
TECHNICAL NOTE

Volunteer Scotland would like to thank the Scottish Government for undertaking an editorial overview of this work and providing valuable feedback.

1 PURPOSE

This Technical Note has been prepared by Volunteer Scotland (VS) to explain the data sources, methodology and terminology underpinning its detailed time-series analysis of volunteering data taken from the Scottish Household Survey (SHS). The purpose of this review is to reflect on both the current state of volunteering in Scotland, particularly around levels of volunteer participation, and to provide a time series analysis on how volunteering has changed across the last decade.

VS will use these findings to help focus and guide future analysis and research in this area. These findings, combined with future analysis, will also help to:

- Inform government policy – for both volunteering and associated policy areas where volunteering has an important role to play
- Improve the contribution of volunteering through an enhanced understanding of participation, inclusion, demographic profiles, etc.
- Help track performance in terms of meeting volunteering outcomes – at the national level for the Scottish Government’s Volunteering Outcomes Framework, and for partners and volunteer involving organisations at the sectoral and / or organisational level.

2 DATA SOURCES

The review has focused on findings taken from the following sources:-

- The Scottish Household Survey (SHS), 2007-2017. This is a National Statistics release which is produced by the Scottish Government on an annual basis. More detailed information about the survey, including the survey methodology, can be found here.
- The Mid Year Population Estimates, 2007-2017. This is a National Records of Scotland publication which is released on an annual basis. Further information on the release, including methodology can be found here.
- The Annual Survey of Hours and Earnings, 2007-2017. This is an annual National Statistics publication, detailed information on the survey can be found here.
3 PRIMARY ANALYSIS

- **Age** – the SHS interviews adults aged 16+ (for information on youth volunteering for those under 16 see *Young People and Volunteering in Scotland 2016*).

- **Formal Volunteering** – up until 2018 the SHS has had an exclusive focus on ‘formal volunteering’ defined as “...giving up time to help any groups, clubs or organisations in an unpaid capacity.”

- **Informal Volunteering** – from 2018 the SHS now includes questions on 'informal volunteering', defined as “.....individuals giving help outside groups, clubs or organisations.”

- **Time Series** – SHS data goes back to 1999 but due to a significant change in the wording of the volunteer question in 2007, only data from 2007 – 2017 is analysed in this presentation.

- **Local Authority Data** – The SHS provides Local Authority tables containing details on volunteering in the 32 local Scottish authorities. The volunteering rates from 2007 and 2017, along with the averages over this period are included in Appendix 1 of this presentation. As the sample size for each local authority can be small, under 100 in some cases there can be large fluctuations in rates year on year, Volunteer Scotland recommends using the average and not individual years. For example, the table below shows the fluctuations in the participation rate for West Dunbartonshire for the five-year period 2013-2018 along with the sample sizes during this period.

<table>
<thead>
<tr>
<th>West Dunbartonshire</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation rates</td>
<td>23%</td>
<td>15%</td>
<td>18%</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>Annual change in participation rates</td>
<td>-50%</td>
<td>15%</td>
<td>-31%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>110</td>
<td>130</td>
<td>110</td>
<td>120</td>
<td>110</td>
</tr>
<tr>
<td>Annual change in sample size</td>
<td>15%</td>
<td>-18%</td>
<td>8%</td>
<td>-9%</td>
<td></td>
</tr>
</tbody>
</table>

4 SECONDARY ANALYSIS

Additional analysis

VS has carried out secondary analysis of the SHS data to explore in more detail:

- The frequency and intensity with which volunteering takes place;
- The characteristics of the “Civic Core” in Scotland – the small proportion of volunteers who are responsible for the majority of volunteering hours;
- The economic value of volunteering;
• Time series analysis of the SHS from 2007 – 2017 to understand how volunteering has changed over time and whether the groups that are most likely to volunteer has changed.

Civic Core

To determine if a Civic Core was evident within Scottish volunteering, data was taken from the SHS in response to the question “thinking about all the unpaid help you provide, how many hours in total would you estimate you spent on these activities in the past month”

vs. The reader is asked to bear this in mind.

Economic value

To calculate the economic value of volunteering, VS calculated the total hours volunteered on an annual basis, converted this into the equivalent number of full time employee weeks, multiplied the number of weeks by the average Scottish weekly wage (excluding overtime) and added 20% to allow for other costs associated with full time employees.

Calculating the economic value of volunteering – guidance

Changes to methodology used in calculating the number of volunteering hours

Volunteer Scotland has reviewed its methodology for calculating the number of hours volunteered and has made a change to make the methodology more robust.

Previously Volunteer Scotland’s methodology was based on using the midpoint in the Scottish Government’s hourly ranges as shown in Table 1. Selecting a midpoint was straightforward for each hourly range except for the category ‘36 hours or more’. There is no midpoint for this category as there is no upper band. To address this problem Volunteer Scotland had been assuming a figure of 40 hours.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1 - Volunteer Scotland's Midpoint Assumptions</td>
<td></td>
</tr>
<tr>
<td>Hours volunteered in last 4 weeks</td>
<td>Midpoint</td>
</tr>
<tr>
<td>Less than an hour</td>
<td>0.5</td>
</tr>
<tr>
<td>1-5 hours</td>
<td>3</td>
</tr>
<tr>
<td>6-10 hours</td>
<td>8</td>
</tr>
<tr>
<td>11-15 hours</td>
<td>13</td>
</tr>
</tbody>
</table>

¹ VS recognises that the relatively short reference period used in this question (past month) makes the data vulnerable to one-off behaviours that are otherwise uncharacteristic of the individual. The reader is asked to bear this in mind.
For this time-series analysis of SHS hourly data Volunteer Scotland has adopted a more robust approach by calculating the mean figure of volunteering hours for each hourly range – see Table 2. This analysis shows that the midpoint is a good approximation for all hourly ranges except ‘36 hours or more’. In 2016, the mean for ‘36 hours or more’ was 61.6, over 21 hours higher than the assumed figure of 40.

<table>
<thead>
<tr>
<th>Hours volunteered in last 4 weeks</th>
<th>Midpoints</th>
<th>Mean 2012</th>
<th>Mean 2014</th>
<th>Mean 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 hour</td>
<td>Mean figures are not available for &lt; 1 hour from the SHS²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 hours</td>
<td>3</td>
<td>3.0</td>
<td>3.1</td>
<td>3.2</td>
</tr>
<tr>
<td>6-10 hours</td>
<td>8</td>
<td>8.2</td>
<td>8.2</td>
<td>8.0</td>
</tr>
<tr>
<td>11-15 hours</td>
<td>13</td>
<td>12.7</td>
<td>12.7</td>
<td>12.9</td>
</tr>
<tr>
<td>16-20 hours</td>
<td>18</td>
<td>18.4</td>
<td>19.1</td>
<td>18.7</td>
</tr>
<tr>
<td>21-35 hours</td>
<td>28</td>
<td>27.7</td>
<td>27.8</td>
<td>27.7</td>
</tr>
<tr>
<td>36 hours or more</td>
<td>40</td>
<td>57.5</td>
<td>61.3</td>
<td>61.6</td>
</tr>
</tbody>
</table>

Therefore, Volunteer Scotland has used mean hours rather than midpoints for the analysis of volunteering hours. Incorporating this change has had a significant impact on our analysis of the 2016 data:

- Total annual volunteering hours increases from 137 million to 157 million hours.
- Economic value increases from £1.96 billion to £2.26 billion.

This new methodology will be used by Volunteering Scotland going forward, to ensure that the hours, and therefore economic value, more accurately reflect the actual hours’ data collected as part of the SHS.

Significance tests

Time series analysis was completed by comparing data from 2007 to 2017. Z tests were used as the statistical method to confirm if differences were statistically significant. Z tests require a minimum sample of 30, which is consistent with the sample sizes in the SHS. Only one question in the SHS had a sample size of less than 30 for two of the response categories, (Ethnicity - Don’t know and Ethnicity - refused), both categories were excluded from the VS analysis. The sample size used to calculate each Z Score, along with the calculations are included in the tables which are available here (opens as an excel download)

² Two anomalies have been identified in the Scottish Government’s analysis: the ‘0 hour’ responses have been coded in the 1 – 5 hour category; and the ‘less than one hour’ responses have been included in the ‘don’t know’ figures. Volunteer Scotland has corrected for both these errors, which have been brought to the attention of the SHS team in the Scottish Government.
\[ z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\hat{p}_p(1 - \hat{p}_p)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \]

Where:
- \( \hat{p}_1 \) is the proportion of interest in year 1 (e.g. percentage of volunteers in 2010).
- \( \hat{p}_2 \) is the proportion of interest in year 2 (e.g. percentage of volunteers in 2017).
- \( n_1 \) is the number in the population of interest in year 1 (e.g. the number of people asked if they volunteered in 2010).
- \( n_2 \) is the number in the population of interest in year 2 (e.g. the number of people asked if they volunteered in 2017).
- \( \hat{p}_p \) is calculated by:
  \[ \hat{p}_p = \frac{x_1 + x_2}{n_1 + n_2} = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2} \]

The Z scores are transformed into a p value, which is compared to the critical p value of 0.05. If the calculated p value is <0.05, the result is statistically significant at the 95% level.

5 TABLES AND CHARTS

The tables produced as part of this review are available to download here (opens as an excel download). Please note that the figures provided in the tables and charts have been independently rounded, so they may not always sum to the relevant sub-totals or totals. Some tables and charts may also include multiple responses or exclude 'don’t know' or ‘other’ categorises.

6 DEFINITIONS AND CLASSIFICATIONS

Volunteering status:

- **Current volunteer**: a person who has volunteered at least once in the past 12 months.

- **Past volunteer**: a person who has volunteered at least once in their lifetime, but who has not volunteered in the past 12 months.

- **Non-volunteers**: people who have never volunteered.

Frequency of volunteering:

- **Regular volunteers**: people who have volunteered in the past 12 months and have done so either several times a week; about once a week; or less than once a week but at least once a month.

- **Occasional volunteers** people who have volunteered in the past 12 months and have done so either less than once a month, but at least five or six times a year; a few times a year; or less often.
• **Weekly:** those people who have volunteered in the past 12 months and have done so either several times a week or about once a week

• **Monthly:** those people who have volunteered in the past 12 months and have done so less than once a week but at least once a month.

**Intensity of volunteering:**

• **High Intensity:** those people who have volunteered in the past 12 months and have undertaken 16 or more hours volunteering each month.

• **Medium Intensity:** those people who have volunteered in the past 12 months and have undertaken 6-15 hours of volunteering each month.

• **Low Intensity:** those people who have volunteered in the past 12 months and have undertaken 5 or less hours of volunteering each month.

7 CONTACT

Our aim is to provide relevant and reliable information, analysis and advice. If you have any questions or comments regarding the content of this review, then please contact Debbie Maltman (deborah.maltman@volunteerscotland.org.uk) or Gemma Jackson (gemma.jackson@volunteerscotland.org.uk).