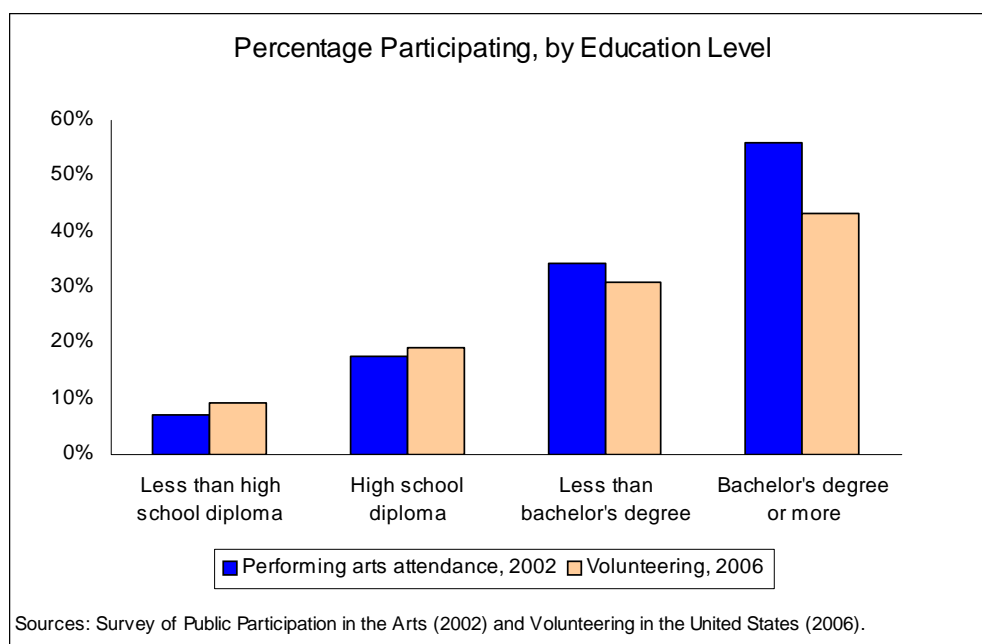
Of the variables considered, volunteering is most strongly related to performing arts attendance: the correlation coefficient is 0.32, the highest coefficient reported in the Volunteer column.

Demographic Patterns

In addition to correlation analysis, volunteer patterns are revealed in *Volunteering in the United States, 2006*, released by the Department of Labor's Bureau of Labor Statistics (BLS). This source shows, for instance, that women volunteer at higher rates than men (30% vs. 23%) and that married

people volunteer at higher rates than non-married people (32% vs. 21%). The BLS report also shows that volunteer rates rise with education. For example, 43.3% of college graduates volunteered—a rate 24 percentage points higher than that of high school graduates who volunteered.

Performing arts attendees share a similar profile. The 2002 SPPA shows that more women attend than men (34% of women vs. 27% of men) and that performing arts attendance rises with education (56% of college graduates, compared to 18% of high school graduates). Can it be that education and gender contribute to the high volunteer rate of performing arts attendees?

Percentage Participating, by Education Level

Sources: Survey of Public Participation in the Arts (2002) and Volunteering in the United States (2006).

A statistical regression model explores this question. While a more technical discussion appears later in this note, the regression model relates a dependent variable—in this case, volunteering—to one or more independent variables such as education, gender, and the key variable in question, performing arts attendance. Determining which independent variables to include in the model were guided by the correlation analysis and the BLS report on volunteering.

The model can be expressed so that volunteering is a function of performing arts attendance, plus demographic variables such as education and gender. A logit regression was used to model this relationship and estimate the odds of volunteering for each variable, *independently*. The resulting odds were then converted to odds ratios.

The results show that, indeed, performing arts attendees volunteer at higher rates, independent of their high levels of education, their concentration among women, and other demographic variables that may influence the decision to volunteer. Specifically, **the odds that performing arts attendees will volunteer are 3.5 times greater than for non-attendees.**

The model suggests that certain demographic features also increase the chances of volunteering. For example, the odds that college graduates will volunteer are about 80% higher than the odds for people with less education. Volunteering odds for part-time workers are 32% higher than the odds for full-time workers or people not in the labor force. Similarly, volunteering odds are 23% better for married

people and 32% better for women. The odds of volunteering are 14% higher for those with school-age children and 15% higher for people 35-54 years old.[2] The odds that Hispanics will volunteer are 46% below the odds for non-Hispanics.

Interpreting Odds

Converting odds into probability may clarify the results of our regression model. The regression model generated odds of 1.25 that a performing arts attendee will volunteer. This conclusion indicates that 1.27 attendees will volunteer for every 1 that does not (a probability of 1.25 out of 2.25, or 55.6%).

Activity/characteristic	Odds ratio of volunteering
Performing arts attendance	3.49
College graduate	1.81
Female	1.32
Age 35-54	1.15
Hispanic	0.54
Married	1.23
Part-time labor force participation	1.32
Own children under age 18	1.14

Of the 17,135 SPPA respondents, 5,197 volunteered—a probability of 30.3%. Holding all the other characteristics constant (e.g., education, gender, age, etc.), performing arts attendance increases the likelihood of volunteering by 25 percentage points.

ACTIVITIES TRUMP DEMOGRAPHICS AS FACTORS IN VOLUNTEERING

Though not quite as high as the odds for performing arts attendees, the chances that sporting events attendees will volunteer are also strong. Holding demographic traits constant, the odds that sporting events attendees will volunteer are 2.9 times higher than the odds for people who do not attend sports.

This finding conforms to the correlation statistics. **The strongest relationships with volunteering tend to be activities rather than demographic traits.** To reiterate, the correlation coefficient quantifies the strength of a relationship between two variables. With the exception of education, volunteering is the variable most strongly related to activities such as attending, reading, playing, and creating. Volunteering, for example, is more strongly correlated with playing sports than is employment (coefficient of 0.21 vs. 0.07).

Using a regression analysis to calculate the odds also bears out this pattern. The odds that literary readers will volunteer are 3 times higher than the odds of those who do not read literary works. Likewise, volunteering odds for those who play sports or do outdoor activities (e.g., canoeing, hiking, or camping) are 3 times greater; even people who go to movie theaters have 2.6 times greater odds of volunteering than do non-moviegoers.[3]

Total number of SPPA respondents	17,135
Number who volunteered	5,197
General probability of volunteering *(5,197 out of 17,135)*	30.33%
Estimated odds that performing arts attendees will volunteer	1.25
Probability that performing arts attendees will volunteer *(1.25 out of 2.25)*	55.60%
Percentage point gain in probability of volunteering, based on attending a performing arts event	25.27

Activity	Odds ratio of volunteering
Performing arts attendance	3.49
Playing sports or doing outdoor activities	3.10
Literary reading	3.14
Creating photos, paintings or writings	2.90
Sports attendance	2.88
Moviegoing	2.56

Taking a Page from Textbook Physics

In *Time for Life: The Surprising Ways Americans Use Their Time* (1997, The Pennsylvania University State Press), John Robinson and Geoffrey Godbey argue that busy people tend to undertake a variety of activities. Citing the "Newtonian model of human behavior," Robinson and Godbey borrow from Isaac Newton's classic physics principle: bodies in motion remain in motion, and bodies at rest stay at rest.

The findings in this note support such a theory. Compared with less active people, chances are strong that people who attend performing arts or sporting events will volunteer. Odds are also higher for those who play sports or do outdoor activities, and for those who read literature or go to movie theaters. Simply put, people who engage in one or more of these types of activities are also likely to engage in the others.

Results from the binary logistic regression model appear in the table below. Each coefficient is significant (statistically different from zero).[4]

The dependent variable, log (p/1-p), is the predicted log odds of volunteering. Holding all the other variables in the model constant, performing arts attendance increases the log odds of volunteering by 1.25. The exponentiation of the coefficient, Exp(B), is the odds ratio. The odds that people who attend performing arts will volunteer are 3.5 times higher than for non-attendees.

Being a college graduate, female, or 35-54 years old also increases the log odds of volunteering—by 0.59, 0.28, and 0.14, respectively. Volunteering odds increase by 0.20 for married people, by 0.28 for part-time workers, and 0.13 for people with children under 18. Volunteering odds decrease by 0.39 (1-0.61) for Hispanics.[5]

Output of the Binary Logistic Regression

Independent Variable	B	S.E.	Wald	Sig.	Exp(B)
Performing arts	1.25	0.04	1055.28	0.00	3.49
College education	0.59	0.04	210.28	0.00	1.81
Female	0.28	0.04	55.51	0.00	1.32
Age 35-54	0.14	0.04	12.85	0.00	1.15
Hispanic	-0.61	0.07	76.15	0.00	0.54
Married	0.20	0.04	26.81	0.00	1.23
Part-time labor force	0.28	0.06	24.76	0.00	1.32
Have children	0.13	0.04	9.29	0.00	1.14
Constant	-1.88	0.04	2029.93	0.00	0.15

Nagelkerke R-square statistic = 0.174

Key

B	Coefficients, measured in log-odd units
S.E.	Standard errors
Wald	Wald chi-square values
Sig.	p-values
Exp(B)	Odds ratios

The Predicted Log Odds of Volunteering

log (p/1-p) = -1.87 + 1.25*Performing Arts Attendance + 0.59*College graduate +

0.28*Female + 0.14*Age 35-54 - 0.61*Hispanic + 0.20*Married +

0.28*Part-time labor force + 0.13*Have children under age 18

ENDNOTES

[1]*The Arts and Civic Engagement* brochure is based on Research Note #89, *Arts and Leisure Activities: Evidence from the 2002 Survey of Public Participation in the Arts*.

[2]According to the BLS report, *Volunteering in the United States, 2006*, Americans 35-54 years old have the highest volunteer rates.

[3]All models described in this Note used "having children under 18" as an independent predictor of volunteering. This variable, however, was only statistically significant for the performing arts regression model shown in the Technical Appendix.

[4]The 2002 Survey of Public Participation in the Arts is a complex sample employing clustering and weighting techniques. To better reflect the sample size, this model was generated using rescaled weights. Though not reported in the regression output table, significance testing was done using standard errors multiplied by the square root of the SPPA's design effect (2.8).

[5]Income was excluded from the model due, in part, to its high correlation with education (0.35).

For more information please see the following sources:

National Endowment for the Arts, Research Division Report #45, *2002 Survey of Public Participation in the Arts*, March 2004.

National Endowment for the Arts, *The Arts and Civic Engagement: Involved in Arts, Involved in Life*, November 2006.

Department of Labor, Bureau of Labor Statistics, *Volunteering in the United States, 2006*, January 2007.

Robinson, P. John and Geoffrey Godby. *Time for Life: The Surprising Ways Americans Use Their Time*. The Pennsylvania State University Press, 1997.

H.T. O. Davies, Iain Kinloch Crombie, and Manouche Tavakoli. "When Can Odds Mislead?" *British Medical Journal* 1998; 316: 989-991.

	Volunteer	Attend performing arts	Read literature	Read books frequently	Attend sports	Play sports	Do outdoor activities	Create photos, paintings, or writings
Volunteer	1.00	0.32	0.29	0.20	0.25	0.21	0.25	0.24
Attend performing arts	0.32	1.00	0.34	0.24	0.27	0.20	0.24	0.25
Read literature	0.29	0.34	1.00	0.41	0.19	0.15	0.21	0.27
Read books frequently	0.20	0.24	0.41	1.00	0.09	0.07	0.12	0.18
Attend sports	0.25	0.27	0.19	0.09	1.00	0.42	0.31	0.16
Play sports	0.21	0.20	0.15	0.07	0.42	1.00	0.36	0.18
Do outdoor activities	0.25	0.24	0.21	0.12	0.31	0.36	1.00	0.21
Created photos, paintings, or writings	0.24	0.25	0.27	0.18	0.16	0.18	0.21	1.00
Education	0.22	0.33	0.24	0.20	0.19	0.18	0.16	0.14
Income	0.17	0.22	0.17	0.11	0.23	0.21	0.20	0.11
Female	0.07	0.07	0.18	0.14	-0.13	-0.17	-0.07	0.07
Age 35-54	0.08	0.07	0.04	0.04	0.07	0.04	0.09	0.02
Hispanic	-0.11	-0.11	-0.14	-0.11	-0.06	-0.06	-0.12	-0.06
Married	0.07	0.02	0.02	0.03	0.02	-0.03	0.05	*
Labor force	0.07	0.11	0.07	0.03	0.15	0.17	0.16	0.09
Have children under 18	0.05	-0.02	*	*	0.06	0.07	0.11	0.02
Metropolitan	*	0.11	0.05	*	0.09	0.07	-0.03	0.04

	Education	Income	Female	Age 35-54	Hispanic	Married	Labor force	Have children under 18
Volunteer	0.22	0.17	0.07	0.08	-0.11	0.07	0.07	0.05
Attend performing arts	0.33	0.22	0.07	0.07	-0.11	0.02	0.11	-0.02
Read literature	0.24	0.17	0.18	0.04	-0.14	0.02	0.07	*
Read books frequently	0.20	0.11	0.14	0.04	-0.11	0.03	0.03	*
Attend sports	0.19	0.23	-0.13	0.07	-0.06	0.02	0.15	0.06
Play sports	0.18	0.21	-0.17	0.04	-0.06	-0.03	0.17	0.07
Do outdoor activities	0.16	0.20	-0.07	0.09	-0.12	0.05	0.16	0.11
Created photos, paintings, or writings	0.14	0.11	0.07	0.02	-0.06	*	0.09	0.02
Education	1.00	0.29	-0.04	0.13	-0.12	0.12	0.09	0.05
Income	0.29	1.00	-0.07	0.19	-0.13	0.24	0.19	0.12
Female	-0.04	-0.07	1.00	*	*	-0.06	-0.06	0.05
Age 35-54	0.13	0.19	*	1.00	*	0.19	0.19	0.32
Hispanic	-0.12	-0.13	-0.01	*	1.00	*	-0.02	0.08
Married	0.12	0.24	-0.06	0.19	*	1.00	0.02	0.33
Labor force	0.09	0.19	-0.06	0.19	-0.02	0.02	1.00	0.16
Have children under 18	0.05	0.12	0.05	0.32	0.08	0.33	0.16	1.00
Metropolitan	0.12	0.10	*	*	0.10	-0.05	0.03	*

*No statistically significant correlation.

2002 Survey of Public Participation in the Arts

Office of Research & Analysis

National Endowment for the Arts