ABSTRACT

The growing volunteer movement in America parallels a shift to "knowledge-based" companies. This shift increases the opportunity for people to gain knowledge-based job skills from non-traditional avenues such as volunteerism. This study investigates the link between gaining job skills through volunteering and career attainment. Results of a survey of recent college graduates indicate that volunteers gain a variety of job skills, especially managerial skills. Further, results show that career attainment as measured by one's interaction with data is positively related to job-related skills improved through volunteering. The study also found that while women volunteer at a higher rate than men and improve in similar job-related skills, there are no differential effects on career attainment between men and women from improving job skills through volunteering.

Doing Well by Doing Good: Career Attainment and Volunteerism

Lisa Klein Surdyk and Margaret A. D. Diddams

The April 1997 Presidents' Summit for America's Future, spearheaded by Colin Powell, President Clinton, and all living former presidents, thrust volunteerism into the limelight. The summit focused on the need for volunteerism, especially for partnerships between American corporations and their employees to volunteer to serve America's youth (Barnes, 1997). This was not just a passing media blip. Volunteer efforts in America have risen recently. In fact, Americans contributed 20.3 billion hours of their time in 1995, an increase of over one billion more hours than in 1993 (Gattuso, 1996).

Recent literature notes that corporate-sponsored volunteering has several beneficial side effects. While meeting local needs, it also enhances a corporation's standing in the community and it may lead to the development of leadership and management skills that can be utilized in the workplace (Ellis, 1993; Lee, 1995; Whitman, 1993). As a result, many American corporations, such as American Express, Equitable, Chevron and McGraw-Hill, actively encourage volunteering (Loeb, 1996). At IBM, 45 percent of its employees engage in volunteer work in their communities while Microsoft conducts an annual "day of sharing" so that employees may take the day with pay to do volunteer work.[1]

This growing interest in and appreciation of volunteerism parallels the increased importance of, and numbers of, "knowledge-based organizations" (Zuboff, 1988; Stewart, 1997). Stewart refers to knowledge-based organizations as firms "dependent on knowledge as a source of what attracts customers and clients and on information technology as a means of running the place." He adds that "in these firms, information replaces inventory and physical assets are replaced by intellectual assets (networks and databases)." In other words, compared to traditional companies primarily made up of tangible, or fixed, assets (buildings, machines, etc.), knowledge-based organizations have very few tangible assets.

Wall Street may actually value knowledge-based organizations more highly than other organizations. To illustrate, Stewart compares IBM Corporation, a more traditional firm, to Microsoft Corporation, a knowledge-based organization. As of November 1996, IBM's market capi-

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talization (stock price times the number of shares outstanding) had reached $70.7 billion compared to Microsoft's market capitalization of $85.5 billion. However, the two companies' tangible asset levels were strikingly different. While IBM owned fixed assets worth $16.6 billion, Microsoft's fixed assets were worth just $930 million (Stewart, 1997). As Mike Murray, Vice President for Human Resources at Microsoft Corporation, has stated, "our assets go home every night."[2]

Since employee knowledge replaces other fixed assets as a competitive advantage, the development of employee skills as an additional resource to be managed becomes increasingly important. A number of authors of popular press articles and academic researchers note that the maintenance and enhancement of important job-related skill sets may not only occur in traditional on-the-job training, but may also occur through volunteerism outside of the job (Lee, 1995; Whitman, 1993). Subsequently, while the corporate image is enhanced through employee community involvement, companies should not overlook the potential for individual career development through volunteerism, especially for employees who work for knowledge-based corporations where employee development is critical. As Howard Isenberg (1993), general manager of a manufacturing company, notes, certain volunteer experiences serve as an ideal training ground for promising managers in the corporate world, since non-profit organizations often provide volunteers the opportunity to put their skills to work immediately.

As a case in point, UPS developed a month-long off-site management development program that revolved around a community volunteer project. One of the program's goals was to help managers improve their motivational skills while increasing their understanding of people's sensitivities and individual needs—"soft skills" they were expected to integrate back into the workplace (Laabs, 1993). Perhaps the most dramatic example of the integration of volunteerism and career attainment is Arthur Fry, who in trying to solve a problem for his church choir—how to mark the day's hymns without damaging the hymnals—conceived the product that became 3M's Post-it notes (Stewart, 1997).

Employees themselves also may be motivated to volunteer for their own career development. While people may volunteer to enhance the social good, Smith (1983) noted that volunteers generally are "engaging in unpaid, uncoerced activities for various kinds of tangible and intangible incentives." Gidron (1977) found that in addition to the opportunity to serve others, volunteers also expected their activities to be a learning experience for self-development. For example, Setterberg and Schulman (1985) noted that while volunteers work with interesting people, develop self-esteem, and accomplish an important mission, they also have an opportunity to learn new skills. Likewise, Kyle Harris (1997) of the American Cancer Society notes that volunteer jobs "give you an edge in job-hunting, in strengthening relationships and in bolstering your talents."

Other articles focusing particularly on women's career development have also touted that skills gained from volunteerism may enhance career development by developing knowledge, contacts, and skill sets outside of the work setting (Hybels, 1978; Johnson, 1990). Such activities may enhance work-related skills leading to an alternative avenue to career development (Baskerville, 1993; Lee, 1995). In addition, since work-related skills can depreciate when layoff, illness, or childbearing disrupt work experience, volunteering may, as Unger (1991) noted, "allow people to rebuild or maintain employment skills when they are not participating in the job market ...".

Human capital theory suggests that greater career attainment is a logical outcome related to employee investment in variables such as experience and work-related training and education (Becker,

1975; 1985). For example, Zemsky, Lynch and Cappelli (1995) found that, on average, a 10 percent increase in workforce education led to an 8.6 percent increase in output for all industries, other things being equal. This effect rises to 11 percent for the non-manufacturing sector. Consequently, people who develop work-related skills outside of work may increase their human capital investment which, in turn, should lead to greater opportunities for career development.

Despite the intuitive appeal of this noble line of reasoning linking volunteerism to enhancement of employee skill sets, few if any researchers have produced empirical evidence showing a positive relationship between skill development through volunteering and career attainment itself. Wandersman and Alderman (1993) lamented that "the research literature on the costs and benefits of volunteerism ... is remarkably sparse," while Schram (1985) noted that "research on job skills and volunteer work has been minimal."

Consequently, the purpose of this investigative study is to: 1) identify the types of volunteer activities people engage in; 2) identify the types of skills people improve through volunteering; 3) examine the relationship between skills improved through volunteering and current job skills; 4) examine the relationship between skills improved through volunteering and career attainment; and 5) identify demographic differences in volunteer activities and their effect on career attainment.

METHODOLOGY

Method

The authors of this study mailed a six-page survey, with a cover letter from the university's Provost and Vice President of University Advancement, to a random sample of 487 undergraduate alumni of a small Pacific Northwest university who graduated between 1985 and 1990. After two weeks the alumni received a reminder postcard. Two weeks later they received another survey, which was followed in two weeks by another postcard.

Materials

The survey included separate sections asking respondents to report their career history, volunteer history, skills they improved through volunteering, and skills they used on their job. The authors prepared five different versions of the survey where the ordering of the sections pertaining to career, volunteer, and skills information differed in each version. Thus, 20 percent of the sample received Version #1, 20 percent received Version #2, etc. This way, responses to the survey would not be biased based on the particular order in which the sections appeared. Finally, each participant provided his or her age, sex, race, and college major.

The authors measured career attainment using the Department of Labor's *Dictionary of Occupational Titles* guidelines. Comparisons across or even within occupations can be daunting without a common metric. In the late 1930s the Department of Labor developed the functional job analysis in response to the demand of an expanding public employment service for standardized occupational information to support job placement activities (Department of Labor, 1991). The functional job analysis recognizes that every job requires a worker to function to some degree in relation to *data, people,* and *things.* Consequently, the Department of Labor has assigned each job a three-digit code according to its level of sophistication of interaction with data, people, and things. Table I shows the data, people, things measures the Department of Labor uses to describe each job. In general, worker functions involving more complex responsibility and judgment are assigned lower numbers, while functions that are less complicated have higher numbers. For instance, "synthesizing" and "coordinating" data are more complex tasks than "copying" data; "instructing" people involves a broader responsibility than "taking instructions-

TABLE I

Data, People, Things Measures

Data	People	Things
0 Synthesizing	0 Mentoring	0 Setting Up
1 Coordinating	1 Negotiating	1 Precision Working
2 Analyzing	2 Instructing	2 Operating-Controlling
3 Compiling	3 Supervising	3 Driving-Operating
4 Computing	4 Diverting	4 Manipulating
5 Copying	5 Persuading	5 Tending
6 Comparing	6 Speaking-Signaling	6 Feeding-Offbearing*
	7 Serving	7 Handling
	8 Taking Instructions-Helping	

Source: *Dictionary of Occupational Titles*, Department of Labor, 1991, p. xiii.

Worker functions involving more complex responsibility and judgment are assigned lower numbers, while functions that are less complicated have higher numbers.

* Feeding refers to loading raw materials or goods in process, and offbearing refers to unloading finished goods.

helping"; and "operating" things is a more complicated task than "handling" things (Department of Labor, 1991). For example, a tax accountant has a 162 data, people, things designation. A tax accountant *coordinates* data (1), *speaks to or signals* people (6), and *operates* or *controls* things (2). In short, s/he has a fairly sophisticated interaction with data and things, but a fairly low-level interaction with people.

Participant demographics

Completed surveys were returned by 185 alumni giving a response rate of 38 percent, which is expected for this type of survey methodology (Weisberg, Krosnick, and Bowen, 1996). Of the respondents, 69 percent were women and 97 percent were white. The respondents' average age was 32 years. To determine whether the percentages of men and women who responded to the survey differed significantly from the percentages of men and women in the entire population from which the sample came, the authors calculated a statistic called a chi-square statistic (chi is pronounced "kigh"). This statistic will be larger than a particular value (called a critical value) if the observed and expected frequencies are substantially different. The chi-square statistic in this case was lower than the relevant critical value, indicating no significant difference by gender between respondents and the population.[3] Thus, we can be fairly confident that any results of analysis based on gender generally would apply to the entire population from which our survey sample was drawn.

Table II shows that most subjects (88 percent) were employed at the time they were surveyed, primarily in professional, technical, or managerial positions. Of the survey respondents, 10 percent were homemakers. The authors consequently removed the homemakers from the sample before performing data analysis pertaining to improving job skills through volunteering and career attainment since they had voluntarily extracted themselves from the workforce and were not currently involved in a job search.

TABLE II

Occupational Status of Respondents

Occupational status	Frequency	%
Professional, technical, managerial	130	70.3
Sales, clerical	19	10.3
Homemaker	19	10.3
Sole proprietor	10	5.4
Unemployed, student	4	2.1
Service worker, skilled laborer	3	1.6
Totals	185	100.0

FINDINGS

1. Identify the types of volunteer activities people engage in. Of the subjects responding, 81 percent reported having volunteered for at least one organization in the previous five-year period for an average of 20.5 hours per month, implying a regular commitment to volunteering. This result was slightly higher than a recent national survey that showed the typical volunteer in America volunteered for 218 hours in 1995, or just over 18 hours per month (Gerson, 1997). Table III indicates that respondents primarily volunteered for religious, social service, and educational organizations.

TABLE III

Volunteer Organization Types

Type of voluntary organization	Frequency of mentions	%
Church or religious organization	163	45.2
Social Service/Relief	73	20.2
Educational/Athletic	66	18.3
Professional	13	3.6
Health-related	12	3.3
Youth services	10	2.8
Political	8	2.2
Fraternal	6	1.7
Cultural	4	1.1
Environmental	4	1.1
Civic	2	.6
Totals	361	100.0

2. Identify types of skills people improve through volunteering. Survey respondents indicated, from lists of 47 skills, a) which skills they use in their current jobs and b) which skills they have improved through volunteering. The list of skills was developed from previous studies related to classification of job skills (Livingstone, 1971; Mintzberg, 1973; Schram, 1985; Teach and Govahi, 1993; Waters, 1980). Table IV (on page 16) lists the 47 skills classified into five categories: financial, management, public relations, research, and technical/professional. It also includes the percentage of respondents who reported that they used the skill in their current job, improved the skill by volunteering, and the percentage of respondents who reported that they both used the skill on their job and improved it through volunteering.[4] Of those who volunteered, 86 percent reported that volunteering enhanced certain job-related skills, most commonly *communication, leadership* and *motivating others*, with 63 percent, 49 percent and 47 percent of the sample, respectively (see Table V on page 17).

3. Examine the relationship between skills improved through volunteering and current job skills. Table V (on page 17) shows the 10 skills respondents most commonly improved through volunteering.

An important question raised by these 10 skills is if respondents improved a skill through volunteering, did they also use it on the job? The results of this analysis were quite remarkable. As shown in the last column of Table V, in most cases, over two-thirds of those who improved in these specific skills also used the skill in their current jobs. In some cases, specifically with communication, creative problem solving, and creative thinking, 80 to 95 percent of respondents who improved the skill through volunteering also used it in their current jobs.

4. Examine the relationship between skills improved through volunteering and career attainment. For this part of the analysis, the authors calculated correlation coefficients between the occurrences of job-related skills improvement and the level of attainment of respondents' current jobs as measured by the Department of Labor's data, people and things classifications.[5] A correlation coefficient is a measure of the linear association between two variables, and its sign indicates whether the relationship is positive or negative. A correlation coefficient of +1 would indicate that two variables are perfectly positively correlated, and a coefficient of –1 indicates two variables are perfectly negatively correlated. A value of zero indi-

TABLE IV

Skill Inventory Results

Skills	% of sample who used skill in current job (n=166*)	% of sample who improved skill via volunteering (n=134**)	% of sample who used skill in current job and improved skill via volunteering (n=134**)
FINANCIAL SKILLS			
Accounting	34.3	7.5	3.0
Bookkeeping	30.1	11.9	4.5
Budgeting	45.8	13.4	6.0
Fund raising	14.5	25.4	5.2
Effective grant writing	14.5	5.2	0.0
MANAGERIAL SKILLS			
Creative problem solving	86.7	38.1	32.8
Communication	94.6	63.4	60.4
Team building	74.1	43.3	32.1
Delegating responsibility	72.3	24.6	16.4
Leadership	71.7	49.3	37.3
Organization	87.3	36.6	30.0
Program development	50.6	34.3	21.6
Directing others' work	63.9	26.1	17.2
Interviewing	50.0	10.4	4.5
Conflict resolution	74.1	36.6	29.1
Enforcing rules	59.6	25.4	13.4
Adapting to new tasks	76.5	28.4	21.6
Performance appraisal	51.2	10.4	4.5
Decision-making	86.1	34.3	30.0
Assessment of situations	78.3	32.8	28.4
Seeing the "big picture"	80.1	38.8	30.6
Prioritizing	89.8	26.9	22.4
Time management	88.6	27.6	23.1
Creative thinking	78.3	38.8	31.3
Reflective listening	69.9	38.8	29.1
Planning	84.9	32.8	26.1
Forming coalitions	33.1	15.7	9.0
Motivating others,	69.9	47.0	32.8
Scheduling and coordinating	75.3	34.3	26.9
Goal setting	76.5	31.3	25.4
Conceptualizing	52.4	17.9	12.7
Exerting influence	56.6	25.4	19.4
Managing stress	78.3	24.7	28.4
PUBLIC RELATIONS SKILLS			
Making presentations	60.2	44.0	26.9
Persuading	49.4	23.1	18.7
Writing/Editing	63.3	22.4	17.2
Advertising	22.9	13.4	3.7
Sales	20.5	5.2	3.0
RESEARCH SKILLS			
Information gathering	66.3	17.2	13.4
Data analysis	57.2	12.7	10.4
Evaluation	65.7	15.7	13.4
Writing effective reports	48.2	13.4	10.4
TECHNICAL, PROFESSIONAL SKILLS			
Forecasting	23.5	3.7	3.0
Computer programming	21.1	6.0	3.7
Counseling, advising, teaching	60.8	38.8	28.4
Drafting, engineering	3.6	0.8	0.0
Mathematics	23.5	4.5	2.2

* 166 = number of non-homemakers in sample.

** 134 = number of non-homemakers who volunteered.

TABLE V

Ten Most Common Job Skills Improved by Volunteering

Skill	% of Sample (n = 134*)	% of people who improved skill through volunteering who also used skill in current job
Communication	63.4	95.3
Leadership	49.3	75.8
Motivating others	47.0	69.8
Making presentations	44.0	61.0
Team building	43.3	74.1
Counseling, advising, teaching	38.8	73.1
Creative thinking	38.8	80.8
Seeing the "big picture"	38.8	78.8
Reflective listening	38.8	75.0
Creative problem solving	38.1	86.3

*134 = number of non-homemakers who volunteered

cates no linear relationship. Job-related skill improvement was measured using indexes based on the five skill categories. The indexes only included skills where a significant majority of respondents reported using the skill in their current jobs. The Appendix lists the specific skills included in each index. Table VI contains the resulting correlation matrix which displays the correlation coefficient variables. A correlation is deemed significant, meaning the two variables are related, when the significance level (noted by *p*) is "low." Low is typically considered to be less than 0.10 or 0.05. The probability that a coefficient of 0.15 is obtained when there is no linear association in the population between the two variables is less than 0.05. In general, results in Table VI show significant positive correlation between career attainment as measured by interaction with data and management, public relations, and, to a lesser extent, financial skills. Further, results indicate significant negative correlation between career attainment as measured by interaction with things and management and public relations skills. By contrast, the people measures were not significantly correlated with any categories of skill improvement.

5. *Identify demographic differences in volunteer activities and their effect on career attainment.*

TABLE VI

Correlation Among Job-Related Skill Improvement and Data, People, Things Measures

Variable	1	2	3	4	5	6	7	8
1. Data	—							
2. People	-.10	—						
3. Things	-.06	.23**	—					
4. Financial Skills	.15*	-.12	-.14	—				
5. Management Skills	.25***	-.12	-.21**	.37***	—			
6. Public Relations Skills	.22**	-.04	-.18*	.33***	.65***	—		
7. Research Skills	.12	-.03	.00	.29***	.40***	.40***	—	
8. Technical/Professional Skills	.09	-.01	.09	.04	.11	.17*	.31***	—

Significance levels: *$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

(The *significance level* (noted by *p*) is the probability that the hypothesis being tested is actually true when it is rejected. The probability typically is considered "low" when it is less than 0.10 or 0.05.)

Gender

Of the women, 87 percent indicated they had volunteered. Of the men, 72 percent indicated they had volunteered. A chi-square test indicated that women's participation rate exceeded that of the men.[6] Table VII reports the 10 most common skills respondents reported having improved through volunteering. Chi-square test results indicated little or no significant difference between men and women in terms of which job-related skills they improve through volunteering. Further, to determine whether women and men had improved in the same number of skills, on average, the authors performed *t*-tests for independent samples of gender. *T*-tests can be used to test whether two population means (averages) are equal. The hypothesis tested in this case is whether the number of skills improved is the same for men as for women. If the resulting *t*-statistic is greater than a particular critical value, then the hypothesis can be rejected. In this case, the *t*-test indicated that the hypothesis cannot be rejected, so we can infer on average that women and men had improved in the same number of skills.[7] However, another *t*-test indicated that men had a significantly higher degree of career attainment as measured by data than did women.[8]

To summarize to this point, analysis of the survey data indicates a significant positive correlation between career attainment as measured by interaction with data and management, public relations, and, to a lesser extent, financial skills. Further, women and men had improved in the same number of skills on average, but men had a significantly higher degree of career attainment as measured by interaction with data than did women. Given these findings, the authors set out to determine whether women were more likely than men to have the managerial and public relations skills gained through volunteering affect their career attainment. The authors used step-wise regression analysis to make this determination. This technique provided the opportunity to investigate three relationships: 1) the unique influence that gender has on career attainment measures; 2) the unique influence that job-related skill improvement through volunteering has on career attainment measures; and 3) the combined influence of gender and job-related skill improvement over and above their unique influences. Table VIII (on page 19)

TABLE VII

Chi-Square Test Results of Gender Differences Across the Ten Most Common Job Skills Improved by Volunteering

Skill	X^2	d.f.	Significance level
Communication	.010	1	.922
Leadership	.124	1	.724
Motivating others	1.810	1	.178
Making presentations	3.360	1	.067
Team building	.187	1	.666
Counseling, advising, teaching	2.140	1	.143
Creative thinking	.579	1	.447
Seeing the "big picture"	.168	1	.682
Reflective listening	.579	1	.447
Creative problem solving	.004	1	.949

Notes to Table VII:

A *chi-square test* tests the hypothesis that there is no difference between the observed frequency of a particular sample and what one would expect. It can be used when one has knowledge about the population from which a sample is drawn. The chi-square test statistic will be large (greater than a particular critical value) if the observed and expected frequencies are substantially different. The *critical value* depends on the *degrees of freedom* (d.f.), the number of linearly independent sample observations used in the calculation of a statistic, and the *level of significance* the researcher uses. The significance level is the probability that the hypothesis being tested is actually true when it is rejected. The probability typically is considered "low" when it is less than 0.10 or 0.05.

TABLE VIII

Step-wise Regression Results

Part 1: Dependent Variable: Career Attainment—Data

Independent Variables	R^2	ΔR^2	ß	Standard Error
1. Gender	.033	—	.181*	.159
2. Management Skills	.096	.063	.253**	.178
3. Gender x Management Skills	.096	.000	.023	.386
1. Gender	.033	—	.181*	.159
2. Public Relations Skills	.074	.041	.204**	.127
3. Gender x Public Relations Skills	.079	.005	.145	.260

Part 2: Dependent Variable: Career Attainment—Things

Independent Variables	R^2	ΔR^2	ß	Standard Error
1. Gender	.021	—	.144	.383
2. Management Skills	.065	.044	-.212**	.434
3. Gender x Management Skills	.066	.001	.090	.939
1. Gender	.021	—	.144	.383
2. Public Relations Skills	.048	.027	-.166*	.309
3. Gender x Public Relations Skills	.048	.000	-.014	.635

Significance levels: * $p \leq .05$ ** $p \leq .01$

(The *significance level* (noted by *p*) is the probability that the hypothesis being tested is actually true when it is rejected. The probability typically is considered "low" when it is less than 0.10 or 0.05.)

Notes to Table VIII:

Regression analysis is used to analyze the linear relationship between a dependent variable (career attainment here) and one or more independent (or explanatory) variables (gender and skills here). The resulting value of ß is the slope of the line that best fits the data. *Betas* are indicators of the relative importance of explanatory variables. If the beta values are significantly different than zero (indicated in the table above with the asterisks), then we infer that the associated independent variables help explain the variation in the dependent variable.

Step-wise regression involves regressing the dependent variable on each independent variable separately and keeping the regression with the highest R-square (see below). After the first variable is examined to see whether or not it should be removed, variables not in the equation are examined for entry. After each step, variables already in the equation are examined for removal. Variables are removed until none remain that meet the removal criterion.

The four equations used in the regression analysis are as follows:

Part 1:

Data measure of career attainment = $\partial + ß_1$(Gender) + $ß_2$(Management Skills Index) + $ß_3$(Gender x Management Skills Index),

Data measure of career attainment = $\partial + ß_1$(Gender) + $ß_2$(Public Relations Skills Index) + $ß_3$(Gender x Public Relations Skills Index),

Part 2:

Things measure of career attainment = $\partial + ß_1$(Gender) + $ß_2$(Management Skills Index) + $ß_3$(Gender x Management Skills Index)

Things measure of career attainment = $\partial + ß_1$(Gender) + $ß_2$(Public Relations Skills Index) + $ß_3$(Gender x Public Relations Skills Index)

R^2, or *R-squared,* is a measure of goodness of fit of a regression model. Its value can range between 0 and 1. An R-squared of 1 (or 100%) indicates that the independent variables explain 100% of the variation in the dependent variable. The R-squared values in the table are quite low, indicating that other variables (not considered in this article's analysis) likely also help explain the variation in career attainment. Such variables might include education level, prior work experience, etc.

ΔR^2, or *Adjusted R-squared,* takes into account how many explanatory variables are used in the regression model. Thus, it does not necessarily increase as additional variables are added, as R-squared often does, and is the preferred measure of goodness of fit.

Standard errors are a measure of the difference between observed values of the dependent variable and the values predicted by the regression equation. Thus, they are a measure of goodness of fit of the model. The lower the standard error, the better the model's predictive power.

contains the regression analysis results. The notes to the table include a more detailed explanation of step-wise regression. Results indicate that career attainment as measured by data is significantly affected by gender (higher for men) and by the improvement of management and public relations skills, but they indicate no combined effects over and above these individual effects. Further, career attainment as measured by things is significantly affected by the improvement of management and public relations skills, but not by gender, nor by the interaction of skills improvement and gender.

Occupational status

Table IX lists volunteer participation rates by occupational status. Work by Holland (1973) suggests that people whose career orientations are more social in nature, such as teachers, nurses, and social service workers, may be more drawn to volunteer activities than would people in other occupations. However, chi-square tests showed that volunteer participation rates do not differ significantly by occupational status.[9]

TABLE IX

Volunteer Participation Rates by Occupational Status

Occupational status	Percent who volunteered
Sales, clerical	90
Professional, technical, managerial	81
Sole proprietor	80
Service worker, skilled laborer	67
Unemployed, student	50

SUMMARY AND DISCUSSION

The aims of this investigative study of recent college graduates were five-fold. First, it identified the types of volunteer activities people engage in and found that survey respondents volunteered most often for religious, social service, and educational organizations.

Second, it identified the types of job skills people gain through volunteering. Of those who volunteered, 86 percent reported that volunteering enhanced certain job-related skills, especially managerial skills. The most common skills improved were communication, leadership and motivating others. Respondents also reported they used many of the skills gained through volunteering in their current jobs. Therefore, if volunteers can gain such a broad range of skills through their volunteer efforts, they likely can transfer some if not most of these skills to their jobs. These results corroborate those of Schram (1985) who concluded, "it seems reasonable to assume any volunteer job has the potential to allow a volunteer to develop several salaried jobs skills."

Third, this study examined the relationship between improving skills through volunteer activities and current job skills. Results indicated a frequent overlap between improving in specific skills and using the skills in one's current job. For instance, with communication, creative problem solving, and creative thinking skills, 80 to 95 percent of people who improved the skill through volunteering also used the skill in their current jobs. These findings give credence to the work of authors cited in the introduction of this article such as Smith (1983), Gidron (1977), and Setterberg and Schulman (1985). These authors have noted that while people may volunteer to enhance the social good, they also may tend to volunteer to gain skills that can be transferred back into the workplace. Therefore, as people decide how and where to devote their volunteer time, they should be aware of job-related skills they want to develop. Further, volunteer administrators should facilitate skill development among their volunteers.

The fourth aim of this study was to examine the relationship between skills gained through volunteering and career attainment. The analysis here revealed positive significant correlation between career attainment as measured by interaction with data and improvement of managerial, public relations, and financial

skills. This result did not hold for people and things measures, however. In fact, results indicated significant negative correlation between things and management and public relations skills, and the people measures were not significantly correlated with any categories of skill improvement. A possible explanation may be that data and things tend to be opposites in the *Dictionary of Occupational Titles* designations. That is, people in careers with high interaction with data may have concomitantly low interaction with things. Conversely, one may conclude that people in jobs with a higher level of interaction with data are more likely to seek volunteer opportunities where they can gain job-related skills. An example of an occupation with a high level of interaction with data and a low level of interaction with things is a manager. In the *Dictionary of Occupational Titles*, most managerial jobs have a data designation of level 1—"coordinating"—and a things designation of level 7—"handling" (see Table I). Most managers, then, work at a sophisticated level with data (financial, personnel, customer, etc.) and at a simple level with things (phones, merchandise, etc.). By contrast, a driver has a data designation of level 6—"comparing"—and a things designation of level 3—"driving, operating."

Finally, this study set out to identify demographic differences in volunteer activities and their effect on career attainment. Results showed that while women volunteered more often than men did, volunteer participation rates did not differ significantly by occupation. Further, the study indicated that even though women volunteered at a higher rate than men and improved in similar job-related skill areas through volunteering, there appears to be no effect of the interaction between gender and skill improvement on career attainment. In short, this study found no evidence that volunteering provided women any special benefits in terms of career attainment.

In summary, this article describes a positive correlation between acquiring job-related skills through volunteer activities and career attainment as measured by interaction with data. One may conclude, then, that improving in management, public relations, research and technical/professional skills through volunteer work may enhance one's level of interaction with data in his or her job. If so, then this study gives partial support to human capital theory which, as explained in the introduction, suggests that greater career attainment is a logical outcome related to employee investment in work-related training and education (Becker, 1975; 1985). This notion has interesting implications for knowledge-based companies that rely primarily on the use of data. Specifically, life-long learning—a necessity for employees in these types of organizations—may occur through volunteer activities outside one's job.

This descriptive study adds to the existing literature on volunteerism and career development in that it inquired about specific volunteer activities and specific job skills improved through volunteering. However, a limitation of this type of study is its reliance on self-reporting to get a single snapshot of information from a small subset of the general population. Consequently, future research could utilize longitudinal data and possibly compare data from knowledge-based organizations such as Microsoft or other software development firms, and those that are more traditional, such as manufacturing companies (Boeing, General Motors, etc.), to see if the skill transfer from volunteerism affects people's career attainment differently, depending on the type of organization they work for. Future research could also identify which specific types of volunteer activities transfer to skill sets and analyze their subsequent effect on both organizational and individual improvement, focusing more specifically on differential effects for men and women. This study begins to lay the framework for future research on the benefits of volunteerism for the workplace.

APPENDIX

Skill Indexes Used in Correlation and Regression Analyses

Skill Index	Skills Included in Index
Financial Skills	Budgeting
Managerial Skills	Creative problem solving Communication Team building Delegating responsibility Leadership Organization Directing others' work Conflict resolution Enforcing rules Adapting to new tasks Decision-making Assessment of situations Seeing the "big picture" Prioritizing Time management Creative thinking Reflective listening Planning Motivating others Scheduling and coordinating Goal setting Exerting influence Managing stress
Public Relations Skills	Making presentations Writing/editing
Research Skills	Information gathering Data analysis Evaluation
Technical/Professional Skills	Counseling, advising, teaching

ENDNOTES

[1]Corporate policy supplied by second author.

[2]Personal communication to second author, September 30, 1996.

[3]Results of chi-square test: $X^2 = 1.73$, d.f. = 1, $p > .10$.

[4]Respondents could write in skills not included on the list of 47. Thirty-two skills were so added. Of those, only two (music notation and sequencing and computer data entry) could not be categorized among the 47 skills listed.

[5]The authors converted the data, people, things measures so that a higher number indicates a higher level of interaction with the data, people, or things items in order to clarify the correlation matrix.

[6]Results of chi-square test:
$X^2 = 18.64$, d.f. = 10, $p < .05$.

[7]Results of *t*-test:
$t = -.101$, d.f. = 113, $p = .920$.

[8]Results of *t*-test:
$t = 2.55$, d.f. = 144, $p = .012$.

[9]Results of chi-square test:
$X^2 = 8.50$, d.f. = 5, $p = .13$.

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