

# Qualities of Volunteering and Life Satisfaction: A multiple linear regression model\*

Insights from the 2018 Canadian General Social Survey

Kimlin Chin

25 April 2022

## Abstract

Volunteering has been linked to many benefits including health, happiness and life satisfaction; however, there is limited research on the precise aspects of volunteering associated with these benefits. In this paper, we investigate how different aspects of volunteering including frequency, reasons and quality of experience in volunteering are correlated with life satisfaction using a multiple linear regression model. We find that among people who volunteer, people who use their skills in their volunteering experience and volunteer at least once a week had higher life satisfaction. Our findings have implications for the general public in making the most out of their volunteer experience.

**Keywords:** volunteering, life satisfaction, multiple linear regression, canadian general social survey, canada

## 1 Introduction

Volunteering has been linked to many benefits including health, happiness and life satisfaction (cite literature).

But what specific aspects of volunteering may be related to life satisfaction? In this paper we take a look at the data from the 2018 Canadian General Social Survey on Giving, Volunteering & Participating to investigate this question. Specifically we construct a multiple linear regression model with life satisfaction as our dependent variable, and independent variables for frequency, reasons for volunteering and quality of volunteer experience. We find that among people who volunteer, people who use their skills in their volunteering experience and volunteer at least once a week had higher life satisfaction.

The rest of the paper has the following structure: Section 2 describes the data from the 2018 Canadian General Social Survey on Giving, Volunteering & Participating, Section 3 discusses the multiple linear regression model, Section 4 presents the results of our analysis and Section 5 discusses the findings and limitations.

## 2 Data

### 2.1 Data Source

The data is from the 2018 Canadian General Social Survey (GSS) on Giving, Volunteering & Participating. Canada's GSS program conducts independent cross-sectional surveys each year on a specific topic. The

---

\*Code and data are available at: <https://github.com/KCtt457/gssvolunteering2018>.

main objectives of the program are to gather data on social trends in order to monitor changes in the living conditions and well-being of Canadians and to provide information on specific social policy issues [cite]. The topic for 2018 was Giving, Volunteering & Participating, which was the seventh time data on this topic has been collected at the national level.

## 2.2 Data Collection and Methodology

Data was collected by Statistics Canada during the period of September 4th to December 28th, 2018. The target population included individuals 15 years and over in Canada, excluding institutionalized persons and residents of the Yukon, Northwest Territories, and Nunavut. For sampling, the ten provinces were divided into strata by geographical area. The survey frame was developed by combining lists of telephone numbers from various sources and lists of dwellings from the Address Register. Each record in the survey frame was assigned a stratum within its province. Households were then randomly sampled within each stratum and a single respondent from each household was chosen using an age-order method to either complete an electronic questionnaire or telephone interview.

Due the low prevalence of volunteers in the population, rejective sampling was also used to obtain a larger number of respondents in the population of interest which is volunteers. There were 16,149 respondents in the survey, excluding 'rejected' respondents.

## 2.3 Key Features

There are 956 variables and 16,149 observations in the dataset.

The variables include basic demographic information, such as age, gender, marital status, province, as well as depict the topics of volunteer specifics and details, reasons for volunteering or not volunteering, quality and history of volunteering, financial giving and youth experiences.

A subset of the variables is shown in table 1.

Since we are interested in the relationship between volunteering and life satisfaction, we do some data exploration of these features. Figure 1 shows the number of volunteers and non-volunteers in the sample.

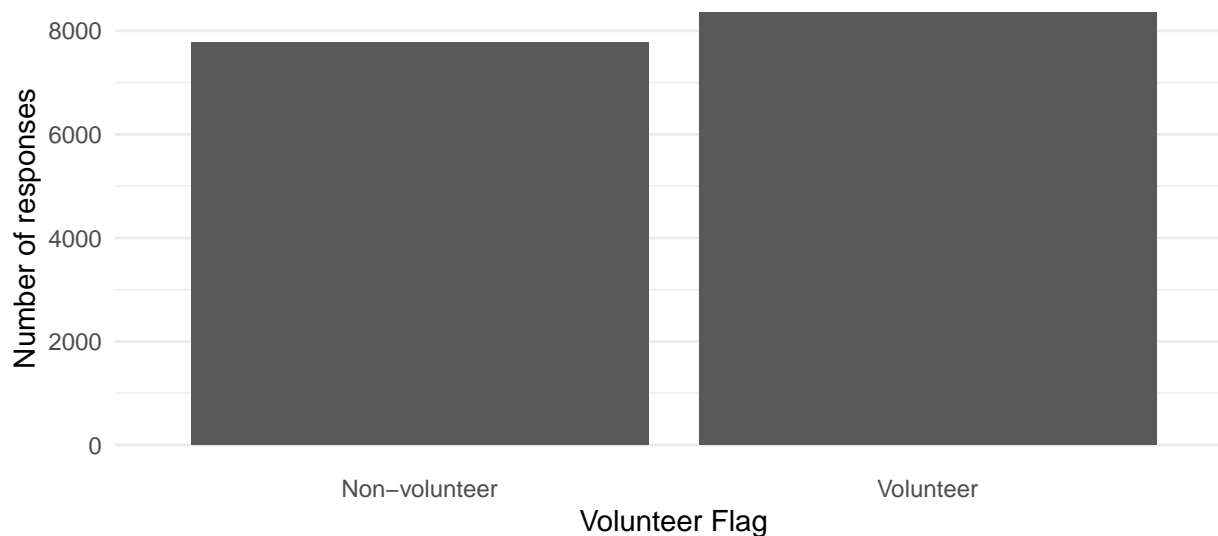


Figure 1: Number of Volunteers and Non-Volunteers in the Sample

Table 1: Some key features

Age group of respondent	Gender	Volunteer Flag	Number of Organizations	Volunteer Frequency	Reasons for Volunteering-To use skills	Quality of Volunteer Experience-Community Contribution
65 years and over	Male	Non-volunteer				
65 years and over	Male	Volunteer	1	At least once a week	Yes	Agree
65 years and over	Female	Volunteer	1	At least once a week	Yes	Agree
65 years and over	Male	Non-volunteer				
65 years and over	Male	Volunteer	2	At least once a week	Yes	Strongly agree
65 years and over	Male	Non-volunteer				
65 years and over	Female	Non-volunteer				
65 years and over	Male	Volunteer	3	At least three or four times in the past 12 months	Yes	Agree
65 years and over	Male	Volunteer	5	Daily or almost daily	Yes	Strongly agree
65 years and over	Female	Non-volunteer				

There is about a 50-50 split between the volunteers and non-volunteers in our sample. However, this should be looked at with caution when making generalizations to the wider population given that the data was obtained via rejective sampling.

Figure 2 shows life satisfaction by volunteer status. Life satisfaction was rated on a scale from 0 to 10, where 0 means very dissatisfied with life, and 10 means very satisfied with life. Overall, the majority of respondents had relatively high satisfaction ratings about 7-10. It can clearly be seen from the graph that in the lower life satisfaction ratings 0-6, the percentage of non-volunteers was greater than volunteers. Interestingly at a rating of 7 it appears to be about an even split, and for higher life satisfaction ratings the percentage of volunteers is greater than the percentage of non-volunteers.

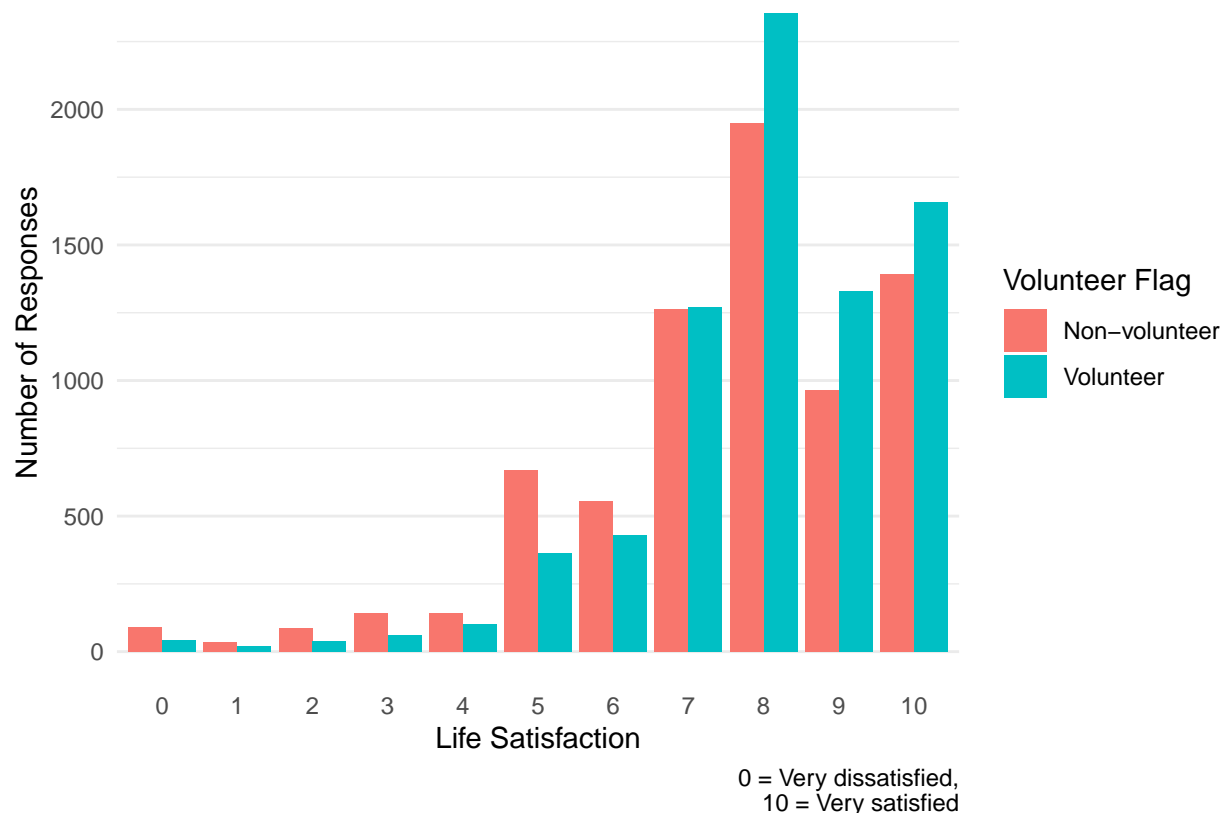


Figure 2: Life satisfaction by Volunteer Status

Therefore this brief glimpse of data hints at a relationship between being a volunteer and life satisfaction. We would also like to explore more of the characteristics of volunteering such as perhaps number of organizations and frequency that may be involved in this relationship.

R (R Core Team 2020) and the R packages `tidyverse` (Wickham et al. 2019) and `kableExtra` (Zhu 2021) were used for data processing and to make the plots and tables.

## 2.4 Strengths and Weaknesses

Some strengths of the data include that it is a large sample, it explores multiple different variables on the topic of interest which is giving, volunteering and participating in detail and also although volunteers were the subject of interest, data on non-volunteers were also included such as their reasons for not volunteering or other similar activities (such as helping at home) that they may undertake instead.

## 3 Model

### 3.1 Model 1: Life Satisfaction and Volunteer Flag

For our first model, we are interested in how volunteer status is correlated with life satisfaction. We construct a multiple linear regression model with life satisfaction as the independent variable, and for the dependent variables we use volunteer flag and also various socio-demographic variables including gender, age, education level, marital status, if there are children at home, employment status and family income as these have been found to be relevant in previous research [cite]. The model is show in (1) follows:

$$life\_satisfaction = volunteer + gender + age + education + married + children\_at\_home + employment\_status + income\_lev \quad (1)$$

### 3.2 Model 2: Life Satisfaction and Volunteer Characteristics

For our second model, we are interested in which specific characteristics of volunteering might be correlated with life satisfaction. For this model, we restrict the datapoints to volunteers only (since non-volunteers do not have volunteer characteristics). Our independent variable is life satisfaction again, and the dependent variables include number of volunteer organizations, volunteer frequency and if the volunteer experience fulfills their reasons for volunteering. We created a new variable for whether or not the volunteer experience fulfills their reasons for volunteering by taking the variables for the stated reasons for volunteering and matching it to the variables for the quality of their experience. So for example if an individual stated that a reason for volunteering was to network and they agreed that they were able to network from their volunteer experience, then this variable would be set to ‘YES’, otherwise ‘NO’. Since there are multiple reasons for volunteering, we will set the variable to ‘YES’ whenever at least one of the reasons are satisfied. The model is shown in (2) follows:

$$life\_satisfaction = num\_organizations + frequency + fulfilling + quality \quad (2)$$

## 4 Results

## 5 Discussion

### 5.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

### 5.2 Second discussion point

### 5.3 Third discussion point

### 5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

## Appendix

### A Additional details

## References

- R Core Team. 2020. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Zhu, Hao. 2021. *kableExtra: Construct Complex Table with Kable and Pipe Syntax*.