

The Effect of Volunteering on Health & Wellbeing



Business Consulting Group Report



Client: Volunteer Scotland

Authors and acknowledgements

This report was produced as part of a University of Stirling, Business Consulting Group project by:

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Executive Summary

This report details the results of an investigation into the relationship between volunteering, health and wellbeing on behalf of Volunteer Scotland.

It builds on research by Linning and Jackson (2018) with an analysis of the SHS (Scottish Household Survey) data to provide insights into identified health and wellbeing outcomes, namely: general health, mental health, social capital and economic and employment outlook.

The analysis confirmed significant relationships between volunteering and each of the health and wellbeing outcomes with some key findings: the volunteer group, on average, has a higher health score than the non-volunteer group across all outcomes; mental health of volunteers improves with age compared to the non-volunteer group; and mental health of volunteers has declined since 2014.

We recommend that Volunteer Scotland undertake further research into how volunteering might affect physical health and mortality, and factors which might impact upon – and therefore how Volunteer Scotland and the Scottish Government might help facilitate – participation in volunteering from households in deprived areas (SIMD lowest quintile), thereby increasing the likelihood of those households benefiting from the health and wellbeing outcomes discussed in this report.

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1. Introduction

1.1 Purpose

This report presents the findings of our investigation into the link between volunteering, health and wellbeing and how this has changed over time.

1.2 Background

In 2018, Volunteer Scotland conducted a review of the literature pertaining to the relationship between volunteering, health and wellbeing. In it, they develop an analytical framework comprising five broad outcomes for health and wellbeing, common in the literature, and upon which this report is based:

- i. Physical Health (General Health)
- ii. Mental Health
- iii. Mortality (discarded)
- iv. Social Isolation / Loneliness (related to Social Capital)
- v. Employment and Career Outcomes

1.3 Scope and Objectives

The SHS (Scottish Household Survey) data provides a broad data source on households in Scotland. It will be used to investigate the effect of volunteering on each of the health and wellbeing outcomes in 1.2, above, by comparing the 2 groups: Volunteers and Non-Volunteers.

The literature has been unable to provide a definitive conclusion on causation as health and wellbeing is a complex problem with many influencing factors. As such this report will not attempt to infer causation, only to confirm if a significant relationship exists.

It is difficult to establish a relationship between volunteering and each of 'Mortality', and, Physical Health as the SHS does not provide this data. Therefore, Mortality has been removed from the study, and Physical Health has been replaced with 'General Health'.

The objectives of this project are:

1. To establish if a relationship exists between volunteering and health and wellbeing, in relation to the outcomes described above
2. To establish, where possible, how health and volunteering has changed over time
3. To establish, where possible, which age group benefits from volunteering

1.4 The Dataset

The dataset is generated by the Scottish Household Survey, an annual survey of adults aged 16+ conducted in households across Scotland. The dataset, stored as csv files, comprise approximately 2,400 variables and 30,000 observations (Appendix A).

The SHS surveys individuals living in Scotland and is weighted to ensure that the dataset is representative of the demographic profile of Scotland. Figure 1 shows that by weighting the responses the age distribution in the SHS mirrors the age distribution of the Scottish population for mid-2017 (NRS 2017b).

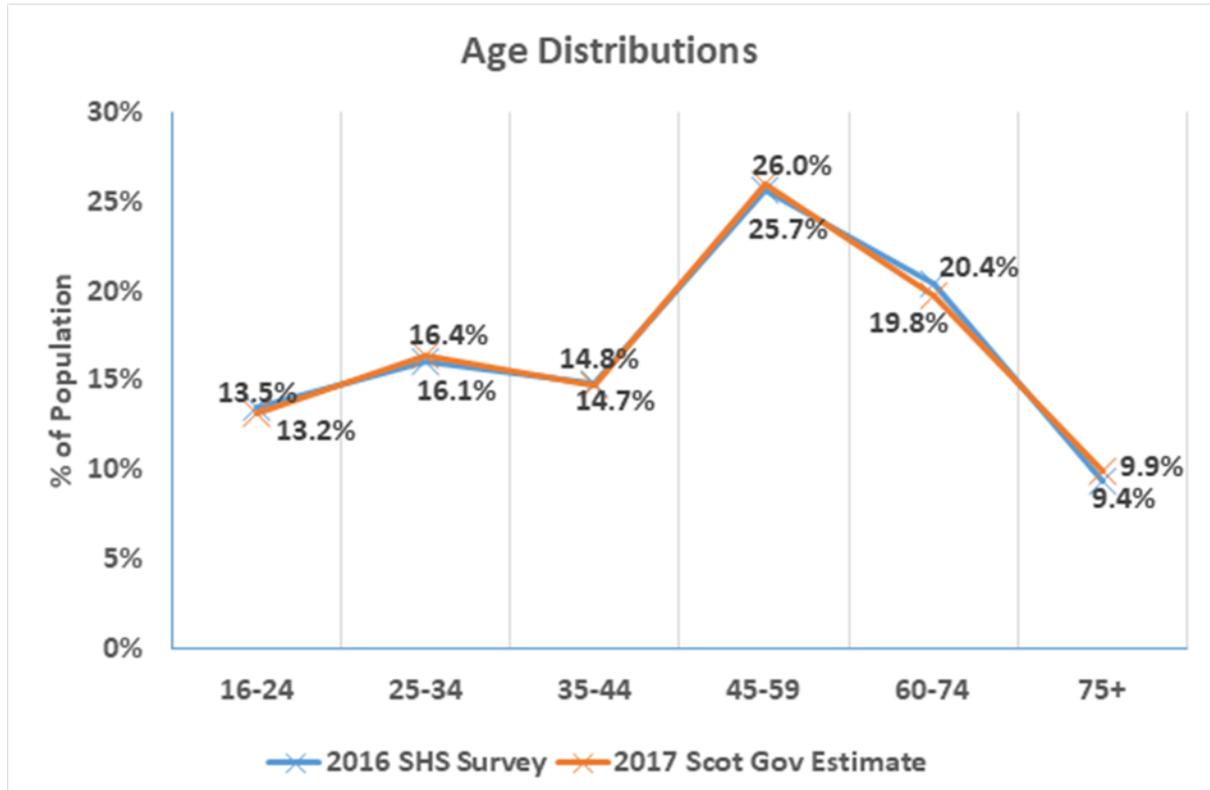


Figure 1: Age Distribution of Data Sample

1.5 Methodology

This project extracts insightful data from the SHS using data analysis and statistical techniques. The data is open source and was collected from the Scottish Government website. Some variables are recoded to reduce the number of response categories into positive, neutral and negative responses; the recoded variables are detailed in the relevant sections of the report.

In Phase 1 we searched the data to find appropriate survey questions that may be associated with the health and wellbeing outcomes. Once the variables (questions) were identified we assessed the responses and planned the analysis, its presentation and transformed these into business insights. In Phase 2 we looked for trends and correlations and tested these statistically using hypothesis tests, which were carried out using MS Excel, Tableau and SPSS. Phase 3 was the compilation of the analysis and presentation of the results for the Client.

2. Defining Volunteering and Health & Wellbeing

2.1 Defining Volunteering

In this analysis, the definition of volunteering is limited to formal volunteering which is defined as:

“the giving of time and energy through a third party, which can bring measurable benefits to the volunteer, individual beneficiaries, groups and organisations, communities, the environment and society at large. It is a choice undertaken of one’s own free will and is not motivated primarily for financial gain or for a wage or salary,” (Scot Gov 2004)

To assess whether one is a volunteer, we used the derived variable *voluntee* (Appendix A). In 2016, 27.3% of the respondents self-identified as having formally volunteered at least once in the last year.

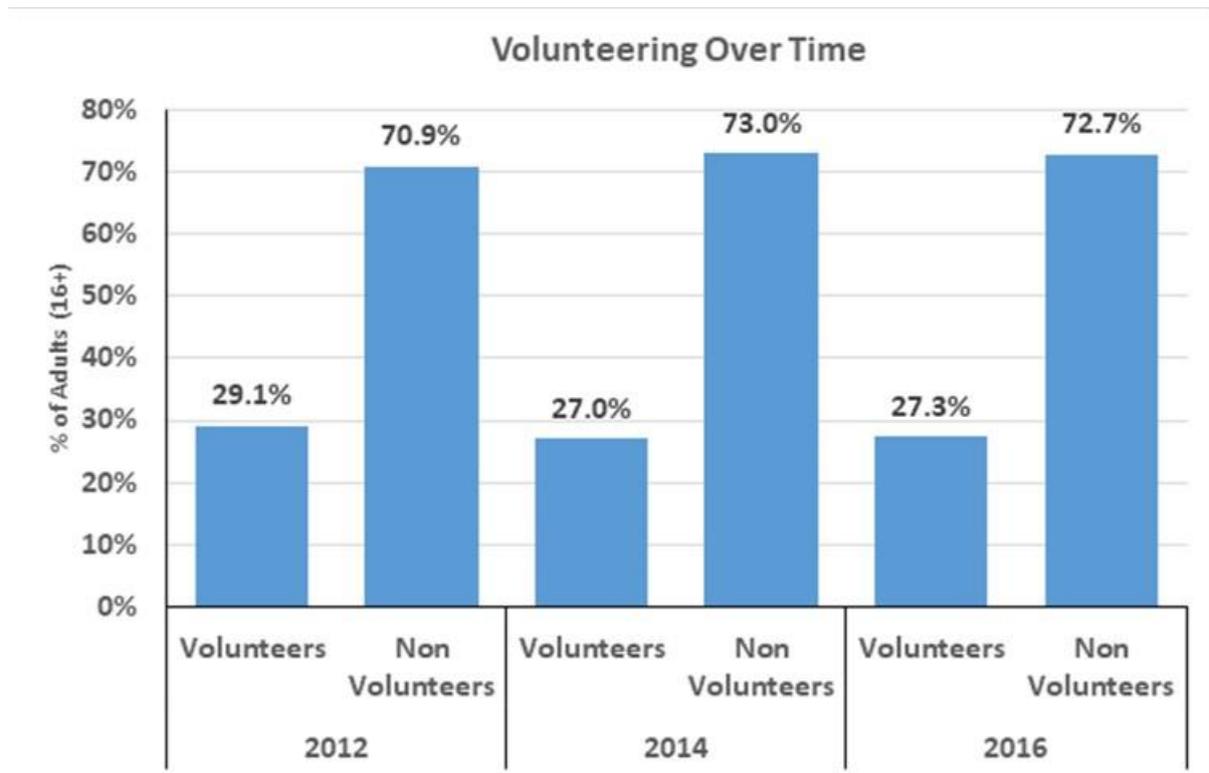


Figure 2: Volunteering Rate over Time

2.2 Defining Health & Wellbeing

Health broadly encompasses physical health, mental health and mortality. It is defined by the World Health Organisation (WHO) as a state of complete physical, mental and social wellbeing and not merely being the absence of disease and infirmity (WHO 1946). This universal definition is also used by the Scottish Government.

2.3 Age and Health

There are other factors which have an influence on health, for example, age. Figure 3 below provides an overview of the relationship between general health and the six distinct age bands showing that younger people have more positive opinions about their general health and older people tend to have more negative self-ratings. This is expected as naturally, after a certain age, the older one gets the more one's health is likely to deteriorate.

To simplify the analysis the responses were recoded into three distinct categories. The positive responses 'very good' and 'good' were combined and recoded to 'positive', the response 'fair' was recoded to 'neutral' and negative responses of 'very bad' and 'bad' were recoded to 'negative'.

A chi-square test confirmed the existence of a significant relationship between age and general health with a small effect (Appendix B).

The most important factor impacting on health other than age is deprivation (Scottish health Survey citation**). Volunteer Scotland use the SIMD lowest Quintile as an indicator of deprivation. However, this was out with the scope of this project due to time and resource constraints. This should be a key variable for future analysis.

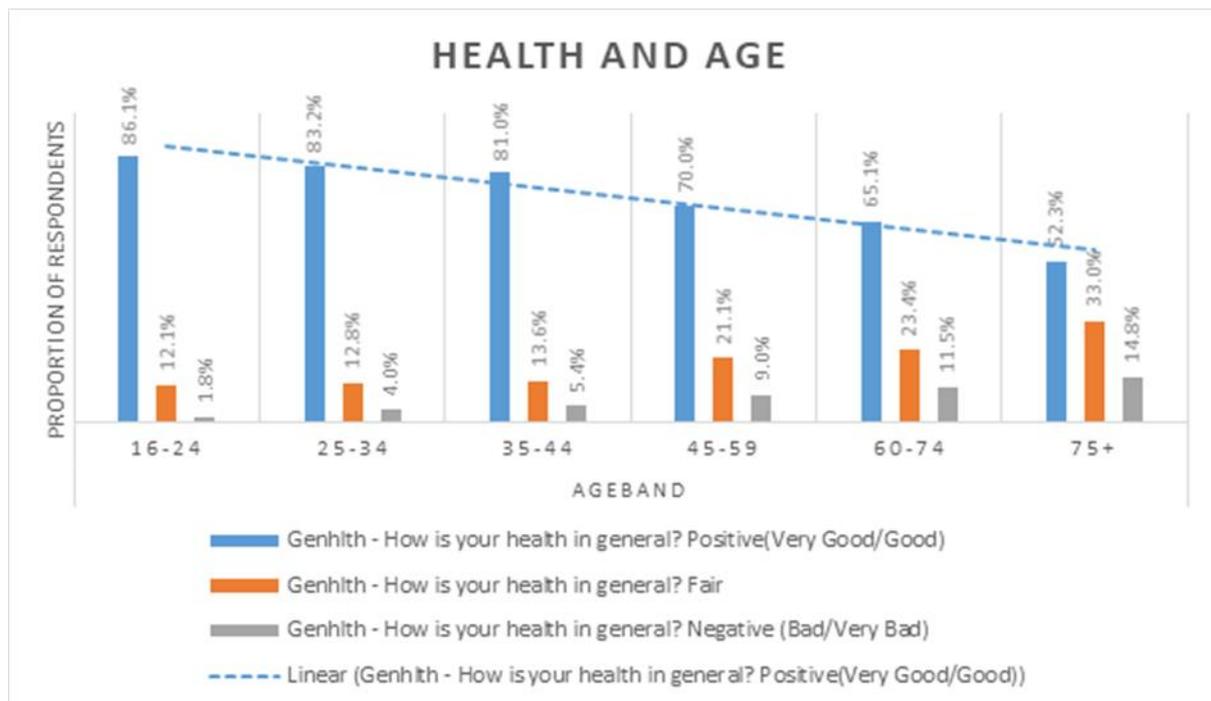


Figure 3: Differences in Health Perceptions between Age Groups in 2016

3. Volunteering and General Health

3.1 Baseline Relationship between Volunteering and General Health

To measure general health, we assessed an individual respondent's self-perceptions of health. Respondents were asked the question "How is your health in general?" with ordinal responses ranging from "very good" to "very bad"; we recoded as before to indicate positive, neutral and negative perceptions.

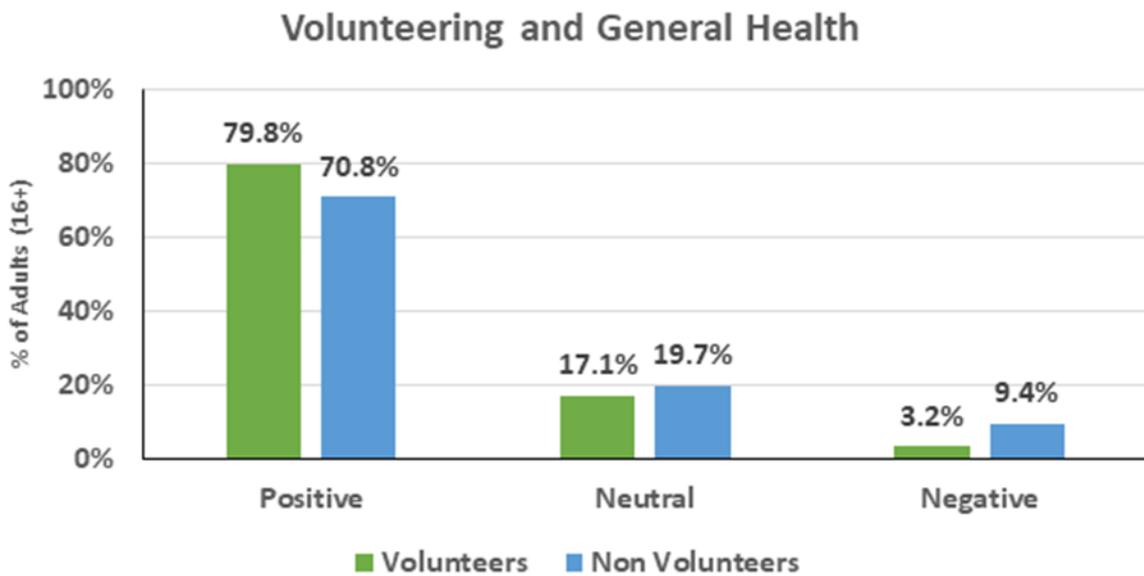


Figure 4: Differences in Health Perceptions between Volunteers and Non-volunteers in 2016

It appears that in general volunteers have more positive perceptions about their health than non-volunteers with 79.8% of volunteers self-identifying their health as positive (very good or good) compared to only 70.8% for non-volunteers. 9.4% of non-volunteers reported negative perceptions of their individual health compared to only 3.2% of volunteers. A Chi-square test confirmed significant differences in individual health perceptions between volunteers and non-volunteers. However, the degree of association is small (Appendix B).

3.2 General Health and Volunteering over time

We investigated how volunteering and health has changed over time. Since 2012, volunteers have consistently had more positive perceptions of health compared to non-volunteers as illustrated by Fig 5 below:

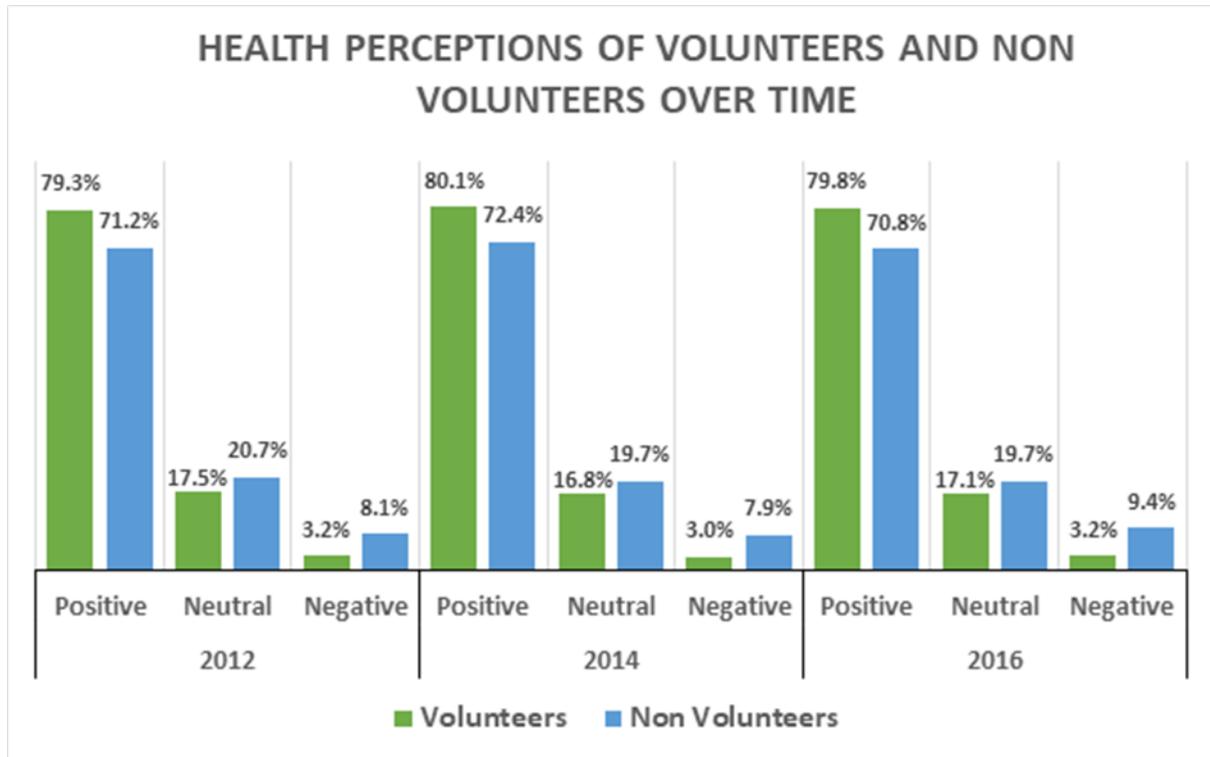


Figure 5: Health Perceptions of Volunteers and Non-volunteers over Time

Chi-square tests for each of the three years confirmed significant differences in the health perceptions of volunteers and non-volunteers over time (Appendix B). In general, volunteers perceive themselves as healthier than non-volunteers.

3.3 General Health and Volunteering Frequency

The literature suggests that the frequency of volunteering may impact on the level of benefit received by the volunteer (Linning and Jackson 2018). Fig 6 illustrates the relationship between self-reported general health and volunteering frequency suggesting a difference in health perceptions depending on the frequency of volunteering, perhaps a reflection of the general population dynamics.

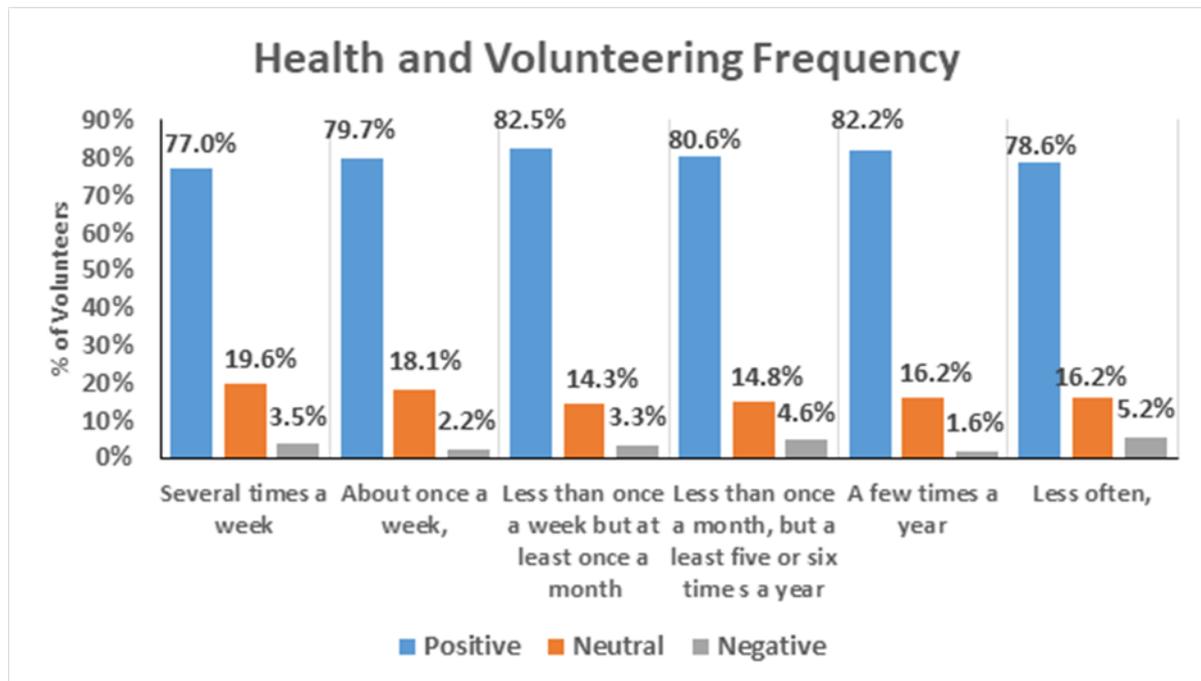


Figure 6: General Health Perceptions of Volunteers and Volunteering Frequency in 2016

To investigate the significance of the observation, a chi-square test was conducted showing evidence of a relationship between health and volunteering frequency (Appendix B).

It appears that those who volunteer ‘less than once a week but at least once a month’ have the highest positive perception of their general health. There is not a clear relationship between volunteering frequency and perceptions of general health. Further analysis of volunteering frequency by demographic group may help to explain¹ the relationship between health and frequency of volunteering.

3.4 General Health and Volunteering Intensity

We assessed the number of hours volunteered per month against general health. The mean number of volunteering hours was then computed for each general health category. No significant difference was found between means (Appendix B).

(It is worth mentioning some values were coded 999703, which indicated respondents had volunteered for less than an hour. These were recoded to 0.5. Responses of 0 hours were recoded as 0.5, as although the respondent hadn’t volunteered in the past 4 weeks, they had at some point in the past year. Others were coded 999998 meaning no information was available. These values were excluded from the analysis).

¹ For example, if more of those that volunteer ‘several times a week’ are older this could help explain why general health perceptions are lower - positive perceptions of general health decrease with age.

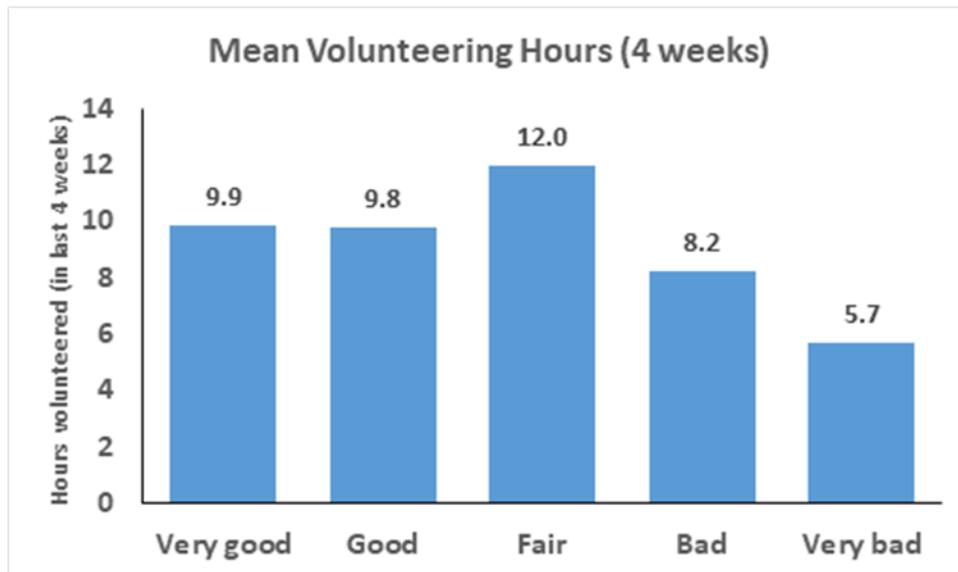


Figure 7: Mean Volunteering Hours and General Health

3.5 Conclusion

Statistically significant relationships were identified between volunteering participation and general health, and volunteering frequency and general health. No statistically significant relationship was found between volunteering intensity and general health.

4. Volunteering and Mental Health

4.1 How do we measure Mental Health?

Linning and Jackson (2018) identify an overwhelming body of evidence suggesting that volunteering can have a beneficial impact on mental health and wellbeing. The Analytical Framework they provide illustrates several intermediate outcomes, connected to mental health, such as self-esteem, having fun, sense of achievement, task satisfaction, confidence improvement, sense of purpose, larger social networks, social standing, new skills and altruism. (Linning and Jackson 2018).

To measure mental health in the Scottish Household Survey we have used the variable SWEMWBS. This is a shortened version of WEMWBS, the Warwick–Edinburgh Mental Wellbeing Scale (Health Scotland 2019). This questionnaire measures positive effects, like optimism and cheerfulness and positive functioning, energy, self-acceptance and personal development. This positively worded scale has answers from '1 - none of the time' to '5 - all of the time' (Scot Gov 2017).

4.2 Mental Health, Volunteering and Age

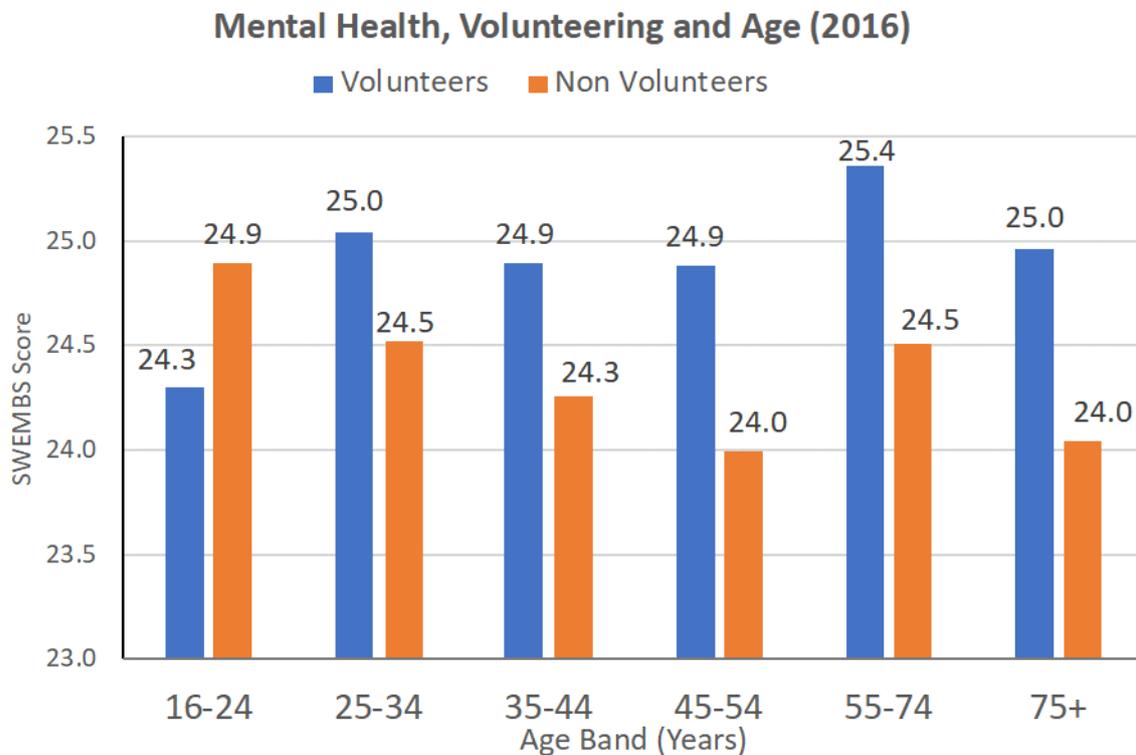


Figure 8: Mental Health, Volunteering & Age (2016)

This chart indicates a difference in the mean mental health scores for volunteers and non-volunteers for those aged 25 years and above. Volunteers in the 16-24-year band have the lowest mean SWEMBS score and are the only age group where the volunteer score is below that for non-volunteers. Volunteers aged 55-74 years old have the highest overall score.

Studies of older populations have shown that later life is often a time of declining health but engagement in socially productive activities like volunteering can lower the risk of all-cause mortality and are associated with improved health outcomes and happiness (Volunteer Now 2013).

4.3 Mental Health over time

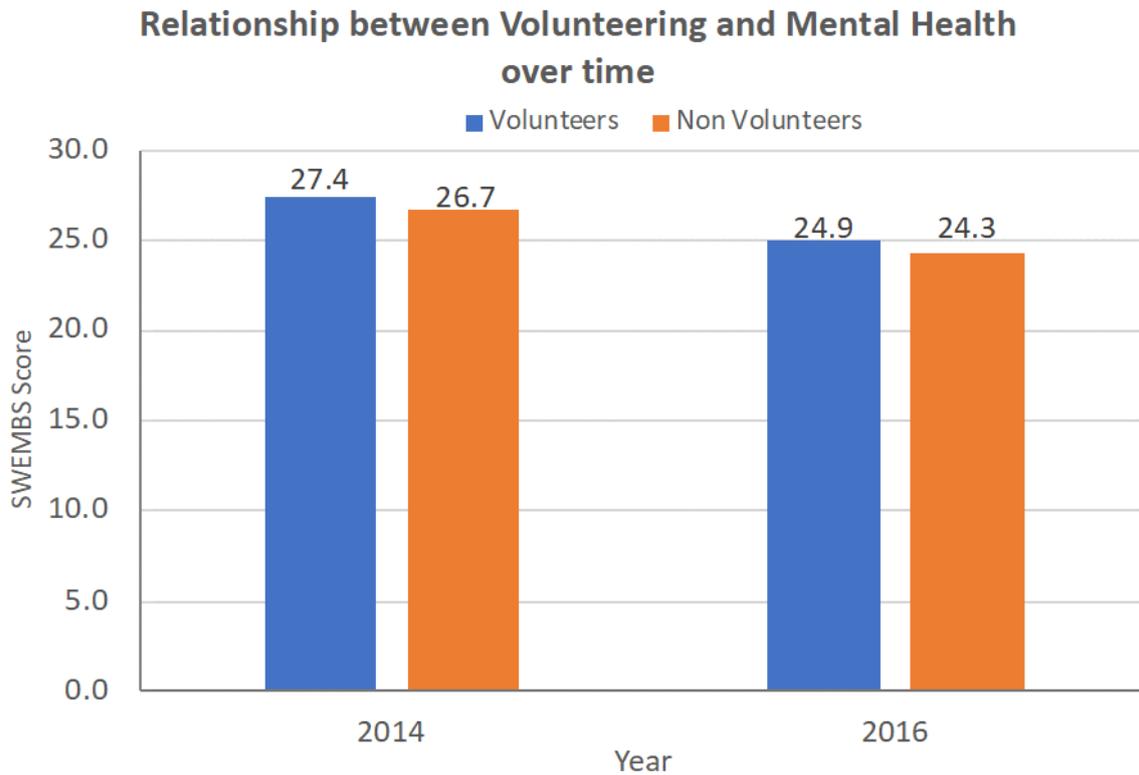


Figure 9: Relationship of Volunteering & Mental Health Over Time²

When we look at the chart, we can see that there is an apparent difference between groups in 2014, with the volunteering group mean 0.7 higher than the non-volunteering group. This reduced to 0.6 in 2016 due to a decrease in mental health score for both non volunteers (8.95%) and volunteers (9.91%). Further research is needed to understand what has caused narrowing in the mean difference between the two groups, but it could be caused by stress or ‘burnout’ (Linning and Jackson 2018).

To determine whether a change over time is statistically significant we conducted a Z-test as mental health is a continuous variable with values from 7 to 35 and the best test for it is the Z-test. It confirmed that there is a significant statistical difference in the mean mental health scores. (Appendix C)

4.4 Conclusion

The literature suggests that volunteering has the potential to enhance individuals’ mental health and wellbeing. This sample analysis shows that there exists a significant relationship between mental health and volunteering. While older volunteers (55-74) appear to benefit the most, younger volunteers (16-24) appear to have poorer mental health than their non-volunteering counterparts; a finding which runs counter to the overall trend and one worthy of further exploration.

² (The 2012 survey did not collect SWEMWBS data, therefore Figure 9 contains data for 2014 and 2016 only)

5. Volunteering and Social Capital

5.1 What is ‘Social Capital’ and how do we measure it?

Linning and Jackson (2018) assess impact of volunteering on social isolation and loneliness. However, the SHS does not directly address these issues but provides a perspective on the broader concept of Social Capital.

Social Capital has many definitions and is applied to numerous areas of social science and economics. The OECD describes social capital as:

“networks together with shared norms, values and understandings that facilitate co-operation within or among groups” (OECD no date)

Claridge (2004) also generalises social capital as “social structures that have productive benefits”, with 3 delineated areas or types:

- a) **Structural** – political, volunteering participation, member of an association
- b) **Cognitive** – social networks, neighbourhood cohesion, togetherness, bonding, bridging, linking
- c) **Relational** – trust, social support, reciprocity, shared emotional connection (Claridge 2004)

We initially chose 11 variables which were loosely associated with either social capital, neighbourhood, networks or politics. Four of these were discarded as we felt that the connection to the definitions and types of social capital, as described by Claridge, were not apparent from the SHS document.

The remaining 7 variables had a broad reach and overlapped into at least two of the three social capital areas mentioned above. There were also similarities amongst the variables and a clear split in the perspective they provided on social capital. Therefore, they were grouped by the perspective they provided. Three questions are presented separately (Indicator A) and the remaining four were combined into a single indicator (Indicator B) of social capital (Appendix D)

5.2 Social Capital, Volunteering and Age (Indicator A)

Responses were transformed to produce a positive (strongly agree / agree) and negative (disagree / strongly disagree) sentiment. The graphs below present only positive responses from both groups.

These graphs show responses to questions about perceived social capital in respect to: political, neighbourhood cohesion and shared emotional connection.

A general trend is apparent with volunteers having a more positive perception across each of the social capital indicators than non-volunteers. The direction of causation must be considered, as those who volunteer may feel more comfortable doing so as they feel more ‘connected’.

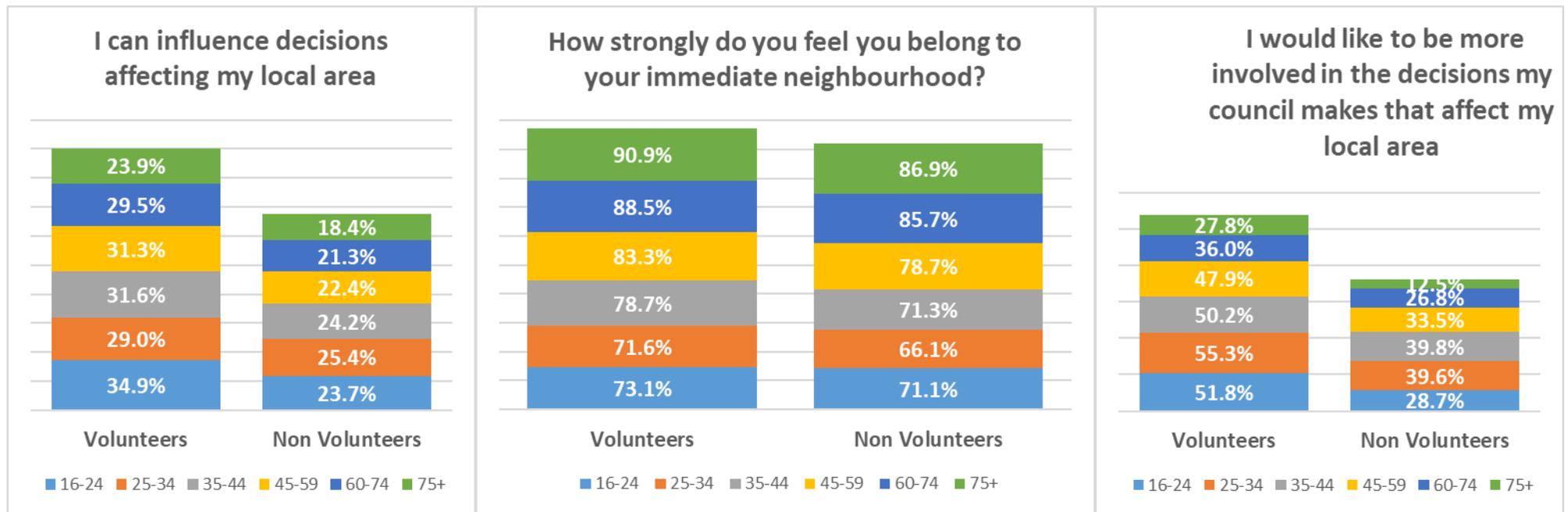


Figure 10: Positive responses to Social Capital Questions (Indicator A)

Analysing the standardised residual³ provides additional insights within volunteer and non-volunteer cohorts. The most significant results are shown below:

Fewer 75+ yr old non-volunteers <i>...can influence decisions affecting local volunteers than expected</i>	Fewer 25-34 yr old & More 60-74 yr old volunteers Fewer 16-44 yr old & More 60+ yr old non-volunteers	<i>...feel belonging to their immediate Neighbourhood than expected</i>	More 25-34 yr old and Less 60+ yr old volunteers More 25-44 yr old and Less 60+ yr old non-volunteers <i>...want to be more involved in local decision making than expected</i>
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³ Standardised residual is a statistical measure of the strength of the difference between observed and expected values in question responses

5.3 Social Capital, Volunteering and Age (Indicator B)

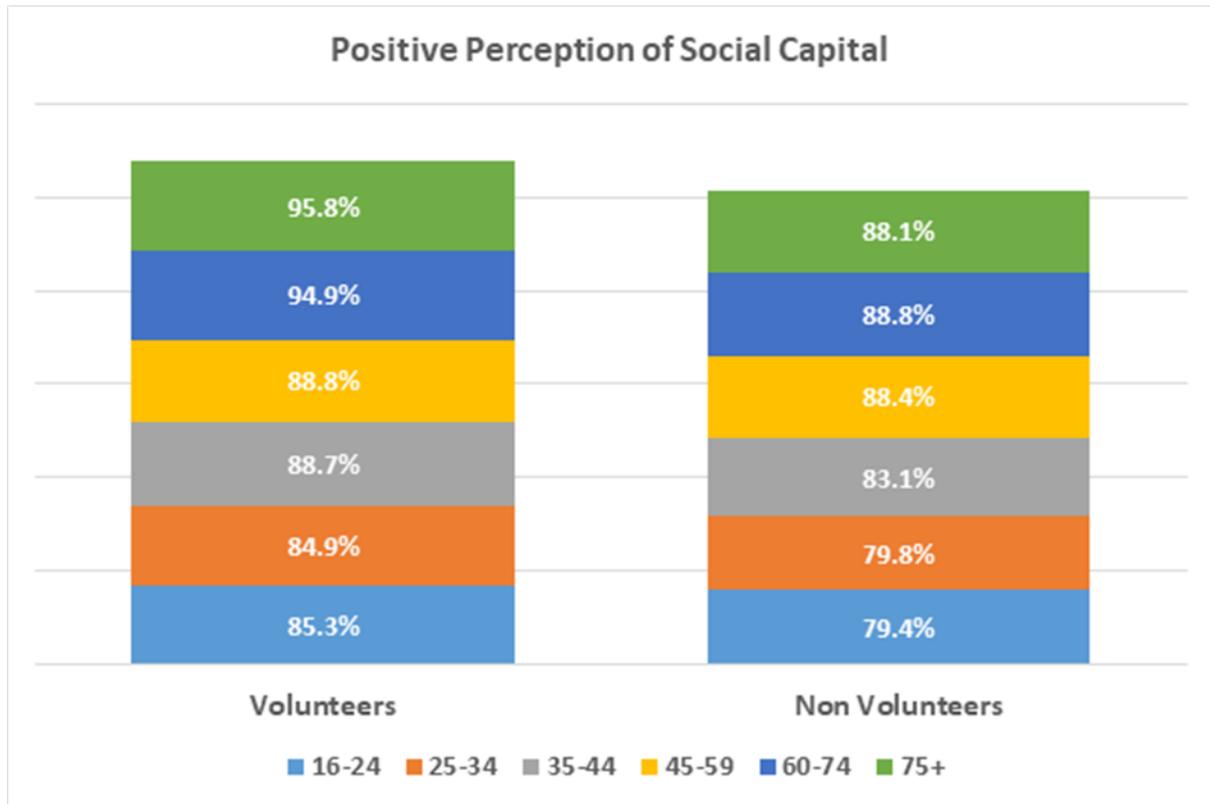


Figure 11: Positive responses to Social Capital Questions (Indicator B)

This graph aggregates the positive responses (agree / strongly agree) to 4 variable questions, similar in nature, and relating to: reciprocity; trust; shared connection; and neighbourhood cohesion, social networks and bonding. An apparent difference exists between the two groups; volunteers generally answer more positively when asked questions relating to social capital. This is true across each age band of respondents.

A hypothesis test showed that there is a statistically significant relationship between volunteering and feelings of connectedness and social capital (Appendix D).

5.4 Social Capital over time

The graph below shows the aggregated response to Social Capital Indicator B, in 5.3 above, illustrating the % of positive responses between 2012 and 2016. A Z-test was performed which concluded that for both groups there was no significant change in positive responses over time. A longitudinal study might provide a better insight into this aspect of health and wellbeing.

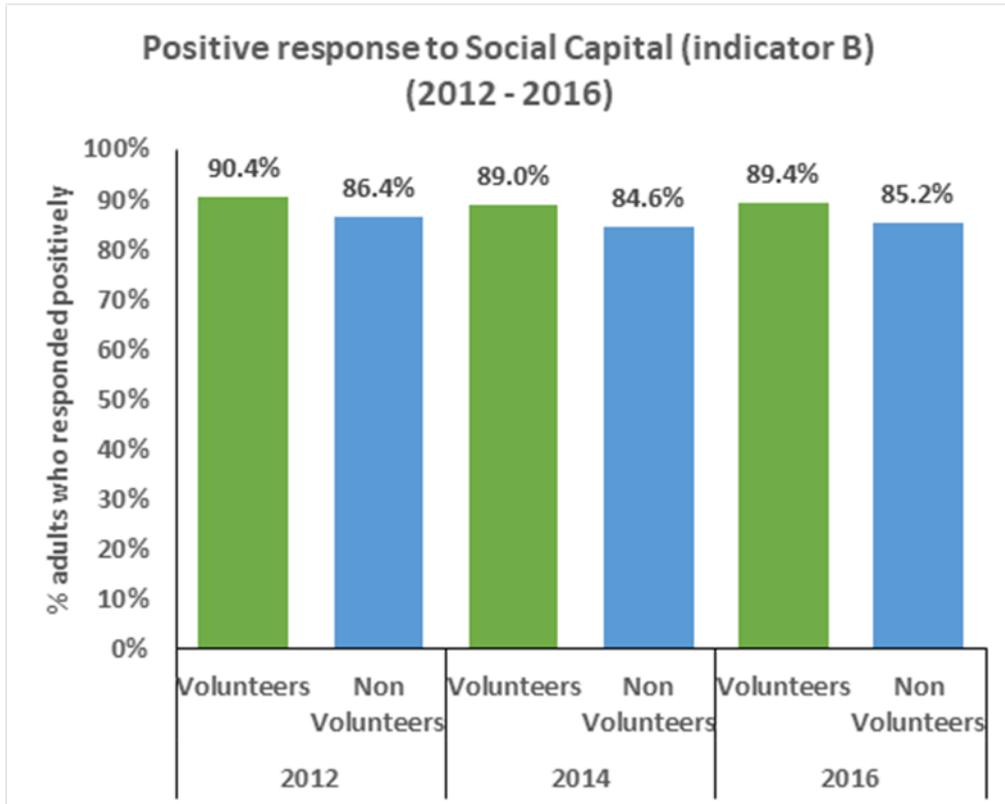


Figure 12: Overall Positive Response to Social Capital (2012-2016) by volunteer / non-volunteer group

5.5 Conclusion

Respondents who volunteer were more likely to answer positively to questions about social capital than non-volunteers. There is no statistically significant change in positive responses to Indicator B questions for either group, between 2012 and 2016.

6. Volunteering, Health and Employment & Income

6.1 Employment Status and Volunteering

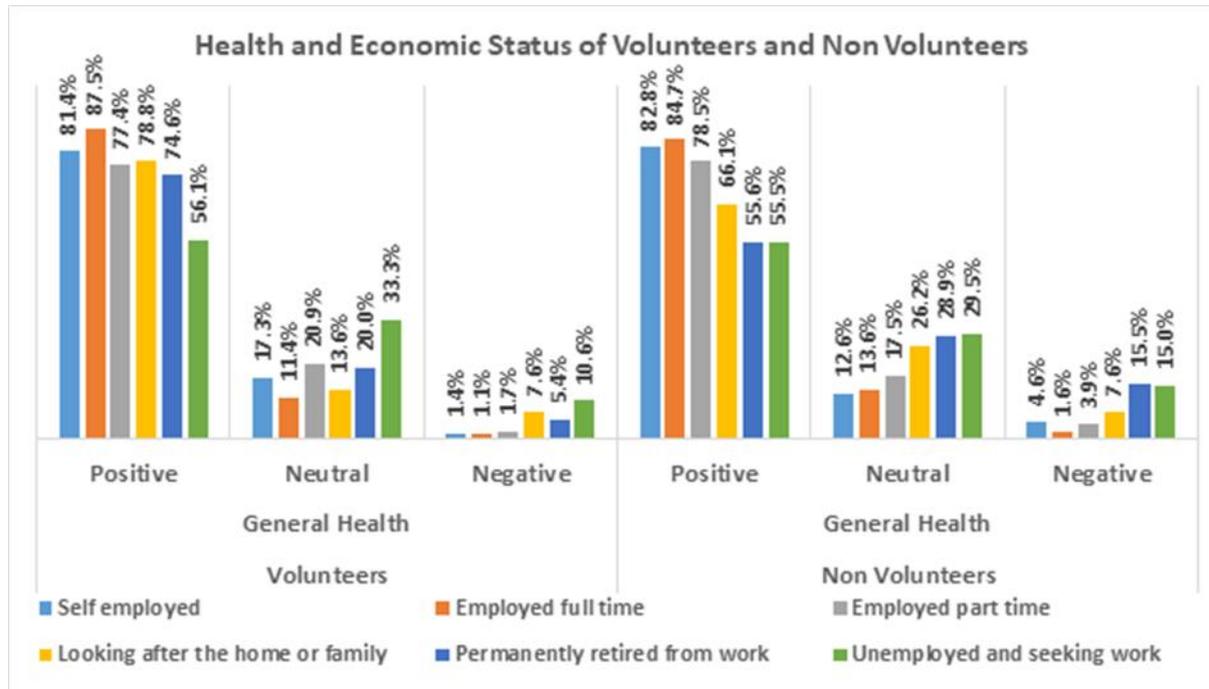


Figure 13: Health and Employment Status for 2016

Figure 13 above illustrates the health and employment status of volunteers and non-volunteers respectively in 2016.

Interesting differences in health between the two groups can be more easily observed in those respondents who reported more negative health perceptions (Bad/Very Bad). For instance, amongst volunteers 10.6% of unemployed individuals reported bad health, this figure rises to 15% amongst non-volunteers. 5.4% of retired volunteers reported poor health which rises to 15.5% amongst retired non-volunteers.

It would appear there exists a difference in health and employment status of volunteers and non-volunteers. To investigate, a chi-square test was conducted (Appendix E) whose results confirmed the existence of such an association. However, the strength of association is weak.

An analysis of the datasets for the preceding years of 2012 and 2014 also confirmed the existence of a similar relationship over time between the general health and employment status of volunteers and non-volunteers (Appendix E).

6.2 Household Income, Health and Volunteering

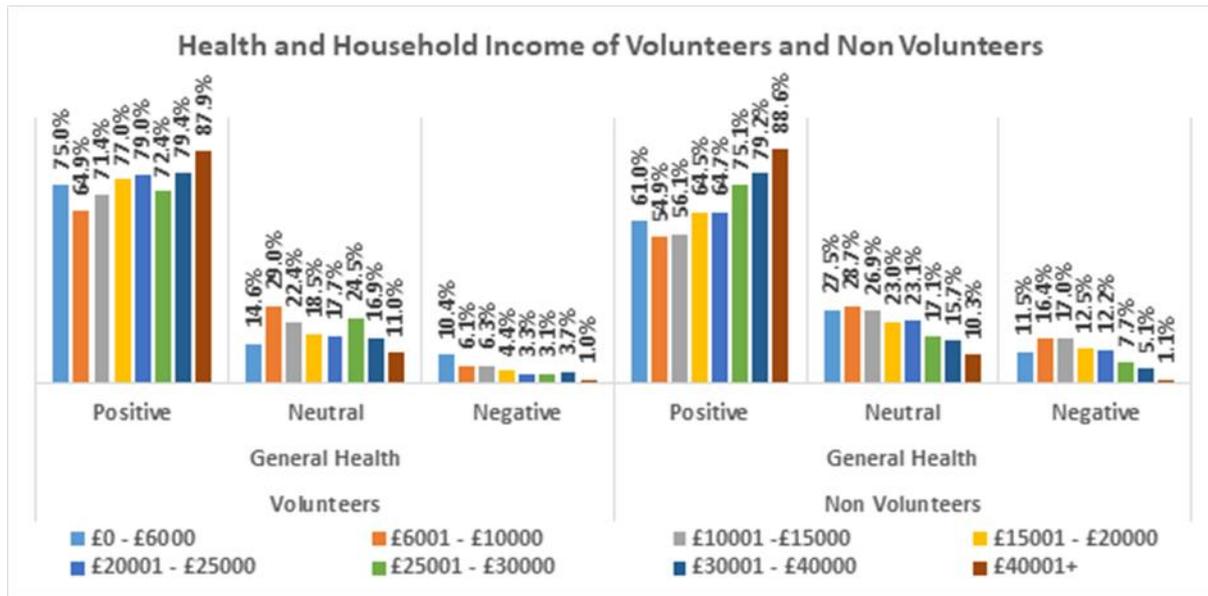


Figure 14: Annual Household Income and Health in 2016

Figure 14 above shows the banded annual household income and general health for volunteers and non-volunteers.

75% of volunteers from the lowest income bracket (£0-£6,000) had positive health perceptions (Very Good/ Good) compared to only 61% of non-volunteers within the same income bracket. 64.9% of volunteers from the second lowest income bracket (£6001-£10000) reported positive health compared to only 54.9% for non-volunteers.

However, amongst higher income groups the differences in health are only marginal and less pronounced. 87.9% and 88.6% of volunteers and non-volunteers respectively from the highest income bracket (£40,001+) identified as being in good health (Very Good/ Good). From the second highest income bracket (£30001-£40000), 79.4% of volunteers identified as healthy compared to 79.2% for non-volunteers.

It appears that volunteers from lower income households are healthier than non-volunteers from similar households. Chi-square tests on the 2012, 2014 and 2016 datasets confirmed the presence of this association between household income, health and volunteering over time. However, the degree of association is small (Appendix E).

6.3 Conclusion

Empirical evidence over time confirms that volunteers are significantly healthier than non-volunteers especially among the retired and the unemployed. Volunteers from lower income households are significantly healthier than non-volunteers from similar households.

7. Conclusions and recommendations for further research

7.1 Conclusions

The analysis has found significant relationships between volunteering and each of the 4 health and wellbeing outcomes investigated in this report: General Health, Mental Health, Social Capital, and Economic and Employment Outlook.

Specifically, on average, the health of a volunteer, in each of the health and wellbeing outcomes analysed, will be better than the health of a non-volunteer.

There has been no significant change to the general health or economic and employment outlook of either group since 2012.

Between 2014 and 2016 the difference in mental health scores for volunteers and non-volunteers has reduced with both groups' average mental health scores decreasing; the percentage decrease in the mental health scores of volunteers being higher than that of non-volunteers. A longitudinal study may help in explaining causation as the SHS is not longitudinal and selects a different random subset of the Scottish population to survey each year. A longitudinal survey analysis may help to answer the question - is volunteering, in some circumstances, itself impacting negatively on mental health?

Health has been shown to deteriorate with age, across both groups. However, the mental health of volunteers appears to improve the older the volunteer is. There is an improvement in social capital across all age groups for the volunteer group.

Caution must be exercised when drawing conclusions because this study is based on how individuals perceive their own health and wellbeing.

7.2 Further Research

The analysis showed generally a positive relationship between volunteering and health across all 4 outcomes. However, there are certain areas where we feel further research would be beneficial, or where insufficient data was available.

Physical health and Mortality

Further research here would assist in identifying which types of volunteering may be beneficial to physical health, but also in assisting Volunteer Scotland in identifying those who may wish to volunteer but can't due to health reasons. We couldn't assess mortality outcomes due to the absence of data.

Low Income

Low income appears to reduce the volunteering participation rate. Further research may help those on low income access volunteering which may in turn lead to other health and wellbeing outcomes as documented in this report.

Longitudinal Study

Longitudinal research would help in addressing the impact of volunteering over time on health and wellbeing.

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9. Appendices

9.1 Appendix A: The Dataset

Dataset	Variables	Observations
SHS 2012	2479	10642
SHS 2014	2477	10622
SHS 2014	2415	10454

After examining the datasets, we identified 18 variables that were needed for our analysis. We combined the 3 years of data to produce one large. We focused on the random adult variable as it is the basis of our analysis. That is because the random adults were asked relevant questions to our analysis that the other members of the family did not.

Another variable we had to further examine and clean was 'swemwbs'. This variable refers to the Warwick-Edinburgh Mental Wellbeing Scale which monitors mental wellbeing in the general population. This variable was revised in 2016 to consider instances where -99 appeared as a response. -99 meant that the interviewee did not know or refused to answer. In our 2014 dataset that was not the case, so we excluded these records from the calculation on the mean SWEMBS scores.

Variable Code	Survey Question	Values / Answers
voluntee	Whether involved in any voluntary activity in past 12 months (derived)	1 Yes 2 No
genhlth	How is your health in general?	1 Very good 2 Good 3 Fair 4 Bad 5 Very bad 6 Don't know
swemwbs	Warwick-Edinburgh Mental Wellbeing Scale	Scale: 14-70
rb4da	Agreement - could rely on friends/relatives in neighbourhood for help	1 Strongly agree 2 Tend to agree 3 Neither agree nor disagree 4 Tend to disagree 5 Strongly disagree
rb4db	Agreement - could rely on friends/relatives in neighbourhood to look after home	1 Strongly agree 2 Tend to agree 3 Neither agree nor disagree 4 Tend to disagree 5 Strongly disagree
rb4dc	Agreement - could turn to friends/relatives in neighbourhood for advice or support	1 Strongly agree 2 Tend to agree 3 Neither agree nor disagree 4 Tend to disagree 5 Strongly disagree

rb4dd	Agreement - would offer help to neighbours in an emergency	1 Strongly agree 2 Tend to agree 3 Neither agree nor disagree 4 Tend to disagree 5 Strongly disagree
randecon	Economic status of random adult	1 A - Self employed 2 B - Employed full time 3 C - Employed part time 4 D - Looking after the home or family 5 E - Permanently retired from work 6 F - Unemployed and seeking work 7 G - At school 8 H - In further / higher education 9 I - Gov't work or training scheme 10 J - Permanently sick or disabled 11 K - Unable to work because of short-term illness or injury 12 L - Preschool / Not yet at school 13 Other (specify)
commbel	How strongly do you feel you belong to your immediate neighbourhood?	1 Very strongly 2 Fairly strongly 3 Not very strongly 4 Not at all strongly 5 Don't know
randage	Age of random adult	Scale: 16-86
serv1h	Agreement - I can influence decisions affecting my local area	1 Strongly agree 2 Tend to agree 3 Neither agree nor disagree 4 Tend to disagree 5 Strongly disagree

		6 No opinion
serv1i	Agreement - I would like to be more involved in the decisions my council makes that affect my local area	1 Strongly agree 2 Tend to agree 3 Neither agree nor disagree 4 Tend to disagree 5 Strongly disagree 6 No opinion
tothinc	Rebanded annual net household income	1 £0 - £6000 2 £6001 - £10000 3 £10001 - £15000 4 £15001 - £20000 5 £20001 - £25000 6 £25001 - £30000 7 £30001 - £40000 8 £40001+
simd	Level of deprivation	1 1 - 20% most deprived 2 2 3 3 4 4 5 5 - 20% least deprived
vol3	Thinking about ALL the unpaid help you give to organisations; how frequently do you do this?	1 Several times a week 2 About once a week, 3 Less than once a week but at least once a month 4 Less than once a month, but a least five- or six- time s a year 5 A few times a year 6 Less often, 7 No answer

vol4	How many hours IN TOTAL would you estimate you spent in past month?	Scale: 0-97
bensum	Summary of benefits information	-1 No income from benefits 1 Income from benefits - no imputation 2 Income from benefits - some imputation

9.2 Appendix B: Volunteering and General health

9.2.1 Chi Squared - Volunteering, Health and Age Group

AgeRange * Gen Health New Crosstabulation

		Gen Health New			Total	
		Positive	Neutral	Negative		
AgeRange	16-24	Count	1124	158	23	1305
		% within AgeRange	86.1%	12.1%	1.8%	100.0%
	25-34	Count	1292	199	62	1553
		% within AgeRange	83.2%	12.8%	4.0%	100.0%
	35-44	Count	1151	193	77	1421
		% within AgeRange	81.0%	13.6%	5.4%	100.0%
	45-59	Count	1728	520	222	2470
		% within AgeRange	70.0%	21.1%	9.0%	100.0%
	60-74	Count	1273	458	224	1955
		% within AgeRange	65.1%	23.4%	11.5%	100.0%
	75+	Count	474	299	134	907
		% within AgeRange	52.3%	33.0%	14.8%	100.0%
Total		Count	7042	1827	742	9611
		% within AgeRange	73.3%	19.0%	7.7%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	539.185 ^a	10	.000
Likelihood Ratio	553.588	10	.000
Linear-by-Linear Association	501.427	1	.000
N of Valid Cases	9611		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 70.02.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.237	.000
	Cramer's V	.167	.000
N of Valid Cases		9611	

9.2.2 Chi Squared Test – Health and Volunteering

Whether involved in any voluntary activity in past 12 months (derived) * Gen Health New Crosstabulation

		Gen Health New			Total	
		Positive	Neutral	Negative		
Whether involved in any voluntary activity in past 12 months (derived)	Yes	Count	2089	447	83	2619
		% within Whether involved in any voluntary activity in past 12 months (derived)	79.8%	17.1%	3.2%	100.0%
	No	Count	4953	1380	660	6993
		% within Whether involved in any voluntary activity in past 12 months (derived)	70.8%	19.7%	9.4%	100.0%
Total	Count	7042	1827	743	9612	
	% within Whether involved in any voluntary activity in past 12 months (derived)	73.3%	19.0%	7.7%	100.0%	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	124.761 ^a	2	.000
Likelihood Ratio	143.211	2	.000
Linear-by-Linear Association	102.663	1	.000
N of Valid Cases	9612		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 202.45.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.114	.000
	Cramer's V	.114	.000
N of Valid Cases		9612	

9.2.3 Health and Volunteering Over Time (2012-2016)

2014

Whether involved in any voluntary activity in past 12 months (derived) * genhlthnew Crosstabulation

		genhlthnew			Total	
		Positive	Neutral	Negative		
Whether involved in any voluntary activity in past 12 months (derived)	Yes	Count	2117	445	80	2642
		% within Whether involved in any voluntary activity in past 12 months (derived)	80.1%	16.8%	3.0%	100.0%
	No	Count	5166	1410	564	7140
		% within Whether involved in any voluntary activity in past 12 months (derived)	72.4%	19.7%	7.9%	100.0%
Total		Count	7283	1855	644	9782
		% within Whether involved in any voluntary activity in past 12 months (derived)	74.5%	19.0%	6.6%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	93.744 ^a	2	.000
Likelihood Ratio	105.457	2	.000
Linear-by-Linear Association	78.972	1	.000
N of Valid Cases	9782		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 173.94.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.098	.000
	Cramer's V	.098	.000
N of Valid Cases		9782	

2012

Whether involved in any voluntary activity in past 12 months (derived) * Gen hlth new Crosstabulation

		Gen hlth new			Total	
		Positive	Neutral	Negative		
Whether involved in any voluntary activity in past 12 months (derived)	Yes	Count	2281	503	91	2875
		% within Whether involved in any voluntary activity in past 12 months (derived)	79.3%	17.5%	3.2%	100.0%
	No	Count	4993	1455	567	7015
		% within Whether involved in any voluntary activity in past 12 months (derived)	71.2%	20.7%	8.1%	100.0%
Total		Count	7274	1958	658	9890
		% within Whether involved in any voluntary activity in past 12 months (derived)	73.5%	19.8%	6.7%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	103.444 ^a	2	.000
Likelihood Ratio	114.827	2	.000
Linear-by-Linear Association	88.821	1	.000
N of Valid Cases	9890		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 191.28.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.102	.000
	Cramer's V	.102	.000
N of Valid Cases		9890	

9.2.4 General Health and Volunteering Frequency

Gen Health New * vol3 – Thinking about ALL the unpaid help you give to organisations, how frequently do you do this?
Crosstabulation

		vol3 – Thinking about ALL the unpaid help you give to organisations, how frequently do you do this?								
		Several times a week	About once a week,	Less than once a week but at least once a month	Less than once a month, but at least five or six times a year	A few times a year	Less often,	No answer	Total	
Gen Health New	Positive	Count	354	533	428	245	350	136	44	2090
		% within vol3 – Thinking about ALL the unpaid help you give to organisations, how frequently do you do this?	77.0%	79.7%	82.5%	80.6%	82.2%	78.6%	63.8%	79.8%
	Neutral	Count	90	121	74	45	69	28	21	448
		% within vol3 – Thinking about ALL the unpaid help you give to organisations, how frequently do you do this?	19.6%	18.1%	14.3%	14.8%	16.2%	16.2%	30.4%	17.1%
	Negative	Count	16	15	17	14	7	9	4	82
		% within vol3 – Thinking about ALL the unpaid help you give to organisations, how frequently do you do this?	3.5%	2.2%	3.3%	4.6%	1.6%	5.2%	5.8%	3.1%
Total	Count	460	669	519	304	426	173	69	2620	
	% within vol3 – Thinking about ALL the unpaid help you give to organisations, how frequently do you do this?	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.337 ^a	12	.007
Likelihood Ratio	26.082	12	.010
Linear-by-Linear Association	.037	1	.848
N of Valid Cases	2620		

a. 1 cells (4.8%) have expected count less than 5. The minimum expected count is 2.16.

Symmetric Measures

	Value	Approximate Significance
Nominal by Nominal	Phi	.102
	Cramer's V	.072
N of Valid Cases	2620	

9.2.5 ANOVA - General Health and Volunteering Intensity

Descriptives

vol4new

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Very good	1008	9.8596	15.35572	.48374	8.9104	10.8089	.50	97.00
Good	940	9.8113	14.90487	.48611	8.8573	10.7653	.50	97.00
Fair	418	11.9631	18.07099	.88356	10.2263	13.6999	.50	97.00
Bad	59	8.2294	15.70584	2.04179	4.1426	12.3162	.50	97.00
Very bad	15	5.6655	5.93519	1.55866	2.3109	9.0202	.50	24.00
Total	2440	10.1372	15.67447	.31734	9.5149	10.7595	.50	97.00

ANOVA

vol4new

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2077.352	4	519.338	2.117	.076
Within Groups	597101.822	2434	245.317		
Total	599179.175	2438			

9.3 Appendix C: Volunteering and Mental health

Mental health is measured in the Scottish Health Survey using the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) questionnaire. It has 14 items designed to assess: positive affect (optimism, cheerfulness, relaxation) and satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, mastery and autonomy). The scale uses positively worded statements with a five-item scale ranging from '1 - none of the time' to '5 - all of the time'.

SWEMWBS is a shortened version of WEMWBS which is Rasch compatible. This means the seven items included have undergone a more rigorous test for internal consistency than the 14-item scale and have superior scaling properties. The seven items relate more to functioning than to feeling and therefore offer a slightly different perspective on mental wellbeing. However, the correlation between WEMWBS and SWEMWBS is high at 95.4%. The SWEMWBS scale runs from seven for the lowest levels of mental wellbeing to 35 for the highest.

SWEMWBS statements are as follows:

- I've been feeling optimistic about the future
- I've been feeling useful
- I've been feeling relaxed
- I've been dealing with problems well
- I've been thinking clearly
- I've been feeling close to other people
- I've been able to make up my own mind about things

Average mental wellbeing score by source survey (scale from 7-35 and margin of error)

Survey	Average	Error
SSCQ	24.2	± 0.1
SCJS	24.7	± 0.1
SHS	24.3	± 0.1
SHeS	22.9	± 0.1

The three surveys produce similar average mental wellbeing scores. It is thought the SHS estimate is lower due to the context of the health survey and surrounding questions on mental health.

Z tests – Mental Health 2014 -2016

Volunteers	Mean	Sample size	standard deviation	Non Volunteers	Mean	Sample size	standard deviation
2014	27.4	2646	4.03415	2014	26.7	7143	4.54575
2016	24.9	7143	3.871903	2016	24.3	6792	4.232171
z=	2.23	27.76531269		z=	-2.24	32.1678023	
P value	0.0269	0.00000000		P value	0.0267	0.00000000	

As the P value is less than 0.05 we can reject the null hypothesis that there is no statistically significant difference in mental health scores between 2014 and 2016 and conclude that there is a statistically significant decrease in mental health scores for both volunteers and non volunteers.

9.4 Appendix D: Volunteering and Social Capital

9.4.1 Variables for Social Capital

Variables chosen as indicators for social capital:

Indicator A

serv1h I can influence decisions affecting my local area

serv1i I would like to be more involved in the decisions my council makes that affect my local area

commbel How strongly do you feel you belong to your immediate neighbourhood?

Indicator B (aggregated)

rb4da Could rely on friends/relatives in neighbourhood for help

rb4db Could rely on friends/relatives in neighbourhood to look after home

rb4dc Could turn to friends/relatives in neighbourhood for advice or support

rb4dd Would offer help to neighbours in an emergency

To aggregate the results a new variable was created which added the individual scores from the 4 questions included in indicator B. Aggregated scores of 4-8 were coded as positive responses, 16-20 were coded as negative responses and 9-15 coded as neutral responses.

9.4.2 Chi Squared tests for Social Capital

Still there is need to test this hypothesis and for this investigation, a chi-square test was used. The null hypothesis being that there is no significant association between social capital and whether an individual volunteers against the alternative that indeed there exists a significant relationship between social capital and whether an individual volunteers.

Serv1h - I can influence decisions affecting my local area

Agreement - I can influence decisions affecting my local area * AgeRange * Whether involved in any voluntary activity in past 12 months (derived)

Crosstab

Whether involved in any voluntary activity in past 12 months (derived)			AgeRange						Total	
			16-24	25-34	35-44	45-59	60-74	75+		
Yes	serv1hnew	Positive	Count	129	113	128	206	158	38	772
			% within AgeRange	34.9%	29.0%	31.6%	31.3%	29.5%	23.9%	30.7%
			Standardized Residual	1.5	-.6	.3	.3	-.5	-1.5	
		Neutral	Count	122	102	89	118	95	25	551
			% within AgeRange	33.0%	26.2%	22.0%	17.9%	17.8%	15.7%	21.9%
			Standardized Residual	4.6	1.8	.0	-2.2	-2.0	-1.7	
	Negative	Count	119	175	188	335	282	96	1195	
		% within AgeRange	32.2%	44.9%	46.4%	50.8%	52.7%	60.4%	47.5%	
		Standardized Residual	-4.3	-.7	-.3	1.3	1.8	2.4		
	Total	Count	370	390	405	659	535	159	2518	
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	No	serv1hnew	Positive	Count	181	259	228	382	280	122
% within AgeRange				23.7%	25.4%	24.2%	22.4%	21.3%	18.4%	22.6%
Standardized Residual				.6	1.8	1.0	-.2	-1.1	-2.3	
Neutral			Count	187	271	227	335	232	133	1385
			% within AgeRange	24.5%	26.6%	24.0%	19.7%	17.6%	20.0%	21.6%
			Standardized Residual	1.7	3.4	1.6	-1.7	-3.1	-.9	
Negative		Count	396	490	489	987	805	409	3576	
		% within AgeRange	51.8%	48.0%	51.8%	57.9%	61.1%	61.6%	55.8%	
		Standardized Residual	-1.5	-3.3	-1.6	1.2	2.6	2.0		
Total		Count	764	1020	944	1704	1317	664	6413	
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Chi-Square Tests

Whether involved in any voluntary activity in past 12 months (derived)		Value	df	Asymptotic Significance (2-sided)
Yes	Pearson Chi-Square	70.180 ^b	10	.000
	Likelihood Ratio	69.955	10	.000
	Linear-by-Linear Association	16.288	1	.000
	N of Valid Cases	2518		
	No	Pearson Chi-Square	69.784 ^c	10
Likelihood Ratio		70.067	10	.000
Linear-by-Linear Association		27.714	1	.000
N of Valid Cases		6413		
Total		Pearson Chi-Square	120.894 ^a	10
	Likelihood Ratio	121.069	10	.000
	Linear-by-Linear Association	48.802	1	.000
	N of Valid Cases	8931		

- a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 178.40.
- b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 34.79.
- c. 0 cells (.0%) have expected count less than 5. The minimum expected count is 143.40.

Serv1 - I would like to be more involved in the decisions my council makes that affect my local area
serv1new * AgeRange * Whether involved in any voluntary activity in past 12 months (derived)

Crosstab

Whether involved in any voluntary activity in past 12 months (derived)				AgeRange						Total
				16-24	25-34	35-44	45-59	60-74	75+	
Yes	serv1new	Positive	Count	200	223	206	316	195	45	1185
			% within AgeRange	51.8%	55.3%	50.2%	47.9%	36.0%	27.8%	46.2%
			Standardized Residual	1.6	2.7	1.2	.6	-3.5	-3.5	
		Neutral	Count	72	63	72	104	86	16	413
			% within AgeRange	18.7%	15.6%	17.6%	15.8%	15.9%	9.9%	16.1%
			Standardized Residual	1.2	-.2	.7	-.2	-.1	-2.0	
	Negative	Count	114	117	132	240	261	101	965	
		% within AgeRange	29.5%	29.0%	32.2%	36.4%	48.2%	62.3%	37.7%	
		Standardized Residual	-2.6	-2.8	-1.8	-.5	4.0	5.1		
	Total	Count	386	403	410	660	542	162	2563	
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
No	serv1new	Positive	Count	234	422	384	586	363	86	2075
			% within AgeRange	28.7%	39.6%	39.8%	33.5%	26.8%	12.5%	31.3%
			Standardized Residual	-1.3	4.8	4.7	1.7	-3.0	-8.8	
		Neutral	Count	160	188	171	290	202	84	1095
			% within AgeRange	19.7%	17.6%	17.7%	16.6%	14.9%	12.2%	16.5%
			Standardized Residual	2.2	.9	.9	.1	-1.4	-2.8	
	Negative	Count	420	457	410	871	791	520	3469	
		% within AgeRange	51.6%	42.8%	42.5%	49.9%	58.3%	75.4%	52.3%	
		Standardized Residual	-.3	-4.3	-4.2	-1.4	3.1	8.4		
	Total	Count	814	1067	965	1747	1356	690	6639	
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Chi-Square Tests

Whether involved in any voluntary activity in past 12 months (derived)		Value	df	Asymptotic Significance (2-sided)
Yes	Pearson Chi-Square	102.375 ^b	10	.000
	Likelihood Ratio	101.115	10	.000
	Linear-by-Linear Association	66.578	1	.000
	N of Valid Cases	2563		
No	Pearson Chi-Square	271.642 ^c	10	.000
	Likelihood Ratio	285.705	10	.000
	Linear-by-Linear Association	112.086	1	.000
	N of Valid Cases	6639		
Total	Pearson Chi-Square	373.055 ^a	10	.000
	Likelihood Ratio	385.511	10	.000
	Linear-by-Linear Association	191.557	1	.000
	N of Valid Cases	9202		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 139.62.

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 26.10.

c. 0 cells (.0%) have expected count less than 5. The minimum expected count is 113.80.

Combel - How strongly do you feel you belong to your immediate neighbourhood?

commbelnew * AgeRange * Whether involved in any voluntary activity in past 12 months (derived)

Crosstab

Whether involved in any voluntary activity in past 12 months (derived)			AgeRange						Total		
			16-24	25-34	35-44	45-59	60-74	75+			
Yes	commbelnew	Positive	Count	301	293	325	554	485	149	2107	
			% within AgeRange	73.1%	71.6%	78.7%	83.3%	88.5%	90.9%	80.7%	
			Standardized Residual	-1.7	-2.0	-.5	.7	2.0	1.4		
	Negative	Count	111	116	88	111	63	15	504		
		% within AgeRange	26.9%	28.4%	21.3%	16.7%	11.5%	9.1%	19.3%		
		Standardized Residual	3.5	4.2	.9	-1.5	-4.2	-3.0			
	Total	Count	412	409	413	665	548	164	2611		
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
	No	commbelnew	Positive	Count	619	742	712	1419	1203	643	5338
				% within AgeRange	71.1%	66.1%	71.3%	78.7%	85.7%	86.9%	76.9%
Standardized Residual				-2.0	-4.1	-2.0	.9	3.7	3.1		
Negative		Count	252	380	286	384	201	97	1600		
		% within AgeRange	28.9%	33.9%	28.7%	21.3%	14.3%	13.1%	23.1%		
		Standardized Residual	3.6	7.5	3.7	-1.6	-6.8	-5.6			
Total		Count	871	1122	998	1803	1404	740	6938		
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
Total		commbelnew	Positive	Count	920	1035	1037	1973	1688	792	7445
				% within AgeRange	71.7%	67.6%	73.5%	79.9%	86.5%	87.6%	78.0%
	Standardized Residual			-2.5	-4.6	-1.9	1.1	4.3	3.3		
	Negative	Count	363	496	374	495	264	112	2104		
		% within AgeRange	28.3%	32.4%	26.5%	20.1%	13.5%	12.4%	22.0%		
		Standardized Residual	4.8	8.6	3.6	-2.1	-8.0	-6.2			
	Total	Count	1283	1531	1411	2468	1952	904	9549		
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

Chi-Square Tests

Whether involved in any voluntary activity in past 12 months (derived)		Value	df	Asymptotic Significance (2-sided)
Yes	Pearson Chi-Square	73.258 ^b	5	.000
	Likelihood Ratio	74.899	5	.000
	Linear-by-Linear Association	68.498	1	.000
	N of Valid Cases	2611		
No	Pearson Chi-Square	213.377 ^c	5	.000
	Likelihood Ratio	217.675	5	.000
	Linear-by-Linear Association	178.858	1	.000
	N of Valid Cases	6938		
Total	Pearson Chi-Square	278.240 ^a	5	.000
	Likelihood Ratio	283.944	5	.000
	Linear-by-Linear Association	239.627	1	.000
	N of Valid Cases	9549		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 199.18.

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 31.66.

c. 0 cells (.0%) have expected count less than 5. The minimum expected count is 170.65.

Indicator B

IndexNew * AgeRange * Whether involved in any voluntary activity in past 12 months (derived) Crosstabulation

Whether involved in any voluntary activity in past 12 months (derived)			AgeRange						Total		
			16-24	25-34	35-44	45-59	60-74	75+			
Yes	IndexNew	Positive	Count	355	349	368	594	522	158	2346	
			% within AgeRange	85.3%	84.9%	88.7%	88.8%	94.9%	95.8%	89.3%	
	Negative	Count	3	2	8	11	1	0	25		
		% within AgeRange	0.7%	0.5%	1.9%	1.6%	0.2%	0.0%	1.0%		
	Neutral	Count	58	60	39	64	27	7	255		
		% within AgeRange	13.9%	14.6%	9.4%	9.6%	4.9%	4.2%	9.7%		
	Total	Count	416	411	415	669	550	165	2626		
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
	No	IndexNew	Positive	Count	705	913	838	1600	1253	657	5966
				% within AgeRange	79.4%	79.8%	83.1%	88.4%	88.8%	88.1%	85.2%
Negative		Count	31	30	26	31	21	16	155		
		% within AgeRange	3.5%	2.6%	2.6%	1.7%	1.5%	2.1%	2.2%		
Neutral		Count	152	201	144	178	137	73	885		
		% within AgeRange	17.1%	17.6%	14.3%	9.8%	9.7%	9.8%	12.6%		
Total		Count	888	1144	1008	1809	1411	746	7006		
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
Total		IndexNew	Positive	Count	1060	1262	1206	2194	1775	815	8312
				% within AgeRange	81.3%	81.2%	84.8%	88.5%	90.5%	89.5%	86.3%
	Negative	Count	34	32	34	42	22	16	180		
		% within AgeRange	2.6%	2.1%	2.4%	1.7%	1.1%	1.8%	1.9%		
	Neutral	Count	210	261	183	242	164	80	1140		
		% within AgeRange	16.1%	16.8%	12.9%	9.8%	8.4%	8.8%	11.8%		
	Total	Count	1304	1555	1423	2478	1961	911	9632		
		% within AgeRange	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

Symmetric Measures

AgeRange			Value	Approximate Significance
16-24	Nominal by Nominal	Phi	.093	.003
		Cramer's V	.093	.003
	N of Valid Cases		1304	
25-34	Nominal by Nominal	Phi	.077	.010
		Cramer's V	.077	.010
	N of Valid Cases		1555	
35-44	Nominal by Nominal	Phi	.070	.029
		Cramer's V	.070	.029
	N of Valid Cases		1423	
45-59	Nominal by Nominal	Phi	.005	.972
		Cramer's V	.005	.972
	N of Valid Cases		2478	
60-74	Nominal by Nominal	Phi	.097	.000
		Cramer's V	.097	.000
	N of Valid Cases		1961	
75+	Nominal by Nominal	Phi	.100	.010
		Cramer's V	.100	.010
	N of Valid Cases		911	
Total	Nominal by Nominal	Phi	.059	.000
		Cramer's V	.059	.000
	N of Valid Cases		9632	

There is an overall statistically significant relationship between whether individuals volunteer and indicator B, it should be noted that the relationship for those aged 45-59 is not statistically significant.

9.4.3 Z Test for Change in Social Capital (Indicator B) over time

Change in % of positive responses to Indicator B questions between 2012 and 2016.

	2012	2016	n1	n2	P _p	Z	p value	p critical
Volunteers	90.40%	89.40%	2,624	2,876	0.8987709	1.228055062	0.18768352	0.05
Non-Volunteers	86.40%	85.20%	7,005	7,015	0.8579957	2.035316107	0.050278	0.05

9.5 Appendix E: Volunteering and Economic & Employment Outlook

9.5.1 Volunteering, Health and Economic Status

2016

Whether involved in any voluntary activity in past 12 months (derived)				Economic status of random adult						Total
				A – Self employed	B – Employed full time	C – Employed part time	D – Looking after the home or family	E – Permanently retired from work	F – Unemployed and seeking work	
Yes	Gen Health New	Positive	Count	179	833	229	93	441	37	1812
			% within Economic status of random adult	81.4%	87.5%	77.4%	78.8%	74.6%	56.1%	80.8%
	Neutral	Count	38	109	62	16	118	22	365	
		% within Economic status of random adult	17.3%	11.4%	20.9%	13.6%	20.0%	33.3%	16.3%	
	Negative	Count	3	10	5	9	32	7	66	
		% within Economic status of random adult	1.4%	1.1%	1.7%	7.6%	5.4%	10.6%	2.9%	
	Total	Count	220	952	296	118	591	66	2243	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
No	Gen Health New	Positive	Count	322	2242	519	252	994	141	4470
			% within Economic status of random adult	82.8%	84.7%	78.5%	66.1%	55.6%	55.5%	73.1%
	Neutral	Count	49	361	116	100	516	75	1217	
		% within Economic status of random adult	12.6%	13.6%	17.5%	26.2%	28.9%	29.5%	19.9%	
	Negative	Count	18	43	26	29	277	38	431	
		% within Economic status of random adult	4.6%	1.6%	3.9%	7.6%	15.5%	15.0%	7.0%	
	Total	Count	389	2646	661	381	1787	254	6118	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Total	Gen Health New	Positive	Count	501	3075	748	345	1435	178	6282
			% within Economic status of random adult	82.3%	85.5%	78.2%	69.1%	60.3%	55.6%	75.1%
	Neutral	Count	87	470	178	116	634	97	1582	
		% within Economic status of random adult	14.3%	13.1%	18.6%	23.2%	26.7%	30.3%	18.9%	
	Negative	Count	21	53	31	38	309	45	497	
		% within Economic status of random adult	3.4%	1.5%	3.2%	7.6%	13.0%	14.1%	5.9%	
	Total	Count	609	3598	957	499	2378	320	8361	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

2014

Whether involved in any voluntary activity in past 12 months (derived)				Economic status of random adult						Total
				A – Self employed	B – Employed full time	C – Employed part time	D – Looking after the home or family	E – Permanently retired from work	F – Unemployed and seeking work	
Yes	genhlthnew	Positive	Count	161	885	271	81	413	59	1870
			% within Economic status of random adult	83.4%	86.9%	82.6%	71.1%	72.5%	69.4%	81.0%
		Neutral	Count	28	120	52	28	130	20	378
	% within Economic status of random adult		14.5%	11.8%	15.9%	24.6%	22.8%	23.5%	16.4%	
	Negative	Count	4	13	5	5	27	6	60	
		% within Economic status of random adult	2.1%	1.3%	1.5%	4.4%	4.7%	7.1%	2.6%	
	Total	Count	193	1018	328	114	570	85	2308	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	No	genhlthnew	Positive	Count	293	2359	605	260	926	239
% within Economic status of random adult				85.7%	87.6%	82.1%	73.9%	52.7%	67.3%	75.1%
Neutral			Count	43	298	115	77	576	95	1204
		% within Economic status of random adult	12.6%	11.1%	15.6%	21.9%	32.8%	26.8%	19.3%	
Negative		Count	6	37	17	15	254	21	350	
		% within Economic status of random adult	1.8%	1.4%	2.3%	4.3%	14.5%	5.9%	5.6%	
Total		Count	342	2694	737	352	1756	355	6236	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Total		genhlthnew	Positive	Count	454	3244	876	341	1339	298
	% within Economic status of random adult			84.9%	87.4%	82.3%	73.2%	57.6%	67.7%	76.7%
	Neutral	Count	71	418	167	105	706	115	1582	
		% within Economic status of random adult	13.3%	11.3%	15.7%	22.5%	30.4%	26.1%	18.5%	
	Negative	Count	10	50	22	20	281	27	410	
		% within Economic status of random adult	1.9%	1.3%	2.1%	4.3%	12.1%	6.1%	4.8%	
Total	Count	535	3712	1065	466	2326	440	8544		

Symmetric Measures

Whether involved in any voluntary activity in past 12 months (derived)		Value	Approximate Significance
Yes	Nominal by Nominal	Phi	.179
		Cramer's V	.127
	N of Valid Cases	2308	
No	Nominal by Nominal	Phi	.364
		Cramer's V	.257
	N of Valid Cases	6236	
Total	Nominal by Nominal	Phi	.319
		Cramer's V	.226
	N of Valid Cases	8544	

2012

Whether involved in any voluntary activity in past 12 months (derived)				Economic status of random adult						Total
				A - Self employed	B - Employed full time	C - Employed part time	D - Looking after the home or family	E - Permanently retired from work	F - Unemployed and seeking work	
Yes	Gen hlth new	Positive	Count	215	856	309	110	447	65	2002
			% within Economic status of random adult	85.0%	85.5%	88.3%	76.4%	70.4%	64.4%	80.6%
		Neutral	Count	36	138	40	28	156	31	429
	% within Economic status of random adult		14.2%	13.8%	11.4%	19.4%	24.6%	30.7%	17.3%	
	Negative	Count	2	7	1	6	32	5	53	
		% within Economic status of random adult	0.8%	0.7%	0.3%	4.2%	5.0%	5.0%	2.1%	
	Total	Count	253	1001	350	144	635	101	2484	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	No	Gen hlth new	Positive	Count	308	2217	597	259	888	250
% within Economic status of random adult				82.1%	86.8%	83.1%	74.0%	51.2%	59.5%	73.5%
Neutral			Count	62	300	110	80	606	133	1291
		% within Economic status of random adult	16.5%	11.8%	15.3%	22.9%	34.9%	31.7%	21.0%	
Negative		Count	5	36	11	11	241	37	341	
		% within Economic status of random adult	1.3%	1.4%	1.5%	3.1%	13.9%	8.8%	5.5%	
Total		Count	375	2553	718	350	1735	420	6151	
		% within Economic status of random adult	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Total		Gen hlth new	Positive	Count	523	3073	906	369	1335	315
	% within Economic status of random adult			83.3%	86.5%	84.8%	74.7%	56.3%	60.5%	75.5%
	Neutral		Count	98	438	150	108	762	164	1720
		% within Economic status of random adult	15.6%	12.3%	14.0%	21.9%	32.2%	31.5%	19.9%	
	Negative	Count	7	43	12	17	273	42	394	
		% within Economic status of random adult	1.1%	1.2%	1.1%	3.4%	11.5%	8.1%	4.6%	
Total	Count	628	3554	1068	494	2370	521	8635		

Symmetric Measures

Whether involved in any voluntary activity in past 12 months (derived)			Value	Approximate Significance
Yes	Nominal by Nominal	Phi	.213	.000
		Cramer's V	.151	.000
	N of Valid Cases		2484	
No	Nominal by Nominal	Phi	.371	.000
		Cramer's V	.262	.000
	N of Valid Cases		6151	
Total	Nominal by Nominal	Phi	.331	.000
		Cramer's V	.234	.000
	N of Valid Cases		8635	

9.5.2 Volunteering, Health and Household Income

2016

Whether involved in any voluntary activity in past 12 months (derived)			Rebanded annual net household income								Total
			£0 - £6000	£6001 - £10000	£10001 - £15000	£15001 - £20000	£20001 - £25000	£25001 - £30000	£30001 - £40000	£40001+	
Yes	Gen Health New	Positive	75.0%	64.9%	71.4%	77.0%	79.0%	72.4%	79.4%	87.9%	79.7%
		Neutral	14.6%	29.0%	22.4%	18.5%	17.7%	24.5%	16.9%	11.0%	17.0%
		Negative	10.4%	6.1%	6.3%	4.4%	3.3%	3.1%	3.7%	1.0%	3.2%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
No	Gen Health New	Positive	61.0%	54.9%	56.1%	64.5%	64.7%	75.1%	79.2%	88.6%	71.0%
		Neutral	27.5%	28.7%	26.9%	23.0%	23.1%	17.1%	15.7%	10.3%	19.7%
		Negative	11.5%	16.4%	17.0%	12.5%	12.2%	7.7%	5.1%	1.1%	9.3%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	Gen Health New	Positive	63.9%	56.9%	59.2%	67.0%	68.4%	74.4%	79.3%	88.3%	73.4%
		Neutral	24.8%	28.8%	26.0%	22.1%	21.7%	19.0%	16.0%	10.6%	18.9%
		Negative	11.3%	14.3%	14.8%	10.9%	9.9%	6.5%	4.7%	1.1%	7.7%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Symmetric Measures

Whether involved in any voluntary activity in past 12 months (derived)			Value	Approximate Significance
Yes	Nominal by Nominal	Phi	.189	.000
		Cramer's V	.134	.000
	N of Valid Cases		2557	
No	Nominal by Nominal	Phi	.274	.000
		Cramer's V	.194	.000
	N of Valid Cases		6754	
Total	Nominal by Nominal	Phi	.258	.000
		Cramer's V	.182	.000
	N of Valid Cases		9311	

2014

Whether involved in any voluntary activity in past 12 months (derived)			Rebanded annual net household income							Total	
			£0 - £6000	£6001 - £10000	£10001 - £15000	£15001 - £20000	£20001 - £25000	£25001 - £30000	£30001 - £40000		£40001+
Yes	genhlthnew	Positive	78.7%	69.8%	67.2%	74.1%	77.6%	78.8%	83.5%	89.1%	80.3%
		Neutral	19.7%	25.5%	26.6%	22.3%	19.4%	18.1%	13.9%	9.4%	16.7%
		Negative	1.6%	4.7%	6.3%	3.7%	3.0%	3.1%	2.6%	1.5%	3.0%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
No	genhlthnew	Positive	70.6%	59.5%	57.6%	63.8%	71.4%	80.2%	82.3%	88.9%	72.7%
		Neutral	21.3%	26.8%	28.3%	24.6%	22.0%	14.6%	13.3%	10.0%	19.5%
		Negative	8.1%	13.7%	14.1%	11.6%	6.7%	5.2%	4.4%	1.2%	7.8%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	genhlthnew	Positive	72.4%	61.6%	59.4%	66.3%	72.8%	79.9%	82.7%	88.9%	74.8%
		Neutral	21.0%	26.5%	28.0%	24.1%	21.4%	15.5%	13.5%	9.7%	18.8%
		Negative	6.6%	11.9%	12.6%	9.7%	5.8%	4.6%	3.8%	1.3%	6.5%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Symmetric Measures

Whether involved in any voluntary activity in past 12 months (derived)		Value	Approximate Significance	
Yes	Nominal by Nominal	Phi	.190	.000
		Cramer's V	.134	.000
		N of Valid Cases	2582	
No	Nominal by Nominal	Phi	.267	.000
		Cramer's V	.188	.000
		N of Valid Cases	6947	
Total	Nominal by Nominal	Phi	.255	.000
		Cramer's V	.180	.000
		N of Valid Cases	9529	