

## **Public Sector Volunteerism**

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*The objective of this study is to analyze the relationship between organizational capacity and the use of firefighter volunteers by volunteer fire departments within local/county governments. The study is based on a nonrandom sample of 213 U.S. volunteer fire departments within local governments. The fire chief of these fire departments responded to an annual survey conducted by Firehouse Magazine in 2010 and 2011. This study uses OLS regression analysis to assess the impact of organizational capacity (measured as annual budget) on the number of firefighter volunteers used by the volunteer fire department. There is evidence to suggest that organizational capacity has a positive and statistically significant effect on the number of volunteers used among U.S. volunteer fire departments. This study extends current literature on public volunteerism by analyzing factors that explain variation in the use of volunteers by local governments, specifically fire departments. Findings suggest that fire departments with greater resources in terms of revenue are more likely to use volunteers.*

*Keywords: Public sector volunteerism, organizational capacity, firefighter volunteers*

## **Introduction**

What factors explain a local government's use of public volunteers for service delivery? It is well established in the literature that public organizations (e.g., local, state and federal governments) benefit from collaborative efforts with volunteer groups in achieving effective emergency management (Simpson & Strang, 2004; Gazley & Brudney, 2005; Brudney & Gazley, 2009; Curry, 2011; Tierney, 2012). Volunteer groups, for example, can help government efforts in emergency mitigation, preparedness, response and recovery. While vast research has focused on the advantages and challenges of collaborating with volunteer groups in emergency management, little research has focused on the use of volunteers by public organizations, particularly local governments (Brudney & Kellough, 2000; Fredericksen & Levin, 2004; Gazley & Brudney, 2005; Choudhury, 2010; Dover, 2010). This study, therefore, adds to this developing line of research by exploring factors that cause variation in the use of volunteers within local governments in emergency response. Specifically, we analyze the use of volunteer firefighters in a sample of U.S.

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local governments since volunteers are most commonly used in this service area (Brudney & Duncome 1999; Gazley & Brudney, 2005).

## **Literature Review**

### ***Public Volunteerism Defined***

Public sector volunteerism differs from volunteerism in nonprofit organizations where volunteers typically comprise the primary workforce that provides a collective social benefit, often in collaborative partnerships with other groups (e.g., private and public organizations) (Simo & Bies, 2007). Public sector volunteerism instead refers to uncompensated and uncoerced volunteer activity, which is a position within a government agency with on-going responsibilities that directly benefit the agency's constituency (Brudney, 1999). Service areas where volunteers are more commonly used by local governments include fire services, economic development, parks and recreation and libraries (Gazley & Brudney, 2005). This definition of public volunteerism has several implications for public management.

First, in order for volunteer activity to take place within a government agency, efforts must be made to recruit volunteers because not doing so may result in low levels of volunteer involvement. Recruitment may include efforts to educate citizens on volunteer opportunities as well as interviewing potential volunteers. Choudhury (2010), for example, found that personal contacts, walk-ins and public events were among the most commonly cited methods of recruiting volunteers among a sample of local governments.

A second implication for public management is that volunteer programs must be appropriately designed to produce a benefit to the agency's constituency. At a minimum, for example, a volunteer program should feature training for volunteers (Gazley & Brudney, 2005). This allows volunteers to be exposed to the mission of the agency, constituency served and performance expectations. While research has found improvements in the professionalization of managing public volunteers, some features, such as a designated budget and a paid volunteer coordinator, remain underutilized among local governments (Gazley & Brudney, 2005).

Thus, a third and perhaps most important implication is that volunteer programs require an appropriate investment of funds by a local government as there are costs associated with recruitment, training and administration (Brudney & Duncombe, 1991; Brudney & Kellough, 2000). Volunteers, for example, are entitled to reimbursement of out-of-pocket expenses as volunteers should not have to pay for the privilege to help the organization (Brudney, 1990). An organization's inability to reimburse these expenses may limit the diversification and/or the number of volunteers as some may be unable to incur the costs associated with volunteering.

### ***Benefits of Public Volunteerism***

Local governments derive several benefits from recruiting and retaining volunteers for the delivery of public services, which may encourage the use of public volunteers. Chief among these benefits for local government use of volunteers are cost savings and increased capacity of the agency (Brudney, 1990; Montjoy & Brudney, 1991; Brudney & Kellough, 2000; Brudney & Duncombe, 1992; Gazley & Brudney, 2005). Through the use of public volunteers, for example, the local government is able to produce more public services or increase its capacity to respond to public needs at a minimal cost. In addition, a local government under economic distress may use public volunteers to deliver a public service that it would otherwise be unable to provide.

A second commonly cited benefit in the literature is that public volunteerism helps to raise public awareness and support of government programs and enhances government responsiveness to the needs and preferences of citizens (Brudney, 1990; Montjoy 1991; Brudney & Kellough, 2000; Gazley & Brudney, 2005). Through public volunteerism, for example, citizens learn about the needs and challenges of their local government and have a unique opportunity to exchange ideas and information with public officials. As a result, citizens may be more inclined to support government expenditures in new service areas and government in return may be perceived to be more responsive to the citizenry.

Third, local governments benefit from the experience and education of public volunteers, who tend to be older, educated and with above-average incomes (Brudney, 1990; Brudney & Kellough, 2000; Gazley & Brudney, 2005; Dover 2010). The expertise of public volunteers, for example, can help improve the quality of government services because volunteers' experience can infuse innovative ideas and solutions. Public volunteers are also potential recruits in the event of vacancies within the organization, which benefits the agency by reducing costs associated with recruitment and training.

### ***Challenges of Public Volunteerism***

The use of volunteers by local governments, however, is not without challenges. One such challenge relates to capacity. Often, local governments lack the funding to support a volunteer program and/or lack the staff to train and supervise volunteers (Brudney & Kellough, 2000; Gazley & Brudney, 2005). The lack of funding, however, may stem from a lack of support from elected officials and/or top administrators within the agency. Among local government administrators surveyed, for example, 15 percent perceive that public officials believe that volunteers belong in the nonprofit sector as opposed to in local government (Gazley & Brudney, 2005). In another study of state agencies, of personnel managers surveyed, 18.2 percent reported a lack of support from department heads and supervisors for volunteer program and another 10.6% reported a lack of support from top elected/appointed officials for volunteer program (Brudney & Kellough, 2000). For example, if the top appointed official does not support the existence of a volunteer program, then he or she may be less likely to fund the program because they may find other government functions to be more important and worthy of funding.

Second, local governments face challenges in not only recruiting volunteers but also relying on volunteers to provide consistent public services because of volunteers' varying availability and high turnover rates (Brudney & Kellough, 2000; Gazley & Brudney, 2005; Hager & Brudney, 2011). This can be especially problematic in instances where a local government is highly dependent on public volunteers for the delivery of public services such as fire protection, a service area where volunteers are more commonly used (Gazley & Brudney, 2005). For example, if a fire department is experiencing a volunteer firefighter deficiency, then the department is less capable of responding to a fire emergency, which may pose a serious threat to public safety.

Lastly, Brudney (1990) warns against the possibility that agency values and volunteer values may differ and clash. While performance management practices (e.g., performance reviews) help maintain the values of paid staff aligned with those of the agency, the same practices may not be as effective with volunteers since volunteers have no major stake in the organization (e.g., paid job). It is imperative, therefore, for local governments to develop strategies that help maintain congruence between the values of the volunteer and the agency. Thus, holding volunteers accountable and at the same time motivated to perform is a challenge faced by local governments in using volunteers.

### ***Predictors of Public Volunteerism***

Brudney and Kellough (2000) analyzed factors that explain variation in the use of public volunteers by conducting a survey of a nationwide random sample of personnel managers of state agencies. They hypothesized that agencies in specific service areas (e.g., education, health & human services, and public safety), larger in size (e.g., budget & number of full-time staff), and those with less employees belonging to union would all be associated with an increase in the use of volunteers by state agencies (Brudney & Kellough, 2000). Among personnel managers that responded to the survey, 36 percent reported that their agency used volunteers for the delivery of public services (Brudney & Kellough, 2000). This suggests that the majority of state agencies surveyed (74%) do not report a reliance on volunteers for service delivery. Of the explanatory variables, organizational mission ( $p < 0.001$ ) and size ( $p < 0.05$ ) were found to have a statistically significant effect on agency use of volunteers. This suggests that state agencies with organizational missions relating to education, health and human services, and public safety and agencies larger in size are more likely to use volunteers. One implication of these findings is that more individuals will volunteer in service areas where a direct benefit to the public is provided (e.g., educating others; fire rescue) because the work may be perceived to be more meaningful. Another implication is that organizational capacity matters in explaining why some state agencies use volunteers, as larger organizations tend to have greater resources than smaller organizations.

### **Theory and Hypothesis**

The literature and theories of volunteer management consistently identify the need and importance of organizational capacity for the development and sustainability of a volunteer program (Brudney,

1990; Brudney 1999). A local government that allocates more funds to a volunteer program is able to engage in recruitment, training and administration activities because it has greater capacity to expend on advertising/marketing to recruit volunteers, costs associated with training staff and materials, and administrative costs such as out-of-pocket reimbursement, volunteer rewards (e.g., stipends), liability insurance and/or staff to manage volunteers. An increase in an organization's capacity to expend on these activities is expected to have a positive effect on volunteer use. This study, therefore, purports to test the following hypothesis:

H<sub>1</sub>: Among U.S. volunteer fire departments, an increase in annual budget is associated with an increase in volunteer use.

## Methods

The study is based on a survey of volunteer fire departments within local governments across the United States. A total of 213 fire chiefs of volunteer fire department responded to an open call to complete an annual survey conducted by Firehouse Magazine® in 2010 and 2011 (see Appendix A for sample survey). Because convenience sampling was used, generalizability of the findings is compromised. A compiled data set for years 2010 and 2011 was used for statistical analysis. No cases were deleted from the sample.

The dependent variable in this study is the use of volunteer firefighters (NOM) by the fire department, which is measured as the number of volunteer firefighters reported by the fire department chief at the time of completing survey. On average, fire departments use 58.07 firefighter volunteers (see Table 1). For the analysis, I standardized this variable by dividing the number of volunteers by the size of population protected (NOMstd).

**Table 1: Descriptive Statistics of Dependent, Independent & Control Variables**

Variable	Mean	SD	Min. Value	Max Value
(NOM) Total # of Volunteers	58.07	47.955	10	300
(BUDGET) Annual Budget	671953.44	1182289.412	8500	8500000
(POP) Population Protected	16025.32	18120.068	652	110,000
(URBAN) Urban (=1) <sup>a</sup>	0.08	0.272	0	1
(SUBUR) Suburban (=1) <sup>a</sup>	0.32	0.467	0	1

<sup>a</sup>Rural is the reference group.

The independent variable in this study is organizational capacity of the fire department (BUDGET), which is measured as the reported annual budget of the fire department. This is an appropriate measure as organizations with larger budgets are likely to have greater capacity (i.e., resources) to recruit and retain volunteers (see Brudney & Kellough, 2000). On average, fire departments have an annual budget of \$671,953 (see Table 1). For the analysis, I first normalized this variable by using the natural log of annual budget and then standardized this value by dividing it by the size of population protected (BUDGETstd).

In order to control for rival explanations or spuriousness, the analysis was controlled for population protected by fire department (POP) and community type (e.g., rural, urban or suburban) (SUBUR & URBAN). Population protected is measured as the total number of citizens for which the fire department is responsible to assist in the event of an emergency. On average, results indicate that the size of population protected was 16,025 citizens (see Table 1). Community type was recoded into two dummy variables for urban and suburban with rural as the comparison group. The urban variable (URBAN) was coded 1 if community type is reported to be urban or 0 otherwise, and suburban variable (SUBUR) was coded 1 if community type is reported to be suburban or 0 otherwise.

This study used OLS regression analysis to assess the impact of organizational capacity on the number of volunteers used by the volunteer fire department, controlling for size of population protected and community type. No multicollinearity concerns were found as the tolerance values for all variables were well above the standard threshold ( $>0.2$ ) and the variance inflation factor for all variables was below 5. An outlier check using Cook's D reveals that there are no cases that are influential. The regression model is specified as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

where  $Y = \text{NOMstd}$ ,  $X_1 = \text{BUDGETstd}$ ,  $X_2 = \text{POP}$ ,  $X_3 = \text{SUBUR}$ , and  $X_4 = \text{URBAN}$ .

## Results and Discussion

Results of the OLS regression analysis are recorded in Table 2. Overall, the model is statistically significant (global F-test,  $p < 0.001$ ). This finding suggests that among U.S. fire departments, at least one of the independent variables has a statistically significant effect on the number of firefighter volunteers used. Thus, the null hypothesis is rejected.

An  $R^2$  value of 0.52 suggests that the annual budget of a U.S. fire department, size of the population protected by the department, and community type (e.g., whether urban, suburban, or rural) explains 52% of the variation in the number of volunteer firefighters used by a U.S. fire department. The literature suggests that other factors that may have an impact on volunteer use includes an organization's culture and recruitment strategies (Hager & Brudney, 2011). For example, negative

staff-volunteer relations may have a negative impact on an organization’s ability to retain volunteers. Because of data set limitations, these factors were not included in the regression model.

A constant value of 0.003 suggests that on average, among U.S. fire departments, we can expect for a fire department with no annual budget or population protected in a rural area to use 0.003 firefighter volunteers (per citizen in population protected).

**Table 2: OLS Regression of the Effects on Use of Volunteer Firefighters**

Variable	Use of Volunteers	
	B (SE)	$\beta$
BUDGETstd	1.554*** (0.136)	0.669
POP	-3.275E-8** (0.000)	-0.120
SUBUR <sup>a</sup>	0.001 (0.001)	0.074
URBAN <sup>a</sup>	0.000 (0.001)	0.018
Constant	0.003 (0.001)	-
R <sup>2</sup>	0.520	
Adjusted R <sup>2</sup>	0.510	
S <sub>e</sub>	0.003	
Model F	51.50***	
Model Degrees of Freedom	4, 208	

Note: B (SE) = unstandardized estimate of the regression coefficient (and its standard error).  $\beta$  = standardized estimate of the regression coefficient.

<sup>a</sup>Rural is the reference group.

\*\*\*  $p \leq 0.001$ , \*\*  $p \leq 0.05$ , (one-tailed tests)

Of the explanatory variables included in the model, only two were statistically significant. First, as expected, organizational capacity, measured in terms of annual budget, has a positive and statistically significant effect on volunteer use by U.S. volunteer fire departments ( $p < 0.001$ ). On average, among U.S. volunteer fire departments, volunteer use is predicted to increase by 0.669 standard deviations for every one standard deviation increase in annual budget, holding population protected and community type constant. This finding confirms theoretical arguments about the relevance and importance of organizational capacity in explaining variation in volunteer use. Fire departments with more funds per citizen in population protected will be more able to use volunteers to expand the scope of services provided.

Second, population protected has a negative and statistically significant effect on volunteer use by U.S. volunteer fire departments ( $p < 0.05$ ). This suggests that on average, among U.S. volunteer fire departments, volunteer use is predicted to decrease by -0.120 standard deviations for every one standard deviation increase in population protected, holding annual budget and community type constant. This finding is intriguing because one would expect that an increase in population protected would result in a local government expending more resources to provide fire services through volunteers. This finding, however, might be explained by the work of Brudney and Duncombe (1992) who argue that once the level of cost per volunteer reaches a certain cost ( $> \$800$ ), it becomes more cost-effective to add paid firefighters.

Lastly, whether the fire department resided within a suburban, urban or rural community failed to achieve statistical significance in this model. This suggests that community type (e.g., urban, suburban or rural) does not have a significant effect on the number of volunteers used by a U.S. fire department. The implication here is that regardless of where the fire department resides, volunteer use will be a function of the amount of funds allocated by the local government. That is, fire departments in suburban, urban and rural communities are all equally more likely to use more firefighter volunteers if all are afforded more funds for their volunteer programs.

## **Conclusion**

The purpose of this study was to test the significance of a volunteer fire department's organizational capacity, measured as annual budget, in explaining variation in volunteer use. Established literature and theory on volunteer management suggests that capacity matters as an organization that expends more resources will be a better position to recruit and retain volunteers. Using a convenience sample of U.S. volunteer fire departments, OLS regression was used to assess the effect of capacity on firefighter volunteer use, controlling for other factors such as size of population protected and whether fire department resided in a suburban, rural or urban community. Findings confirm the research hypothesis which suggests that an increase in capacity is indeed positively and significantly associated with an increase in volunteer use among U.S. volunteer fire departments. The major implication of this finding is that if a local government intends to sustain and/or expand the capacity of its volunteer fire department to provide fire services through the use of volunteers, then appropriate funds must be allocated to support the volunteer program. This



finding is generalizable to local governments that rely on volunteer fire departments. Future research should assess differences in the effect of organizational capacity between volunteer fire departments and departments that rely on both volunteer and paid firefighters.

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