A Research Study on the Demographics of Volunteering

Anika Krishnan[1], Jerone Mitchell[#] and Sergey Lapin[#]

[1]The Overlake School, Redmond, WA, USA
[#]Advisor

ABSTRACT

Voluntary work can have many benefits to individuals such as decreased depression and mortality and increase in overall health. Volunteering also leads to many community benefits like sustainability and community unity. In this study, I set out to analyze who exactly volunteers by taking data from the US Bureau of Labor Statistics on volunteering over 5 years and reviewing many common trends. Volunteering is, surprisingly, an act that a very small number of Americans take part in. Through this study, I was able to conclude which demographics those volunteers are from. I used the factors: Education, Age, Sex, Race, and Employment level. These factors all play a role in which sector of Americans, demographically, contribute to their community through volunteering. Through the five years that the US Bureau was able to collect data, the numbers had a low standard deviation, leading to the conclusion that even though the last date that the data was collected was in 2015, the numbers in terms of demographic percentages, would not have changed. This information could be used by non-profit organizations to target specific demographics when sharing volunteer opportunities, so they can maximize the possibility of finding volunteers.

Introduction

Volunteering is formally defined as freely giving time and labor for community service. Through analyzing which demographics tend to volunteer more, we can determine which factors influence the volunteering rate positively or negatively. Using those factors, we can target specific potential volunteers and understand why people volunteer. Factors such as age, employment status, race, and sex are all major contributors to the volunteer force and its limitations. This study answers questions such as: Do more educated people tend to volunteer more? Does Race play a large role in civic engagement? Etc. These are questions that are important to consider in raising the numbers of the volunteer force all over the world. Many of these generic factors have larger correlations to other specific factors such as: religion, marital status, inequity in education, etc.

Description of the Analysis

Introduction and Goals

In my experiment, I looked at many different demographic factors (race, sex, age, employment, education) and compared them to their volunteering rate as a demographic. This allows for understanding of which factors are correlated, and what exactly this means for our community in its entirety. The goal of this experiment was to determine which demographics have an impact on volunteering in America.

Methods

Hypotheses

Before conducting my analysis, I made predictions about the data using my previous knowledge. I predicted that women would volunteer more than men, since simply from personal experience I have seen more women in my volunteer work than men. I also predicted that those who were unemployed would volunteer the most because they may have greater amounts of time to volunteer rather than those that are employed full-time. Finally, I predicted that teenagers would volunteer the most because of their required service hours in high school. I did not draw predictions on race because I believed that race did not play a role.

Tools

In this experiment, I used the python packages: seaborn, matplotlib, numpy, and pandas and performed data analysis on a data set from the U.S. Bureau of Labor Statistics. I was able to use bar graphs, tables, and pie graphs to get the density of volunteering within the demographics listed above.

Background on Data Set

The Bureau of Labor Statistics (BLS) with the U.S. Department of Labor used data on volunteering that was collected in the supplement to the 2015 September Current Population Survey. The BLS defines volunteers as "persons who did unpaid work (except for expenses) through or for an organization". The CPS collected monthly data through a survey of about 60,000 households. This survey obtained data on the U.S. civilian population of ages 16 and over on their volunteering activities for an organization (even if they were only performed occasionally). There were special efforts made to have each household member answer the questions on the survey themselves because usually, one member of the household answered the questions on behalf of the entire household. The BLS deemed the responses of each individual as important because research indicated that respondents, when answering the survey themselves, could answer more easily. In the end, about 2⁄3 of the responses were individual responses.

## Reliability of Data Set

The statistics in this data set are samples of the United States population. There is a chance that there may be a sampling error and these estimates differ from the true population values. According to the news release by the BLS in 2015, "There is about a 90-percent chance, or level of confidence that an estimate based on a sample will differ by no more than 1.6 standard errors from the true population value because of sampling error". The Current Population Survey data is affected by non-sampling error. This can result from failing to survey a certain percentage of the population, not being able to obtain data from all respondents, not having 100% accurate information, or errors made in processing the data.
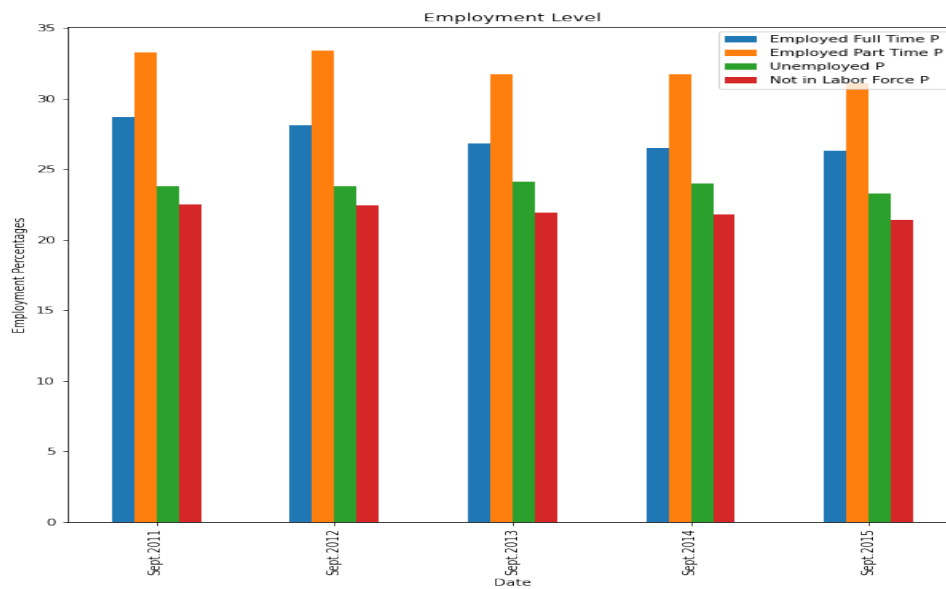
Results

Quantitative Results

Sex
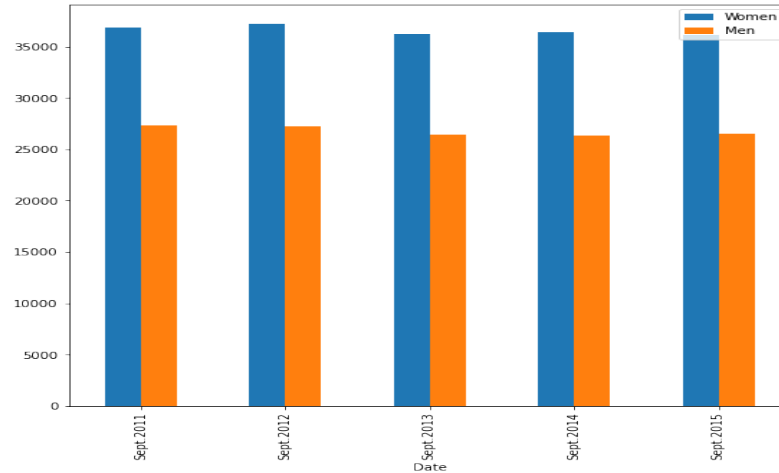
Figure 1.

   Throughout the years 2011-2015, the percentage breakup of Women:Men volunteering remained largely the same. Women volunteered more than men by almost 30%.

Employment Status

Figure 2.

The above graph shows percentages of the total volunteers who were either employed full time, employed part time, unemployed, or not in the labor force. As shown, those who were employed part time volunteered the most, and those that were not in the labor force volunteered the least. Those that are not considered a part of the labor force are: unemployed and not seeking work, students, retired persons, those taking care of family or children (ex: stay at home moms), those under 16 years, those on active duty in the Armed Forces, and those confined to nursing homes or prisons.

Educational Attainment
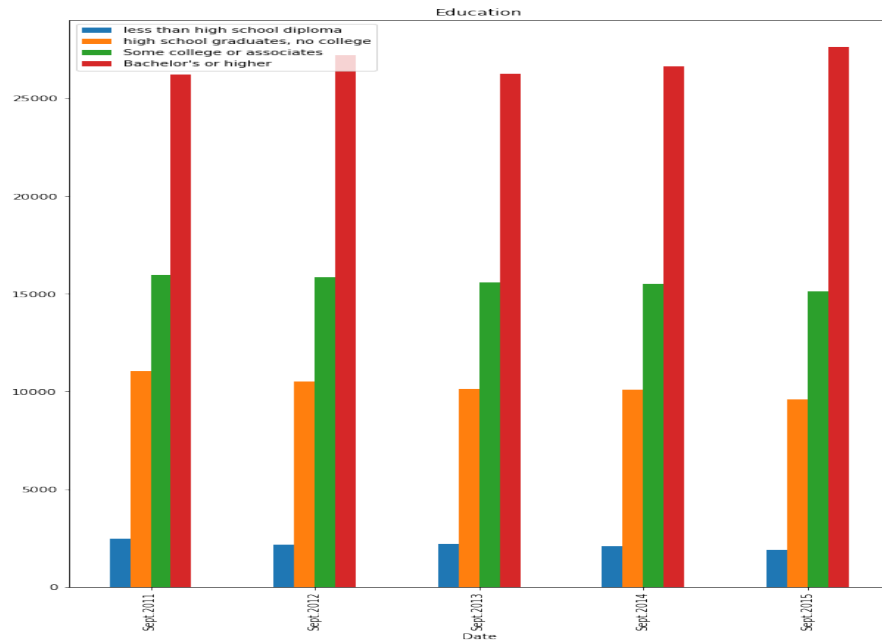
Figure 3.

      The graph above showcases the number of volunteers in comparison to their educational attainment. Those with a Bachelor's degree or higher tended to volunteer more and those with less than a high school diploma tended to volunteer the least. This bar plot creates a somewhat exponential curve. It shows that those with higher educational attainment tend to volunteer the most.

Race
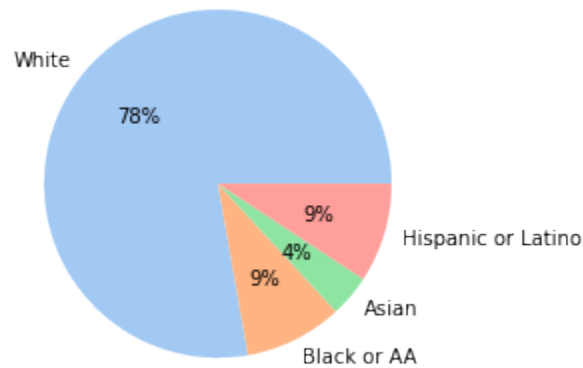
Figure 4.

This chart shows the race breakup of volunteers in the most recent year in the dataset (2015). As shown by this, the most volunteers were white. White people make up 80% of the Volunteer force, thus proving a probable correlation to another demographic factor. This factor could be religion. According to the Washington Post, very few Jews are non-White, and most Christians are either Black or White. Judaism and Christianity are religions that have volunteering as one of their core values. This is possibly why White people make up such an overpowering majority of the volunteer force.
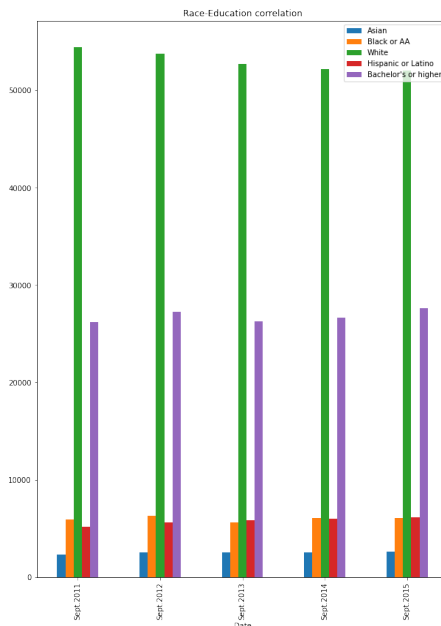
Age
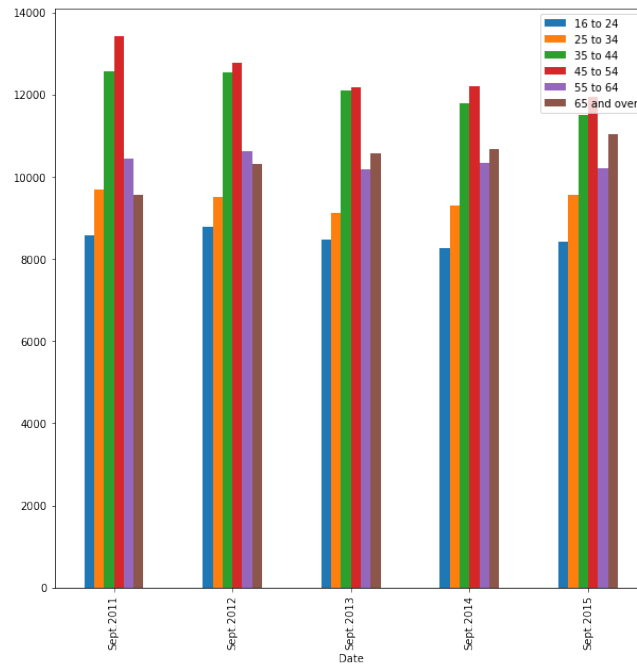
Figure 5.

The age distribution makes somewhat of a parabola shape. Most volunteers are middle aged and consistently between the ages of 35-54. The least number of volunteers are between the ages of 16 and 24. This makes sense because most of those years are during undergraduate and Junior/Senior year of high school.
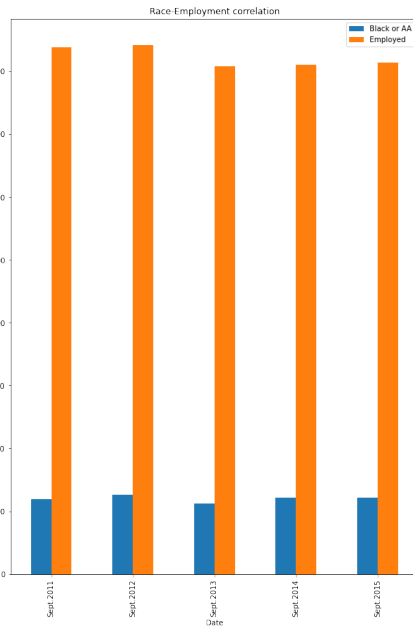
Correlations

Figure 6.

As shown from the above as well as Figure 4, it is likely that most volunteers are White with a Bachelor's Degree. The other four races had fewer volunteers in comparison to the White population. White population is

much larger than the other races, so it can be assumed that most volunteers with Bachelor's degrees were White.

Figure 7.

       Figure 7 shows the correlation between one race (Black), and employment. As seen, Black people make up a small percentage of the employed volunteers. Also, employed volunteers are more likely to volunteer, as shown by Figure 2.
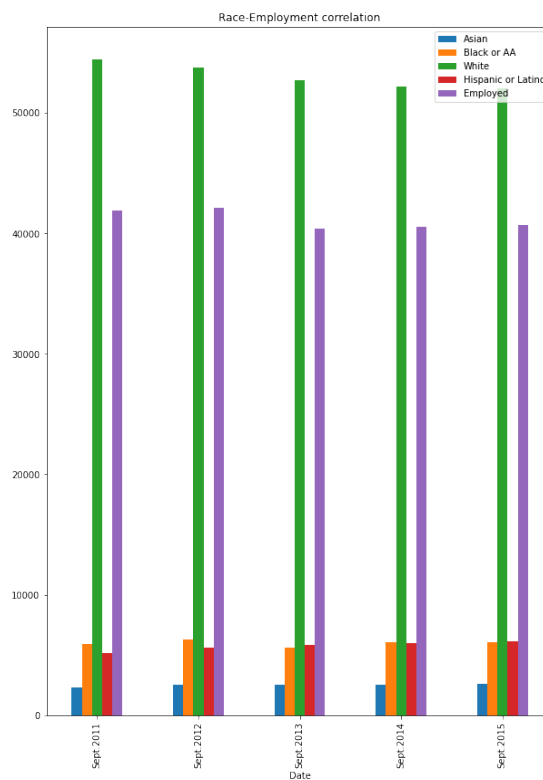
Figure 8.

As shown in Figure 8, the most employed people are White. Along with the statistic that those who are employed are more inclined to volunteering, it can be shown that White people are also more able to be employed, indicating that education access is not equitable.

Qualitative Results

The main volunteer activity was collecting, preparing, distributing, and serving food, but other activities were reported such as tutoring, fundraising, engaging in general labor, reffing games, etc. Women were more likely to volunteer in collecting, preparing, distributing, and serving food, fundraising, and tutoring, while men were more likely to volunteer in general labor and coaching sports teams. People with a bachelor's degree or higher were more likely to tutor or teach than volunteers with less education and less likely to serve/prepare food than those with less than a bachelor's degree. In addition, parents were more likely to ref, supervise, tutor, and mentor and engage in activities to do with children.

Limitations

While this data set is almost 8 years old, the statistical demographical breakup of volunteers observed experienced little change throughout September 2011-September 2015, so we can assume that this trend will not drastically change post 2015.
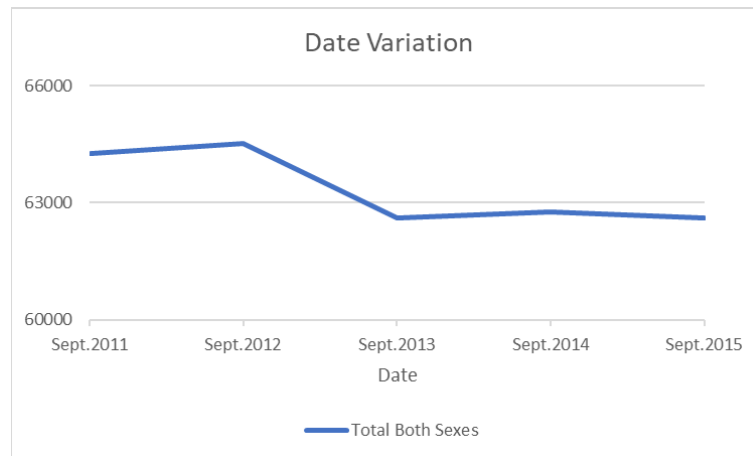

Figure 9. The Total Variation in number of volunteers from September 2011-2015

Conclusion

Voluntary work is, contrary to popular belief, correlated heavily with ones background. Voluntary work is not widespread, and through the factors of Education, Age, Sex, Race, and Employment Level, the different demographics of volunteering can be analyzed. Women volunteered more than men, by almost 30%. Employed community members volunteered much more than those who were not. Individuals with the highest level of education volunteered the most. White people volunteered the most. Middle-aged people volunteered the most. Per this analysis, volunteering is an act that only those in privilege are accustomed to. The race statistic itself supports this in that White people tend to volunteer significantly more, and through many other figures in section 3, it can be proven that those who were White also tended to have a higher level of education and

employment that other races often lacked. Those that were employed tended to volunteer more, and most employed citizens are between the ages of 35-44, therefore also marking a connection between age and race. Privilege of any form, whether it be education, race, or employment directly correlates to a higher level of civic engagement. Women volunteering more than men could be related to a variety of factors such as: the effects of childbirth, raising a family, characteristic qualities, inclination to perform tasks without pay, etc. While non-profits may use this information to target campaigns to get more volunteers, the factors analyzed in this study (age, employment, race, sex) also point to a social disparity within civic engagement.

Code

The Jupyter notebook created to analyze the data can be found here: https://github.com/anika1324/VolunteerDemographics

Acknowledgments

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