SocStats

The Scout Association: Pilot impact survey analysis for the UK

August 2017

Content

Executive Summary

Research aim

The aim of the present research study is to assess the impact scouting has on the 14 outcomes below in teens aged 14-17, using UK pilot survey data from 2489 teens.

1. Physical Activity	8. Diversity
2. Life Skills and Employability	9. Belonging
3. Curious about the world	10. Active Citizenship
4. Pro-Environmental	11. Spiritual and Self Reflection
5. Leadership	12. Resilience
6. Problem Solving	13. Responsibility and trustworthiness
7. Emotionally Intelligent	14. Team work

Findings

- The results show that there are small statistically significant positive differences between scouts and non-scouts on all 14 outcomes in the UK.

1. Scouts score **32.2% higher on Physical Activity** than non-scouts
2. Scouts score **19.5% higher on Life Skills and Employability** than non-scouts
3. Scouts score **18.1% higher on Curious about the world** than non-scouts
4. Scouts score **16.1% higher on Pro-Environmental** than non-scouts
5. Scouts score **17.0% higher on Leadership** than non-scouts
6. Scouts score **10.5% higher on Problem Solving** than non-scouts
7. Scouts score **19.4% higher on Emotionally Intelligent** than non-scouts
8. Scouts score **12.4% higher on Diversity** than non-scouts
9. Scouts score **17.3% higher on Belonging** than non-scouts
10. Scouts score **29.1% higher on Active Citizenship** than non-scouts
11. Scouts score **4.2% higher on Spiritual and Self Reflection** than non-scouts[1]
12. Scouts score **13.3% higher on Resilience** than non-scouts
13. Scouts score **15.6% higher on Responsibility and trustworthiness** than non-scouts
14. Scouts score **17.2% higher on Team work** than non-scouts

- However, due to the methodology used, the current study cannot sufficiently determine to what extent these differences can be attributed to scouting, as opposed to other influencers.
- English scouts score significantly lower on Curious about the world, Pro-Environmental, Diversity, Belonging, Active Citizenship and Team work than Scottish scouts. Scottish scouts score significantly higher on Team work than Welsh scouts. English scouts score significantly lower on Problem Solving and "I now feel capable of more than I realised" (Resilience) than Welsh scouts.
- Scouts' gender has a mixed but small influence on the measured outcomes. Female scouts score more highly on two thirds of the outcomes (Life Skills and Employability, Curious about the world, Pro-Environmental, Diversity, Active Citizenship, Responsibility

[1] This outcome involves statements such as "I don't have a religious faith" for which answers would neither be positive nor negative. The result is thus not necessarily negative and should be interpreted simply as scouts being slightly less spiritual/self-reflective.

and trustworthiness, and Satisfaction with scouting), and male scouts score more highly on the other third (Physical Activity, Emotionally Intelligent, Belonging, and Resilience).

- The frequency of engagement in scouting activities is to a small degree associated with better outcomes.
- The length of period of engagement in scouting is only marginally associated with better outcomes.
- Involvement in other extra-curricular group activities only account for increased outcomes to a small extent across both scouts and non-scouts, but since scouts' and non-scouts' involvement in these group activities are roughly equal, this variable does not discount the positive outcome differences between scouts and non-scouts.

Figure 1. Significant outcome differences between scouts and non-scouts

Recommendations

Future research should address the following:

- **Causality:** In order to assess to what extent the observed outcome differences have been *caused* by scouting as opposed to other influencers, a more informed and better methodology should be used to ensure that the scouts sample and the non-scout comparison groups are as comparable as possible on all potentially influential variables. This means **gathering more contextual data for both scouts and non-scouts** (e.g. baseline data and socio-economic status) and **better matching the scout and non-scout groups** according to this information.
- **Survey:** It should be ensured that the survey is a reliable measurement tool by tightening the outcomes and their related questions to accurately measure the concepts most important to the goals of scouting. Also actions to **reduce data waste** through missing data should be taken by **piloting the survey before launch** to avoid survey errors affecting large sections of the dataset, and **making answers to key survey questions compulsory** to avoid having to exclude large numbers of patchy data entries.

- **Sample size:** The numbers of participants in this research was reasonably sufficient for most analyses (countries, conditions, and gender) but not for others (ethnicity and faith) where **low sample sizes in some or most subgroups meant that no meaningful analyses across all relevant data could be made**. This can be remedied either by collecting more data or by ensuring enough data is collected for all subgroups that will be analysed. Also, **once more contextual data is available** (as encourage above)**, sample sizes may need to increase** to ensure there will be enough statistical power for robust findings. Reducing data waste however can mean cost savings as sample sizes may need to increase considerably less.
- **More exact research questions:** Ensure that each research question specifies sufficiently what information is needed from the data – e.g. the country comparison question does not currently specify whether to look at scouts only or both scouts and non-scouts, and the period of engagement and frequency of engagement questions ask for associations rather than causal links.

Research methodology

Research aim

The aim of the present research study is to assess the impact scouting has on the following outcomes in UK teens aged 14-17:

1. Physical Activity	8. Diversity
2. Life Skills and Employability	9. Belonging
3. Curious about the world	10. Active Citizenship
4. Pro-Environmental	11. Spiritual and Self Reflection
5. Leadership	12. Resilience
6. Problem Solving	13. Responsibility and trustworthiness
7. Emotionally Intelligent	14. Team work

Table 1. Research questions

Importance	Research question
Primary	Do scouts experience improvements in the 14 impact outcomes, compared to non-scouts?
Secondary	1. Length of time: Are longer periods of engagement in scouting associated with better outcomes and satisfaction?
	2. Activities taken part (frequency): Is scout engagement in more activities associated with better outcomes and satisfaction?
	3. Gender: Is there a difference in outcomes and satisfaction between male and female scouts?
	4. Location: Is there a difference in outcomes and satisfaction between the countries of the UK?
	5. Participation: To what extent do other extra-curricular group activities account for differences in outcomes and satisfaction?
	6. Participation: Do Scouts participate in other extra-curricular group activities more than non-Scouts?
Tertiary*	7. Disability: Is there a difference in outcomes and satisfaction between scouts with and without a disability?
	8. Ethnicity: Is there a difference in outcomes and satisfaction between different ethnicities?
	9. Faith: Is there a difference in outcomes and satisfaction between different faiths?

*The subgroups are expected to be too small for meaningful comparisons, but where possible, these comparisons will be conducted.

In addition, the following descriptive cuts and separate survey questions are examined:

- How satisfied are Scouts with their Scouting overall, and does demographic, period of engagement, the frequency of scouting activities undertaken affect satisfaction?
- To what extent do Scouts believe their views "have influenced decisions in Scouting locally" and that they "got the chance to develop skills which will be useful to them in the future", and does demographic, period of engagement in scouting, and the frequency of scouting activities undertaken affect these two questions?
- What activities do Scouts participate in, to what frequency, and does demographic and period of engagement in scouting affect these figures?

- ❖ Does being a "Young Leader" affect the participation, satisfaction or impact on the young person?
- ❖ How much do Scouts volunteer compared to non-Scouts, and is this affected by demographic or location?

Data collection

The data on the above impact outcomes as well as contextual/demographic data has been collected using an 81-item survey.

Additional data gathered:

- Demographics: Age, gender, location (country and region), ethnicity, faith (data only available for scouts), disability (data only available for scouts), and condition (scouts vs non-scouts)
- Level of participation in other extra-curricular group activities
- Frequency of participation in scouting activities (data applicable only for scouts)
- Length of time engaged in scouting (data applicable only for scouts)
- Satisfaction with scouting (data applicable only for scouts)
- Number of hours volunteered in the past 12 months
- Participation in the Young Leader scheme in scouting (data applicable only for scouts)

Data was collected from 3971 scouts and 403 non-scouts. The non-scouts are to serve as a comparison group of relevant teens who have never participated in scouting.

Data was collected only at one time point – no baseline or follow-up data is available at this point.

Data analysis

Inclusion/exclusion criteria

Data with the following criteria was excluded from the analysis:

- ❖ Respondents outside the 14-17 years age bracket (affects 126 cases)
- ❖ Respondents who have failed to respond to at least one of the core 14 outcome questions (affects 1618 cases). Complete responses are crucial to calculate accurate scores for each outcome and respondent.
- ❖ Duplicates, or respondents who appear twice in the dataset, and test surveys conducted by scouts staff (affects 160 cases)
- ❖ UK respondents who selected the "scouting overseas" option in UK Q3 (affects 17 cases), as the UK's Scouting Association has little influence on overseas scouts
- ❖ Respondents claiming over 1040 volunteering hours per year, an informed guestimate cut-off of what is realistic (affects 16 cases)

In addition, the non-scouts were asked about any involvement with scouting. None reported any such involvement, and thus none had to be excluded from the analysis.

Following these exclusions, the remaining dataset includes 2489 valid cases.

Weighting

No weighting of the data was applied as the current sample statistics on gender and location (the available variables for comparison with the wider scouting population aged 14-17) was reasonably similar to those of the population (census data).

Table 2. Sample vs population comparison for gender and location

Demographic	Sample		Population	
Gender	**%**	**n**	**%**	**n**
Male	59.6%	1244	69.6%	33570
Female	39.0%	814	30.4%	14673
Location	**%**	**n**	**%**	**n**
England	85.5%	1784	86.2%	41578
Northern Ireland	2.5%	53	2.1%	1033
Scotland	8.2%	170	8.8%	4255
Wales	3.8%	79	2.9%	1377

Analysis methods

- **Multiple regression:** For variables with data for both scouts and non-scouts, multiple regressions were conducted to understand the individual influence of each predictor on the 14 impact outcomes as well as the volunteering hours outcome and to what extent these influences are statistically significant. Also, in order to examine the influence of extra-curricular group activity on Satisfaction with scouting, a separate multiple regression was conducted using only scouts data.
- **ANOVA:** To investigate country differences in the Satisfaction with scouting outcome, an ANOVA was conducted (control data not applicable) since it involves the comparison of averages in more than two groups (i.e. four countries of the UK).
- **Independent t-test:** To investigate group differences between only two groups, independent t-tests were conducted on two occasions. They were conducted to investigate the significance of differences between scouts and non-scouts, between male and female scouts, between scouts' and non-scouts' level of engagement in extra-curricular group activities (other than scouting), between scouts with and without disability, and between non-religious and Christian scouts (other faith groups' sample sizes are too small).
- **Bivariate correlation:** To investigate associations between two variables, bivariate correlations were conducted on two occasions. The first was to investigate associations between scout outcomes and the length of engagement in scouting, and the second to investigate associations between scout outcomes and the frequency of engagement in scouting.

Research limitations

- **Suitability of comparison group:** It is unclear how comparable a match the non-scouts group are to the scouts due to the lack of data available to assess the similarity of the two groups. For instance, socio-economic status could be an important matching variable, faith and disability data was not for the control group. Also, future matched comparison groups should follow clearer and more rigorous matching procedures to

ensure the scouts and non-scouts are as comparable as possible. At this stage, it remains relatively unclear to what extent any differences between scouts and non-scouts can be attributed solely to scouting (as opposed to other influencers), but a high-quality comparison group will be capable to make such attribution claims.

- **No baseline or follow-up available:** The current data represents a snapshot into a sample of scouts and non-scouts. No baseline data (data collected before a young person gets involved in scouting) or follow-up data (data collected from the same individuals at a later point in time) was collected to date using the current survey. Baseline data can play a crucial role in identifying what outcome changes can be attributed to scouting (as opposed to other influencers) because it captures the teens' individual differences before exposure to scouting which can then be accounted for in the analyses.
- **Missing data:** Firstly, a large proportion of respondents (37.0% of the original total sample of 4374) were excluded because they did not answer all questions relating to the 14 core outcomes. Some of this can be avoided by making all important questions compulsory to answer in online surveys. Secondly, additional data is missing on other variables. For instance, for Scouting activities, a technical error in the UK survey rendering much of the data invalid forced the UK Scouting Association to re-survey their scouts about this one question, and while a substantial number responded, data is missing for those who chose not to respond. This and other causes for missing data on other variables causes sample size to be smaller for the relevant analyses, and consequently reduces the robustness of the findings.

Results

Demographics and descriptive cuts of the sample

A total of 2086 scouts and 403 non-scouts have provided valid data. A considerably larger percentage of the scouts are male (59.6%) compared with the non-scouts (35.7%). Also, while both scouts and non-scouts are overwhelmingly from a White ethnic background, this is more extreme among the scouts (96.8% compared with 74.4% of non-scouts). No data is available on faith for non-scouts, but among scouts, the clear majority either claim no religion (56.3%) or Christianity (40.9%). Again, no data is available on disability for non-scouts, but among scouts, 14.2% report having a disability. In terms of location, the vast majority of both scouts and non-scouts are located in England (85.5% and 88.8% respectively), among whom the largest proportion comes from the South East (21.1%). Among scouts, there are slightly more respondents located in Northern Ireland (2.5% compared with 1.7% of non-scouts) and Scotland (8.2% compared with 4.0% of non-scouts), but slightly fewer in Wales (3.8% compared with 5.5% of non-scouts).

Table 3. Sample demographics

Demographic	**Scouts**		**Non-scouts**	
Gender	**%**	**n**	**%**	**n**
Male	59.6%	1244	35.7%	144
Female	39.0%	814	64.3%	259
Other	1.3%	28	0.0%	0
Ethnicity	**%**	**n**	**%**	**n**
White (including English, Welsh, Scottish, Northern Irish, Gypsy or Irish Traveller or any other White background)	96.8%	2019	74.4%	300
Black (Including Black British, African, Caribbean and any other Black background)	0.2%	5	8.7%	35
Asian (Including Asian British, Pakistani, Bangladeshi, Chinese and any other Asian background)	0.9%	18	9.7%	39
Mixed (Including White and Black Caribbean, White and Black African, White and Asian, any other Mixed or Multiple ethnic groups)	1.6%	33	4.7%	19
Other ethnic group (Including Arab and any other ethnic group)	0.5%	11	2.5%	10
Faith	**%**	**n**	**%**	**n**
No religion	56.3%	1175	No data available	
Christian	40.9%	853		
Buddhist	0.3%	7		
Hindu	0.2%	5		
Jewish	0.4%	8		
Muslim	0.3%	7		
Sikh	0.1%	2		
Any other religion	1.4%	29		
Disability	**%**	**n**	**%**	**n**
With disability	14.2%	296	No data available	
Without disability	85.8%	1790		

Location	%	n	%	n
England	85.5%	1784	88.8%	358
East Midlands	7.0%	145	8.2%	33
East of England	12.1%	252	11.7%	47
Greater London	7.2%	150	21.3%	86
North East	9.9%	207	6.7%	27
North West	8.9%	185	10.9%	44
South East	21.1%	441	9.7%	39
South West	10.4%	216	12.7%	51
West Midlands	9.0%	188	7.7%	31
Northern Ireland	2.5%	53	1.7%	7
Scotland	8.2%	170	4.0%	16
Wales	3.8%	79	5.5%	22
Total sample sizes		**2086**		**403**

Age

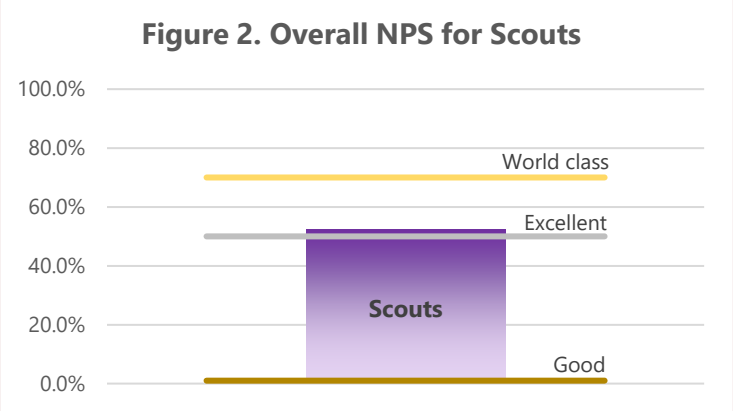
All respondents are between 14 and 17 years old. Since the UK non-scouts dataset did not collect specific age data, it is not possible to describe the age distribution across the whole sample.

Satisfaction with scouting: Net Promoter Score (NPS)

Using just the relevant 'How likely are you to recommend Scouting to a friend?' question from the Satisfaction with scouting questions, the Net Promoter Score (NPS) can be calculated[2] using data from all 2057 respondents to this question. This produces an NPS of 52.3% – a score that is not just positive, but is classed as Excellent (scores above +50 but below +70).

NPS Component	Number of respondents	Percentage
Detractors (scores 0-6)	214	10.4%
Passives (scores 7-8)	554	26.9%
Promoters (scores 9-10)	1,289	62.7%
Net promoter score		52.3%

The NPS varies by demographic[3] (gender, faith, disability, country), period of engagement in scouting, and frequency of engagement in scouting. The figures below are exploratory only at this stage (i.e. they have not been tested for statistical significance) and should be used as guidance rather than hard evidence. Also, the findings from the regression in Table 24 suggest that disability and location are not significant predictors for Satisfaction with scouting, but since the NPS only uses data from one of the four



[2] For further information about the NPS, go to https://www.netpromoter.com/know/

[3] Ethnicity is excluded due to very small sample sizes for all but one group, Other Gender is excluded due to a very small sample size, and for faith only Christian and No religion samples are considered large enough to be meaningfully reported on here.

Satisfaction with scouting questions, this comparison serves merely as a warning to view the location and disability subgroup differences with caution.

Variable	Subgroup (n)	Detractors	Promoters	NPS
Gender	Male (1226)	12.3%	58.0%	**45.7%**
	Female (804)	7.5%	69.8%	**62.3%**
Faith	No religion (1159)	11.6%	59.3%	**47.7%**
	Christian (842)	9.1%	67.0%	**57.9%**
Disability	With disability (294)	7.5%	69.0%	**61.5%**
	Without disability (1763)	10.9%	61.2%	**50.3%**
Location	England (1761)	10.6%	63.0%	**52.4%**
	Northern Ireland (53)	11.3%	66.0%	**54.7%**
	Scotland (165)	7.9%	61.2%	**53.3%**
	Wales (78)	11.5%	62.8%	**51.3%**
Period of engagement in scouting	Short: 0-4 years (342)	10.5%	61.7%	**51.2%**
	Medium: 5-8 years (641)	12.5%	60.5%	**48.0%**
	Long: 9-12 years (1074)	9.1%	64.2%	**55.1%**
Frequency of engagement in scouting	0-24 activities per year (133)	15.0%	46.6%	**31.6%**
	25-72 activities per year (1064)	10.4%	63.0%	**52.6%**
	73+ activities per year (185)	5.4%	81.1%	**75.7%**

NPS scores above 70 are classed as 'World class', scores above 50 as 'Excellent', and scores above 0 as 'Good', n = sample size

Satisfaction with scouting: My views have influenced decisions in Scouting locally

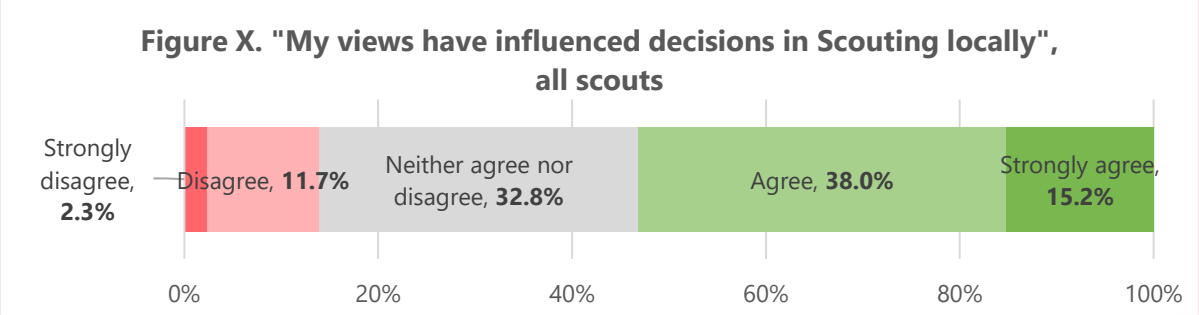
The results for this question varies by demographic[4] (gender, faith, disability, country), period of engagement in scouting, and frequency of engagement in scouting. Again, the figures are exploratory only at this stage (i.e. they have not been tested for statistical significance) and should be used as guidance rather than hard evidence. As above, the findings from the regression in Table 24 suggest that disability and location are not significant predictors for Satisfaction with scouting, but since the table below only uses data from one of the four Satisfaction with scouting questions, this comparison serves merely as a warning to view the location and disability subgroup differences with caution.

Variable	Subgroup (n)	Average score	% agree or strongly agree	% disagree or strongly disagree
All scouts	All scouts (908)	2.52	**53.2%**	14.0%
Gender	Male (531)	2.56	**55.9%**	13.9%
	Female (366)	2.47	**49.2%**	13.9%
Faith	No religion (505)	2.50	**51.1%**	14.1%
	Christian (382)	2.55	**55.8%**	13.6%
Disability	With disability (125)	2.44	**50.4%**	17.6%
	Without disability (783)	2.53	**53.6%**	13.4%
Location	England (782)	2.51	**53.1%**	13.9%
	Scotland (74)	2.47	**48.6%**	16.2%
Period of engagement in scouting	Short: 0-4 years (143)	2.24	**36.4%**	17.5%
	Medium: 5-8 years (273)	2.49	**50.2%**	13.6%
	Long: 9-12 years (492)	2.62	**59.8%**	13.2%

[4] Ethnicity is excluded due to very small sample sizes for all but one group, Other Gender is excluded due to a very small sample size, Northern Ireland and Wales are excluded from location due to small sample sizes, and for faith only Christian and No religion samples are considered large enough to be meaningfully reported on here.

Frequency of engagement in scouting	0-24 activities per year (67)	1.84	**26.9%**	34.3%
	25-72 activities per year (700)	2.50	**51.4%**	13.3%
	73+ activities per year (141)	2.96	**74.5%**	7.8%

n = sample size, outcome scale ranging from 0 to 4, with 4 being the most positive



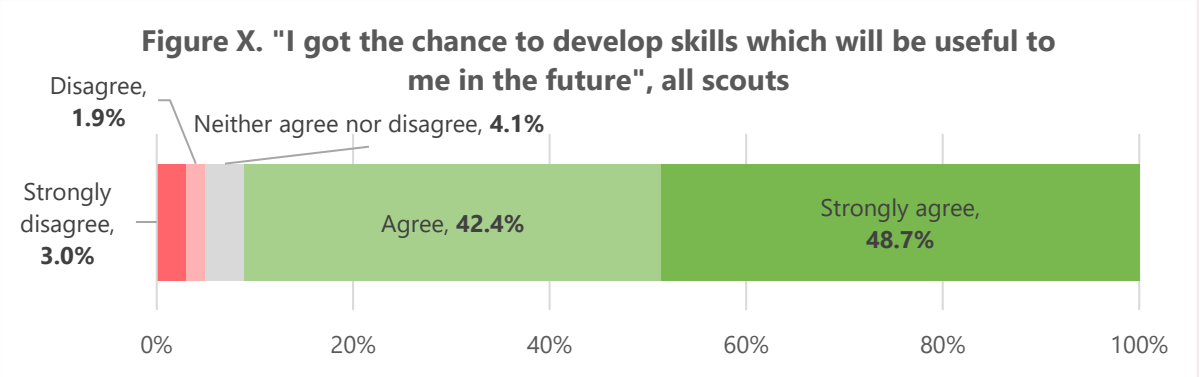
Life Skills and Employability: I got the chance to develop skills which will be useful to me in the future

The results for this question varies by demographic[5] (gender, faith, disability, country), period of engagement in scouting, and frequency of engagement in scouting. Again, the figures are exploratory only at this stage (i.e. they have not been tested for statistical significance) and should be used as guidance rather than hard evidence. Also, the findings from the regression in Table 7 suggest that location and female gender are not significant predictors for Life Skills and Employability, but since the table below only uses data from one of the five Life Skills and Employability questions, this comparison serves merely as a warning to view the location and gender subgroup differences with caution.

Variable	Subgroup (n)	Average score	% agree or strongly agree	% disagree or strongly disagree
All scouts	All scouts (1383)	3.32	**91.0%**	4.9%
Gender	Male (827)	3.30	**91.1%**	5.3%
	Female (535)	3.35	**91.4%**	4.3%
Faith	No religion (781)	3.27	**90.4%**	5.4%
	Christian (569)	3.37	**91.7%**	4.6%
Disability	With disability (186)	3.28	**89.8%**	4.8%
	Without disability (1197)	3.32	**91.2%**	4.9%
Location	England (1187)	3.33	**91.5%**	4.5%
	Scotland (117)	3.15	**84.6%**	9.4%
	Wales (52)	3.35	**92.3%**	7.7%
Period of engagement in scouting	Short: 0-4 years (221)	3.25	**91.0%**	4.5%
	Medium: 5-8 years (438)	3.27	**89.7%**	5.7%
	Long: 9-12 years (724)	3.37	**91.9%**	4.6%
Frequency of engagement in scouting	0-24 activities per year (130)	3.04	**86.9%**	6.9%
	25-72 activities per year (1069)	3.32	**91.2%**	4.7%
	73+ activities per year (184)	3.47	**92.9%**	4.9%

n = sample size, outcome scale ranging from 0 to 4, with 4 being the most positive

[5] Ethnicity is excluded due to very small sample sizes for all but one group, Other Gender is excluded due to a very small sample size, Northern Ireland is excluded from location due to a small sample size, and for faith only Christian and No religion samples are considered large enough to be meaningfully reported on here.



How often in the last twelve months have you taken part in the following activities through Scouting?

Working in teams, outdoor/adventurous activities, and camping draw the largest proportions of scouts. Similarly, the most frequent activities per scout per year are working in teams, outdoor/adventurous activities, and making decisions and taking leadership roles. Again, the figures are exploratory only at this stage (i.e. they have not been tested for statistical significance) and should be used as guidance rather than hard evidence. Camping has a higher missing data rate due to an erroneous omission of the activity in some of the surveys. Generally, the missing data rates are quite high and therefore somewhat reduce the robustness of the figures. The relative figures in bold do not include the scouts with missing data, but unlike the other figures, they are directly comparable across type of activity.

Type of activity	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*	Missing data of 2086 scouts
Camping	877	**96.5%**	4,416	**5.0**	56.4%
International Scouting experience	735	**52.6%**	1,455	**2.0**	33.0%
Outdoor/ adventurous activities	1,383	**99.0%**	12,269	**8.9**	33.0%
Helping others in your local community	1,279	**91.8%**	6,713	**5.2**	33.2%
Badge work	1,208	**86.3%**	7,973	**6.6**	32.9%
Reflection on your own attitudes, faith or beliefs	1,012	**72.3%**	3,843	**3.8**	32.9%
Spending time with people from backgrounds that are different from my own	1,204	**86.4%**	8,267	**6.9**	33.2%
Working in teams	1,391	**99.6%**	14,902	**10.7**	33.0%
Making decisions and taking leadership roles	1,339	**95.7%**	11,167	**8.3**	32.9%

*including only scouts that have participated in the activity

Figure X. Percentage of scouts participated in activity

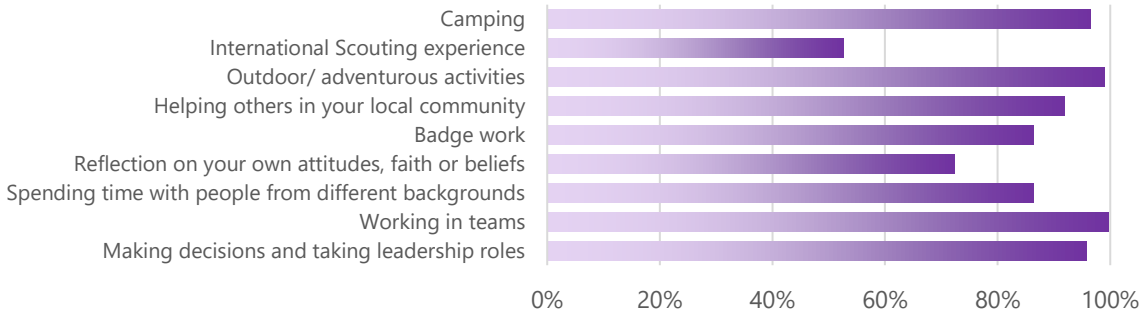


Figure X. Average no of activity participations per scout per year

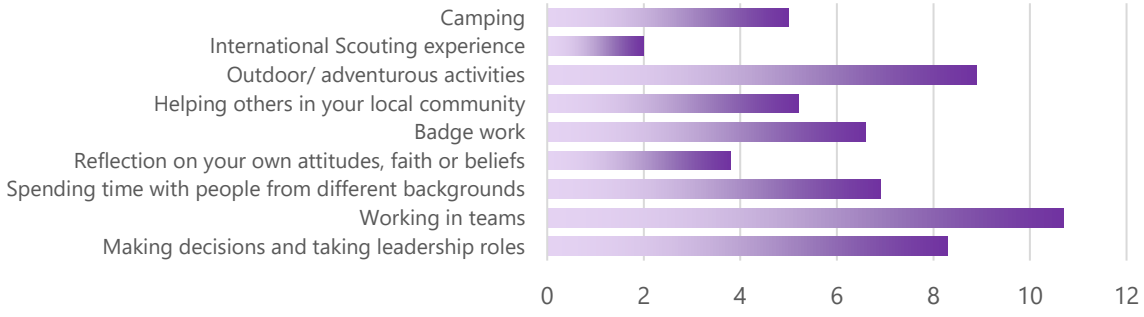
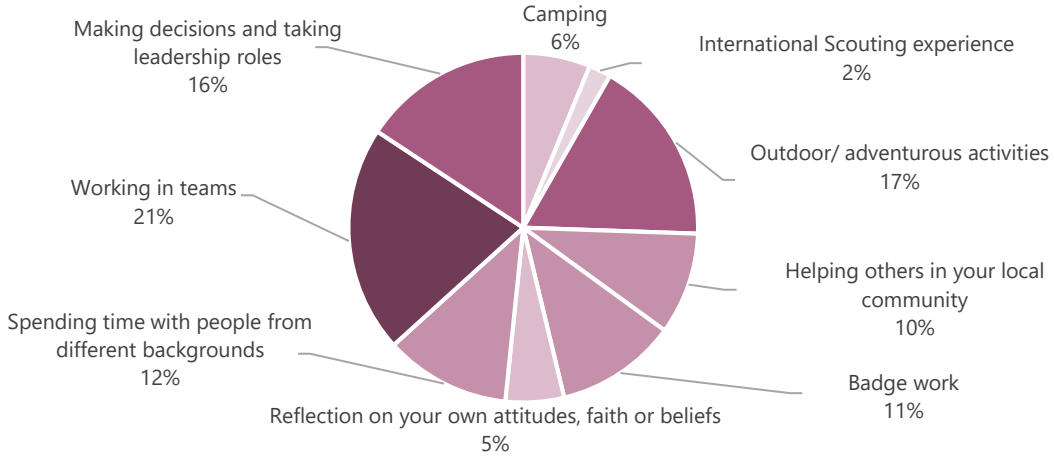


Figure X. Total frequency of activity per year



The results for vary by demographic (gender, faith, disability, country), and period of engagement in scouting. Wales and Northern Ireland are excluded for some of the below tables due to sample sizes too small to produce reliable figures.

Camping

All subgroups participate in camping to similar degrees. However, scouts with short periods of engagement in scouting participate least frequently, and Scottish scouts participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (909)	877	**96.5%**	4,416	**5.0**
Gender	Male (529)	513	**97.0%**	2,663	**5.2**
	Female (369)	353	**95.7%**	1,695	**4.8**
Faith	No religion (507)	486	**95.9%**	2,527	**5.2**
	Christian (380)	370	**97.4%**	1,778	**4.8**
Disability	With disability (124)	120	**96.8%**	658	**5.5**
	Without disability (785)	757	**96.4%**	3,758	**5.0**
Location	England (783)	756	**96.6%**	3,708	**4.9**
	Scotland (75)	73	**97.3%**	457	**6.3**
Period of engagement in scouting	Short: 0-4 years (144)	134	**93.1%**	522	**3.9**
	Medium: 5-8 years (274)	268	**97.8%**	1,265	**4.7**
	Long: 9-12 years (491)	475	**96.7%**	2,629	**5.5**

*including only scouts that have participated in the activity, n = sample size

International Scouting experience

All subgroups participate in international scouting experience to similar degrees. While Welsh scouts appear to participate most frequently, the result is not reliable due to the very small sample size.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1397)	735	**52.6%**	1,455	**2.0**
Gender	Male (839)	445	**53.0%**	828	**1.9**
	Female (537)	278	**51.8%**	600	**2.2**
Faith	No religion (790)	422	**53.4%**	813	**1.9**
	Christian (574)	294	**51.2%**	592	**2.0**
Disability	With disability (189)	109	**57.7%**	251	**2.3**
	Without disability (1208)	626	**51.8%**	1,204	**1.9**
Location	England (1199)	610	**50.9%**	1,183	**1.9**
	Scotland (119)	77	**64.7%**	163	**2.1**
	Wales (53)	30	**56.6%**	75	**2.5**
Period of engagement in scouting	Short: 0-4 years (225)	82	**36.4%**	187	**2.3**
	Medium: 5-8 years (443)	232	**52.4%**	489	**2.1**
	Long: 9-12 years (729)	421	**57.8%**	779	**1.9**

*including only scouts that have participated in the activity, n = sample size

Outdoor/adventurous activities

All subgroups participate in outdoor/adventurous activities to similar degrees. However, Welsh scouts participate least frequently, and Christian scouts and scouts with long periods of engagement in scouting participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1397)	1,383	**99.0%**	12,269	**8.9**
Gender	Male (839)	830	**98.9%**	7,335	**8.8**
	Female (536)	531	**99.1%**	4,784	**9.0**
Faith	No religion (790)	785	**99.4%**	6,801	**8.7**
	Christian (573)	564	**98.4%**	5,137	**9.1**
Disability	With disability (189)	188	**99.5%**	1,572	**8.4**
	Without disability (1208)	1195	**98.9%**	10,697	**9.0**
Location	England (1198)	1,186	**99.0%**	10,663	**9.0**
	Scotland (119)	118	**99.2%**	982	**8.3**
	Wales (53)	53	**100.0%**	430	**8.1**
Period of engagement in scouting	Short: 0-4 years (224)	220	**98.2%**	1,907	**8.7**
	Medium: 5-8 years (443)	441	**99.5%**	3,756	**8.5**
	Long: 9-12 years (730)	722	**98.9%**	6,606	**9.1**

*including only scouts that have participated in the activity, n = sample size

Helping others in your local community

All subgroups participate in helping others in your local community to similar degrees. However, Welsh scouts participate least frequently, and scouts with a disability and Scottish scouts participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1393)	1,279	**91.8%**	6,713	**5.2**
Gender	Male (837)	778	**93.0%**	3,982	**5.1**
	Female (535)	483	**90.3%**	2,610	**5.4**
Faith	No religion (787)	728	**92.5%**	3,823	**5.3**
	Christian (573)	521	**90.9%**	2,725	**5.2**
Disability	With disability (187)	171	**91.4%**	973	**5.7**
	Without disability (1206)	1,108	**91.9%**	5,740	**5.2**
Location	England (1194)	1,093	**91.5%**	5,705	**5.2**
	Scotland (119)	111	**93.3%**	634	**5.7**
	Wales (53)	52	**98.1%**	226	**4.3**
Period of engagement in scouting	Short: 0-4 years (224)	188	**83.9%**	948	**5.0**
	Medium: 5-8 years (442)	408	**92.3%**	2,089	**5.1**
	Long: 9-12 years (727)	683	**93.4%**	3,676	**5.4**

*including only scouts that have participated in the activity, n = sample size

Badge work

All subgroups participate in badge work to similar degrees. However, scouts with a short period of engagement in scouting participate least frequently, and Scottish scouts participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1399)	1,208	**86.3%**	7,973	**6.6**
Gender	Male (841)	738	**87.8%**	4,845	**6.6**
	Female (537)	453	**84.4%**	3,009	**6.6**
Faith	No religion (791)	674	**85.2%**	4,444	**6.6**
	Christian (575)	508	**88.3%**	3,396	**6.7**
Disability	With disability (188)	162	**86.2%**	1,152	**7.1**
	Without disability (1211)	1,046	**86.4%**	6,821	**6.5**
Location	England (1200)	1,033	**86.1%**	6,609	**6.4**
	Scotland (119)	108	**90.8%**	909	**8.4**
	Wales (53)	45	**84.9%**	300	**6.7**
Period of engagement in scouting	Short: 0-4 years (224)	168	**75.0%**	995	**5.9**
	Medium: 5-8 years (444)	389	**87.6%**	2,576	**6.6**
	Long: 9-12 years (731)	651	**89.1%**	4,402	**6.8**

*including only scouts that have participated in the activity, n = sample size

Reflection on your own attitudes, faith or beliefs

All subgroups participate in reflection on your own attitudes, faith or beliefs to similar degrees. However, scouts with a long period of engagement in scouting participate least frequently, and scouts with a disability participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1399)	1,012	**72.3%**	3,843	**3.8**
Gender	Male (841)	601	**71.5%**	2,190	**3.6**
	Female (537)	396	**73.7%**	1,582	**4.0**
Faith	No religion (790)	553	**70.0%**	1,934	**3.5**
	Christian (576)	436	**75.7%**	1,785	**4.1**
Disability	With disability (189)	139	**73.5%**	633	**4.6**
	Without disability (1210)	873	**72.1%**	3,210	**3.7**
Location	England (1200)	856	**71.3%**	3,188	**3.7**
	Scotland (119)	99	**83.2%**	402	**4.1**
	Wales (53)	41	**77.4%**	158	**3.9**
Period of engagement in scouting	Short: 0-4 years (225)	157	**69.8%**	602	**3.8**
	Medium: 5-8 years (444)	314	**70.7%**	1,232	**3.9**
	Long: 9-12 years (730)	541	**74.1%**	2,009	**2.8**

*including only scouts that have participated in the activity, n = sample size

Spending time with people from backgrounds that are different from my own

All subgroups participate in spending time with people from different backgrounds to similar degrees. However, scouts with a disability participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1394)	1,204	**86.4%**	8,267	**6.9**
Gender	Male (837)	714	**85.3%**	4,777	**6.7**
	Female (536)	471	**87.9%**	3,328	**7.1**
Faith	No religion (788)	673	**85.4%**	4,641	**6.9**
	Christian (573)	502	**87.6%**	3,379	**6.7**
Disability	With disability (188)	161	**85.6%**	1,233	**7.7**
	Without disability (1206)	1,043	**86.5%**	7,034	**6.7**
Location	England (1195)	1,031	**86.3%**	7,047	**6.8**
	Scotland (119)	103	**86.6%**	739	**7.2**
	Wales (53)	47	**88.7%**	334	**7.1**
Period of engagement in scouting	Short: 0-4 years (224)	196	**87.5%**	1,409	**7.2**
	Medium: 5-8 years (441)	361	**81.9%**	2,415	**6.7**
	Long: 9-12 years (729)	647	**88.8%**	4,443	**6.9**

*including only scouts that have participated in the activity, n = sample size

Working in teams

All subgroups participate in working in teams to very similar degrees.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1397)	1,391	**99.6%**	14,902	**10.7**
Gender	Male (839)	835	**99.5%**	8,875	**10.6**
	Female (537)	535	**99.6%**	5,820	**10.9**
Faith	No religion (789)	786	**99.6%**	8,442	**10.7**
	Christian (575)	572	**99.5%**	6,092	**10.7**
Disability	With disability (188)	187	**99.5%**	2,013	**10.8**
	Without disability (1209)	1,204	**99.6%**	12,889	**10.7**
Location	England (1198)	1,193	**99.6%**	12,783	**10.7**
	Scotland (119)	119	**100.0%**	1,298	**10.9**
	Wales (53)	53	**100.0%**	554	**10.5**
Period of engagement in scouting	Short: 0-4 years (224)	223	**99.6%**	2,339	**10.5**
	Medium: 5-8 years (443)	440	**99.3%**	4,741	**10.8**
	Long: 9-12 years (730)	728	**99.7%**	7,822	**10.7**

*including only scouts that have participated in the activity, n = sample size

Making decisions and taking leadership roles

All subgroups participate in making decisions and taking leadership roles to similar degrees. However, scouts with a short period of engagement in scouting participate least frequently, and scouts with a long period of engagement in scouting participate most frequently.

Variable	Subgroup (n)	No of scouts participate in activity	% of scouts participated in activity	Total frequency of activity per year	Average no of activity participations per scout per year*
All scouts	All scouts (1399)	1,339	**95.7%**	11,167	**8.3**
Gender	Male (841)	803	**95.5%**	6,728	**8.4**
	Female (537)	517	**96.3%**	4,299	**8.3**
Faith	No religion (791)	762	**96.3%**	6,385	**8.4**
	Christian (575)	545	**94.8%**	4,516	**8.3**
Disability	With disability (188)	178	**94.7%**	1,525	**8.6**
	Without disability (1211)	1,161	**95.9%**	9,642	**8.3**
Location	England (1200)	1,143	**95.3%**	9,585	**8.4**
	Scotland (119)	118	**99.2%**	1,010	**8.6**
	Wales (53)	53	**100.0%**	379	**7.2**
Period of engagement in scouting	Short: 0-4 years (224)	208	**92.9%**	1,463	**7.0**
	Medium: 5-8 years (444)	423	**95.3%**	3,415	**8.1**
	Long: 9-12 years (731)	708	**96.9%**	6,289	**8.9**

*including only scouts that have participated in the activity, n = sample size

Does being a "Young Leader" affect the participation, satisfaction or impact on the young person?

Young Leaders score same or marginally higher on the impact outcomes compared to non-Young Leaders. They also score higher on Satisfaction and Participation. Again, the figures are exploratory only at this stage (i.e. they have not been tested for statistical significance) and should be used as guidance rather than hard evidence.

Variable type	Variable	Young Leaders average (n = 1349)	Non-Young Leaders average (n = 737)
Impact	Physical Activity	2.67	2.67
	Life Skills and Employability	3.18	3.01
	Curious about the world	3.46	3.46
	Pro-Environmental	2.93	2.82
	Leadership	2.73	2.61
	Problem Solving	2.63	2.59
	Emotionally Intelligent	2.62	2.56
	Diversity	3.20	3.12
	Belonging	2.75	2.64
	Active Citizenship	3.27	3.03
	Spiritual and Self Reflection	2.48	2.47
	Resilience	2.86	2.71
	Responsibility and Trustworthiness	3.22	3.11
	Team work	3.08	3.04
Satisfaction	Satisfaction with Scouting	3.33	2.90
Participation	Frequency of engagement in scouting (no of activities per year)	54.74	42.75

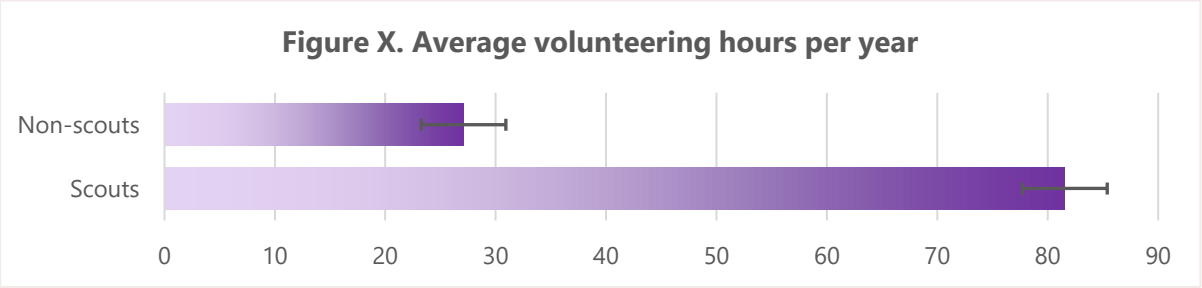
Impact and satisfaction scores range from 0 to 4, 4 being the most positive, the sample sizes are smaller for satisfaction (1339 for Young Leaders and 728 for non-Young Leaders) and participation (927 for Young Leaders and 474 for non-Young Leaders)

How much do Scouts volunteer compared to non-Scouts and is this affected by demographic or location?

Scouts volunteer considerably more hours than non-Scouts, regardless of gender or location. While the findings in Table 10 confirm that the difference between scouts and non-scouts is statistically significant, the below figures for gender and location are exploratory only at this stage (i.e. they have not been tested for statistical significance) and should be used as guidance rather than hard evidence.

Variable	Subgroup (n)	Scouts average volunteering hours	Non-scouts average volunteering hours
All scouts	All scouts	81.56	27.09
Gender	Male	77.13	20.01
	Female	88.28	31.06
Location	England	81.91	27.46
	Northern Ireland*	94.17	24.00
	Scotland*	79.72	25.40
	Wales*	69.20	23.14

*Sample sizes are too small (smaller than 25) for the non-scouts figures to be reliable, interpret with extra caution
No faith or disability data is available for non-scouts



Regression model

To answer some of the research questions, multiple regressions were conducted for each of the 14 impact outcomes as well as volunteering hours, using condition (scouts vs non-scouts), location[6] (England, Northern Ireland, Scotland, and Wales), participation in other extra-curricular group activities (total number of groups involved), gender[7] (male, female, and other), and ethnicity (White, Black, Asian, Mixed, and Other) as predictors[8].

Faith, disability, scouting activity and years in scouting are not included in this model because there is no data for the control group (who do not participate in scouting).

The results from the multiple regressions suggest that the five predictor variables (condition, location, participation in extra-curricular group activities, gender, and ethnicity) explain the differences in scores in the 14 outcome variables and volunteering hours to varying extents (see Table 4 below).

[6] England is used as the 'baseline'/main comparator with Northern Ireland, Scotland, and Wales since the sample size is largest for England.
[7] Male gender is used as the 'baseline'/main comparator with Female and Other since the sample size is largest for Male teens.
[8] White ethnicity is used as the 'baseline'/main comparator with Black, Asian, Mixed, and Other since the sample size is by far the largest for teens from White ethnic backgrounds.

Table 4. Percentage of outcome data variance explained by the model

Outcome	% of variance explained (adjusted R squared)	Significance of model fit
Physical Activity	13%	***
Life Skills and Employability	9%	***
Curious about the world	11%	***
Pro-Environmental	5%	***
Leadership	11%	***
Problem Solving	4%	***
Emotionally Intelligent	7%	***
Diversity	5%	***
Belonging	8%	***
Active Citizenship	21%	***
Spiritual and Self Reflection	5%	***
Resilience	4%	***
Responsibility and Trustworthiness	10%	***
Team work	6%	***
How many hours in the past 12 months have you volunteered to help other people in some way?	3%	***

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

The regression model only explains 3-21% of the variance across the outcomes (see Table 4). This means that the five included predictors (condition, location, participation in extra-curricular group activities, gender, and ethnicity) can only explain 13% of the differences observed in the sample's Physical Activity scores, for example. The other 87% remain unexplained at this point. However, the high significance of the model fit across all outcomes indicates that the model is a valid explanation for these percentages. Additional research efforts will be required to more fully explain the differences in the impact outcomes across scouts and non-scouts.

Not all of the five predictors are equally useful in explaining the differences in the impact outcomes (see Tables 5 and 6 below). In fact, some predictors do not contribute significantly at all in some impact outcomes. In terms of their explanatory power, condition contributes significantly to all the listed outcomes. Location contributes significantly to Curious about the world, Pro-Environmental, Leadership, Problem Solving, Diversity, Belonging, Active Citizenship, Spiritual and Self Reflection, and Team work. Extra-curricular group activity (other than scouting) contributes significantly to Physical activity, Leadership, Problem Solving, Emotionally Intelligent, Belonging, Active Citizenship, Spiritual and Self Reflection, and Resilience.

Table 5. Significance levels of predictor contributions (part 1)

Outcome	Condition	Location			Group activity
		ENG vs NI	ENG vs Scotland	ENG vs Wales	
Physical Activity	***	ns	ns	ns	***
Life Skills and Employability	***	ns	ns	ns	ns
Curious about the world	***	ns	*	ns	ns
Pro-Environmental	***	ns	*	ns	ns
Leadership	***	ns	***	ns	***

Problem Solving	***	ns	*	*	**
Emotionally Intelligent	***	ns	ns	ns	***
Diversity	***	ns	*	*	ns
Belonging	***	ns	***	ns	*
Active Citizenship	***	ns	*	ns	***
Spiritual and Self Reflection	***	*	ns	ns	***
Resilience	***	ns	ns	ns	***
Responsibility and Trustworthiness	***	ns	ns	ns	ns
Team work	***	ns	**	ns	ns
How many hours in the past 12 months have you volunteered to help other people in some way?	***	ns	ns	ns	ns

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

Gender contributes significantly to all but three outcomes (Problem Solving, Spiritual and Self Reflection, and Team work). Lastly, ethnicity contributes significantly to Physical Activity, Life Skills and Employability, Curious about the world, Pro-Environmental, Diversity, Spiritual and Self Reflection, and Responsibility and trustworthiness.

Table 6. Significance levels of predictor contributions (part 2)

Outcome	Gender		Ethnicity			
	Male vs Female	Male vs Other	White vs Black	White vs Asian	White vs Mixed	White vs Other
Physical Activity	***	ns	***	ns	ns	ns
Life Skills and Employability	ns	*	ns	ns	ns	*
Curious about the world	***	ns	ns	ns	*	ns
Pro-Environmental	***	**	***	ns	ns	ns
Leadership	ns	***	ns	ns	ns	ns
Problem Solving	ns	ns	ns	ns	ns	ns
Emotionally Intelligent	*	**	ns	ns	ns	ns
Diversity	***	ns	ns	ns	*	ns
Belonging	*	*	ns	ns	ns	ns
Active Citizenship	***	ns	ns	ns	ns	ns
Spiritual and Self Reflection	ns	ns	***	ns	ns	ns
Resilience	***	**	ns	ns	ns	ns
Responsibility and Trustworthiness	***	ns	*	ns	ns	ns
Team work	ns	ns	ns	ns	ns	ns
How many hours in the past 12 months have you volunteered to help other people in some way?	*	ns	ns	ns	ns	ns

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

Condition proves to be the largest contributor to the explained differences in scores (see Table 7 below). The standardised Beta represents by how much the outcome impact score increases or decreases per unit change in the predictor variable. For example, for Physical Activity, with every additional group activity a teen is involved in, their Physical Activity score increases by .17, scouts' Physical Activity scores tend to be .26 higher than those of non-scouts, female teens tend to score .09 lower than their male counterparts, and teens of Black ethnicity tend to score .06 lower than their White counterparts.

Table 7. Size of predictor contribution to model (standardised Beta) (part 1)

Outcome	Condition	Location			Group activity
		ENG vs NI	ENG vs Scotland	ENG vs Wales	
Physical Activity	.26	n/a	n/a	n/a	.17
Life Skills and Employability	.28	n/a	n/a	n/a	n/a
Curious about the world	.33	n/a	.04	n/a	n/a
Pro-Environmental	.18	n/a	.05	n/a	n/a
Leadership	.33	n/a	.06	n/a	.09
Problem Solving	.18	n/a	.04	.05	.06
Emotionally Intelligent	.24	n/a	n/a	n/a	.08
Diversity	.21	n/a	.05	.04	n/a
Belonging	.25	n/a	.07	n/a	.05
Active Citizenship	.45	n/a	.04	n/a	.08
Spiritual and Self Reflection	.08	.05	n/a	n/a	.20
Resilience	.17	n/a	n/a	n/a	.07
Responsibility and Trustworthiness	.30	n/a	n/a	n/a	n/a
Team work	.22	n/a	.06	n/a	n/a
How many hours in the past 12 months have you volunteered to help other people in some way?	.18	n/a	n/a	n/a	n/a

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

Condition contributes most highly to Active Citizenship, followed by Curious about the world and Leadership. Location in Scotland contributes most highly to Belonging, while location in Wales only contributes to Problem Solving and Diversity, and Wales only contributes to Team work. Group activity contributes most highly to Spiritual and Self Reflection.

Table 8. Size of predictor contribution to model (standardised Beta) (part 2)

Outcome	Gender		Ethnicity			
	Male vs Female	Male vs Other	White vs Black	White vs Asian	White vs Mixed	White vs Other
Physical Activity	-.09	n/a	-.06	n/a	n/a	n/a
Life Skills and Employability	n/a	-.04	n/a	n/a	n/a	-.04
Curious about the world	.10	n/a	n/a	n/a	.05	n/a
Pro-Environmental	.09	.05	-.07	n/a	n/a	n/a
Leadership	n/a	-.06	n/a	n/a	n/a	n/a
Problem Solving	n/a	n/a	n/a	n/a	n/a	n/a
Emotionally Intelligent	-.04	-.06	n/a	n/a	n/a	n/a
Diversity	.09	n/a	n/a	n/a	.05	n/a
Belonging	-.05	-.04	n/a	n/a	n/a	n/a
Active Citizenship	.11	n/a	n/a	n/a	n/a	n/a
Spiritual and Self Reflection	n/a	n/a	.07	n/a	n/a	n/a
Resilience	-.07	-.06	n/a	n/a	n/a	n/a
Responsibility and Trustworthiness	.11	n/a	-.04	n/a	n/a	n/a
Team work	n/a	n/a	n/a	n/a	n/a	n/a
How many hours in the past 12 months have you volunteered to help other people in some way?	.05	n/a	n/a	n/a	n/a	n/a

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

Female gender contributes most highly to Active Citizenship and Responsibility and trustworthiness, while Other gender contributes most highly to Leadership, Emotionally

Intelligent, and Resilience (all negatively). Black ethnicity contributes most highly to Pro-Environmental (negatively) and Spiritual and Self Reflection (positively), while Mixed ethnicity only contributes to Curious about the world and Diversity, and Other ethnicity only contributes to Life Skills and Employability (negatively). Asian ethnicity does not contribute significantly to any of the outcomes.

While the sample sizes for some of the subgroups are very small (location in Northern Ireland, Other gender, or Black/Asian/Mixed/Other ethnicity), the observed differences are nonetheless statistically significant. However, they are sufficiently small to have little meaning, and the low sample sizes do not allow generalising the findings to all teens outside of this sample who belong to these subgroups.

Primary research question: Do scouts experience improvements in the 14 impact outcomes, compared to non-scouts?

Main aggregated data

Scouts score significantly higher than non-scouts on all 14 outcomes, with the largest group differences in Physical Activity, Active Citizenship, and Curious about the world (see Table 9 below). Please refer to Table 30 in the appendix for further details.

With the outcome Spiritual and Self Reflection, it is worth keeping in mind that this outcome involves statements such as "I don't have a religious faith" for which answers would neither be positive nor negative. The result is thus not necessarily positive and should be interpreted simply as scouts being slightly more spiritual/self-reflective.

Table 9. Overview of differences between scouts and non-scouts (n_s = 2086, n_n = 403)

Outcome	Group	Group average	Group difference	*p*-value
Physical Activity	Scouts	2.67	.65	***
	Non-scouts	2.02		
Life Skills and Employability	Scouts	3.12	.51	***
	Non-scouts	2.61		
Curious about the world	Scouts	3.46	.53	***
	Non-scouts	2.93		
Pro-Environmental	Scouts	2.89	.40	***
	Non-scouts	2.49		
Leadership	Scouts	2.69	.39	***
	Non-scouts	2.30		
Problem Solving	Scouts	2.62	.25	***
	Non-scouts	2.37		
Emotionally Intelligent	Scouts	2.60	.42	***
	Non-scouts	2.17		
Diversity	Scouts	3.17	.35	***
	Non-scouts	2.82		
Belonging	Scouts	2.71	.40	***
	Non-scouts	2.31		
Active Citizenship	Scouts	3.19	.72	***
	Non-scouts	2.47		
Spiritual and Self Reflection	Scouts	2.48	.10	**
	Non-scouts	2.38		
Resilience	Scouts	2.81	.33	***
	Non-scouts	2.48		

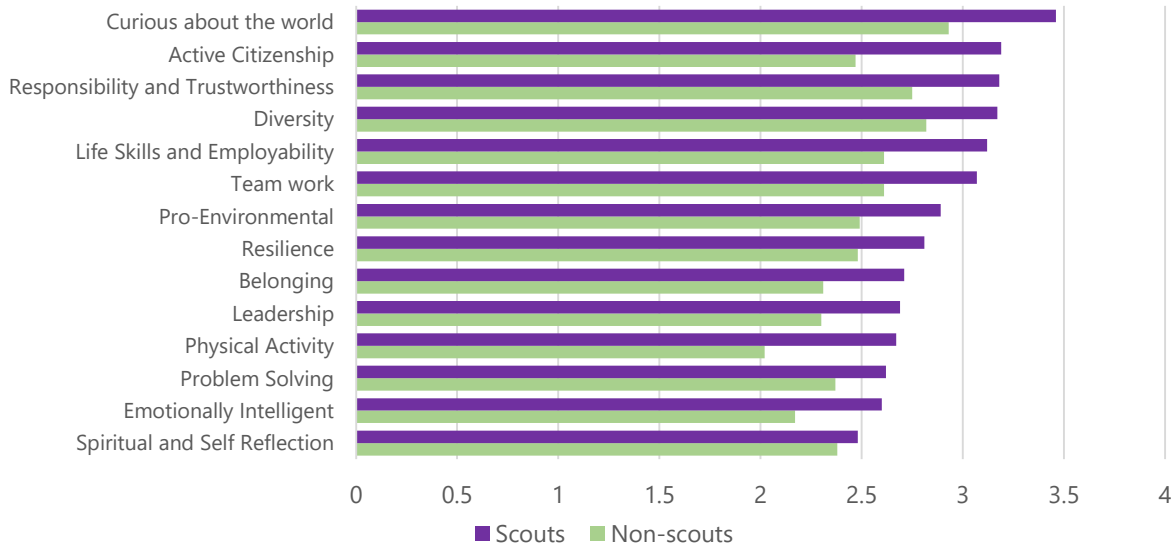
Responsibility and Trustworthiness	Scouts	3.18	.43	***
	Non-scouts	2.75		
Team work	Scouts	3.07	.45	***
	Non-scouts	2.61		

Legend: * = statistically significant at 0.05 level[9], ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, outcome scale ranging from 0 to 4, with 4 being the most positive, n_s = scouts sample size, n_n = non-scouts sample size

These above group differences can be translated into the following statements:

1. Scouts score **32.2% higher on Physical Activity** than non-scouts
2. Scouts score **19.5% higher on Life Skills and Employability** than non-scouts
3. Scouts score **18.1% higher on Curious about the world** than non-scouts
4. Scouts score **16.1% higher on Pro-Environmental** than non-scouts
5. Scouts score **17.0% higher on Leadership** than non-scouts
6. Scouts score **10.5% higher on Problem Solving** than non-scouts
7. Scouts score **19.4% higher on Emotionally Intelligent** than non-scouts
8. Scouts score **12.4% higher on Diversity** than non-scouts
9. Scouts score **17.3% higher on Belonging** than non-scouts
10. Scouts score **29.1% higher on Active Citizenship** than non-scouts
11. Scouts score **4.2% higher on Spiritual and Self Reflection** than non-scouts
12. Scouts score **13.3% higher on Resilience** than non-scouts
13. Scouts score **15.6% higher on Responsibility and trustworthiness** than non-scouts
14. Scouts score **17.2% higher on Team work** than non-scouts

Figure 1. Significant outcome differences between scouts and non-scouts



Due to the limitations in the research methodology the above analysis approach cannot tell what the cause of the observed statistically significant outcome differences is – whether it is scouting or a mix of influencing factors.

[9] Statistical significance at the 0.05 level means that we are 95% certain that the observed difference in the means between the data groups is a true difference (rather than a random fluctuation in the data). This threshold is widely used in social research. Significance at 0.01 means 99% certainty, and significance at 0.001 means 99.9% certainty.

However, the regression analysis above confirms that while some other factors also have statistically significant effects on the outcomes, scouting (the 'condition' variable) is a consistent predictor for all outcomes (see Table 5). In fact, compared to the other predictors, scouting is by far the strongest predictor (see Tables 7 and 8), with the exception of Spiritual and Self Reflection (group activity is the strongest predictor here). However, the current regression model can only explain a small amount of the observed outcome differences (see Table 4); 3-21% of the differences, to be exact. Therefore, more robust research is necessary to better understand what the causes are of the percentage differences in the outcomes above.

Non-aggregated data

Active Citizenship

Scouts are volunteering significantly more hours than non-scouts, a finding that is consistent with the main Active Citizenship outcome reported above. In fact, scouts volunteer 201.1% more hours than non-scouts.

Again, despite the encouraging findings in the regression model indicating that among the known predictors, scouting is the strongest (see Tables 7 and 8), more robust research is necessary to understand what the cause of this group difference is since the current model explains merely 3% of the observed outcome differences.

Table 10. Overview of differences between scouts and non-scouts (n_s = 2086, n_n = 401)

Outcome	Group	Group average	Group difference	*p*-value
How many hours in the past 12 months have you volunteered to help other people in some way?	Scouts	81.56	54.47	***
	Non-scouts	27.09		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, n_s = scouts sample size, n_n = non-scouts sample size

Secondary research questions

1. Are longer periods of engagement in scouting associated with better outcomes and satisfaction?

Main aggregated data

Associations between periods of engagement in scouting and the impact outcomes and satisfaction outcome are generally small or non-existent (see Table 11 below). Small statistically significant positive correlations are observed for Life Skills and Employability, Leadership, Problem Solving, Active Citizenship, Resilience, and Satisfaction with scouting. In practical terms, this means that for every additional year of scouting, a scout's Life Skills and Employability score increases by 0.10 (on a scale ranging from 0 to 4), to take one example. However, while the formerly mentioned outcomes increase with longer periods of engagement, scouts' Curious about the world scores slightly decrease with longer periods of engagement. With all these correlations, it is important to bear in mind that they are just correlations, not causal links. In other words, correlation analyses cannot tell us whether periods of engagement in scouting is the cause of the increases or decreases of the outcomes below.

Table 11. Correlations between periods of engagement in scouting and all 15 outcomes

Outcome	Pearson correlation coefficient	Significance
Physical Activity	.02	ns
Life Skills and Employability	.10	***
Curious about the world	-.07	**
Pro-Environmental	.03	ns
Leadership	.07	**
Problem Solving	.06	**
Emotionally Intelligent	.04	ns
Diversity	-.01	ns
Belonging	.04	ns
Active Citizenship	.06	**
Spiritual and Self Reflection	.00	ns
Resilience	.08	***
Responsibility and Trustworthiness	.01	ns
Team work	-.01	ns
Satisfaction with scouting	.16	***

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, correlation coefficient vary between -1 and 1, with -1 and 1 being perfect/high correlations and 0 being no correlation

Non-aggregated data

As above, associations between periods of engagement in scouting and the non-aggregated outcomes are generally small or non-existent (see Table 12 below). Small statistically significant positive correlations are observed for both Life Skills and Employability statements, two of the three Active Citizenship statements, the Spiritual and Self Reflection statement, and one of the three Resilience statements. With the exception of Spiritual and Self Reflection, this is consistent with the findings in the aggregated data.

Table 12. Correlations between periods of engagement in scouting and all 10 non-aggregated outcome statements

Life Skills and Employability	Pearson correlation coefficient	Significance
I got the chance to develop skills which will be useful to me in the future	.07	**
I now feel more confident about getting a job in the future	.06	*
Diversity	**Pearson correlation coefficient**	**Significance**
I now feel more positive towards people from different backgrounds to my own	.04	ns
Active Citizenship	**Pearson correlation coefficient**	**Significance**
I am more likely to help out in my local area	.04	ns
I now feel I have a greater responsibility to my local community	.06	*
How many hours in the past 12 months have you volunteered to help other people in some way?	.12	***
Spiritual and Self Reflection	**Pearson correlation coefficient**	**Significance**
I learned something new about myself	.07	*

Resilience	Pearson correlation coefficient	Significance
I saw that there were more opportunities available to me than I had realised	.04	ns
I am proud of what I achieved	.09	***
I now feel capable of more than I realised	.05	ns

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, correlation coefficient vary between -1 and 1, with -1 and 1 being perfect/high correlations and 0 being no correlation

2. Is scout engagement in more activities associated with better outcomes and satisfaction?

Main aggregated data

Associations between frequency of engagement in scouting activities and the impact and satisfaction outcomes are also relatively small (see Table 13 below) but considerably larger than in the analysis above (see Table 11 above and Figure X to the right, using the average correlation across all 15 outcomes). The correlations are statistically significant for all outcomes, and are positive across all outcomes (meaning more frequent engagement in scouting activities is associated with a more positive outcome score). Again, in practical terms, this means that for every additional scouting activity participated in per year, a scout's Physical Activity score increases by 0.18 (on a scale ranging from 0 to 4), to take one example. The highest correlations are observed for Satisfaction with scouting, Life Skills and Employability, Leadership, Active Citizenship, Responsibility and trustworthiness, and Belonging, all with Pearson correlation coefficients between .25 and .36. Again, with all these correlations, it is important to bear in mind that they are just correlations, not causal links.

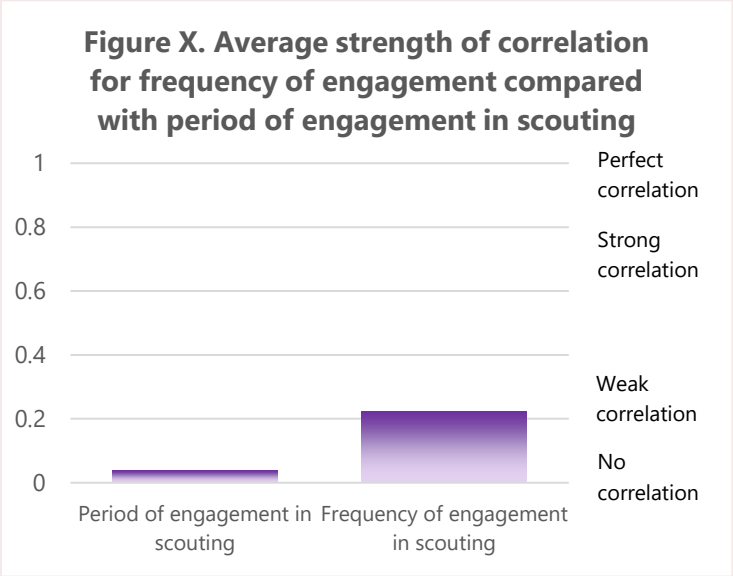


Table 13. Correlations between frequency of engagement in scouting and all 15 outcomes

Outcome	Pearson correlation coefficient	Significance
Physical Activity	.18	***
Life Skills and Employability	.29	***
Curious about the world	.06	*
Pro-Environmental	.24	***
Leadership	.28	***
Problem Solving	.20	***
Emotionally Intelligent	.17	***
Diversity	.23	***
Belonging	.25	***
Active Citizenship	.26	***
Spiritual and Self Reflection	.17	***
Resilience	.23	***
Responsibility and Trustworthiness	.26	***

Team work	.15	***
Satisfaction with scouting	.36	***

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, correlation coefficient vary between -1 and 1, with -1 and 1 being perfect/high correlations and 0 being no correlation

Non-aggregated data

As above, associations between periods of engagement in scouting and the non-aggregated outcomes are all small, statistically significant, and therefore consistent with the findings in the aggregated data (see Table 14 below). The largest correlations are observed for the Diversity statement, the last of the three Resilience statements, and the second of the three Active Citizenship statements.

Table 14. Correlations between frequency of engagement in scouting and all 10 non-aggregated outcome statements

Life Skills and Employability	**Pearson correlation coefficient**	**Significance**
I got the chance to develop skills which will be useful to me in the future	.18	***
I now feel more confident about getting a job in the future	.20	***
Diversity	**Pearson correlation coefficient**	**Significance**
I now feel more positive towards people from different backgrounds to my own	.28	***
Active Citizenship	**Pearson correlation coefficient**	**Significance**
I am more likely to help out in my local area	.20	***
I now feel I have a greater responsibility to my local community	.27	***
How many hours in the past 12 months have you volunteered to help other people in some way?	.26	***
Spiritual and Self Reflection	**Pearson correlation coefficient**	**Significance**
I learned something new about myself	.21	***
Resilience	**Pearson correlation coefficient**	**Significance**
I saw that there were more opportunities available to me than I had realised	.18	***
I am proud of what I achieved	.22	***
I now feel capable of more than I realised	.28	***

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, correlation coefficient vary between -1 and 1, with -1 and 1 being perfect/high correlations and 0 being no correlation

3. Is there a difference in outcomes and satisfaction between male and female scouts?

Main aggregated data

When looking only at the scouts' data, independent t-tests reveal that there are small statistically significant differences between male and female scouts for Physical activity, Life Skills and Employability, Curious about the world, Pro-Environmental, Emotionally Intelligent, Diversity, Belonging, Active Citizenship, Resilience, Responsibility and trustworthiness, and Satisfaction with Scouting. Male scouts score more highly on about a third of these outcomes (Physical Activity, Emotionally Intelligent, Belonging, and Resilience), while female scouts score more highly on the other two thirds (Life Skills and Employability, Curious about the world, Pro-Environmental, Diversity, Active Citizenship, Responsibility and trustworthiness, and Satisfaction with scouting).

Table 15. Outcome and satisfaction averages by gender and t-test significance

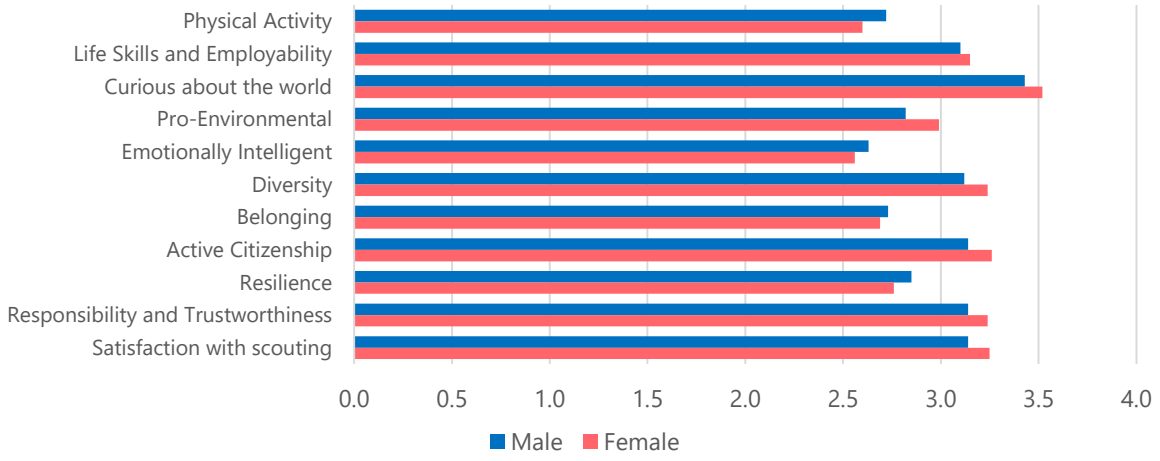
Outcome	Gender	Average	Standard deviation	Sample size	Average difference	Significance
Physical Activity	Male	2.72	.75	1244	.12	***
	Female	2.60	.76	814		
Life Skills and Employability	Male	3.10	.57	1244	-.05	*
	Female	3.15	.50	814		
Curious about the world	Male	3.43	.56	1244	-.09	***
	Female	3.52	.50	814		
Pro-Environmental	Male	2.82	.71	1244	-.16	***
	Female	2.99	.65	814		
Leadership	Male	2.69	.43	1244	.01	ns
	Female	2.69	.42	814		
Problem Solving	Male	2.62	.50	1244	.01	ns
	Female	2.61	.48	814		
Emotionally Intelligent	Male	2.63	.63	1244	.07	*
	Female	2.56	.61	814		
Diversity	Male	3.12	.54	1244	-.12	***
	Female	3.24	.54	814		
Belonging	Male	2.73	.52	1244	.05	*
	Female	2.69	.50	814		
Active Citizenship	Male	3.14	.53	1244	-.12	***
	Female	3.26	.50	814		
Spiritual and Self Reflection	Male	2.47	.70	1244	-.03	ns
	Female	2.50	.65	814		
Resilience	Male	2.85	.62	1244	.09	***
	Female	2.76	.61	814		
Responsibility and Trustworthiness	Male	3.14	.45	1244	-.10	***
	Female	3.24	.42	814		
Team work	Male	3.06	.63	1244	-.02	ns
	Female	3.08	.60	814		
Satisfaction with scouting	Male	3.14	.66	1231	-.11	***
	Female	3.25	.62	809		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, all scales ranging from 0 to 4, with 4 being the most positive

These above group differences can be translated into the following statements:

1. Male scouts score **4.6% higher on Physical Activity** than female scouts
2. Male scouts score **1.6% lower on Life Skills and Employability** than female scouts
3. Male scouts score **2.6% lower on Curious about the world** than female scouts
4. Male scouts score **5.4% lower on Pro-Environmental** than female scouts
5. Male scouts do not score any differently on Leadership than female scouts
6. Male scouts do not score any differently on Problem Solving than female scouts
7. Male scouts score **2.7% higher on Emotionally Intelligent** than female scouts
8. Male scouts score **3.7% lower on Diversity** than female scouts
9. Male scouts score **1.9% higher on Belonging** than female scouts
10. Male scouts score **3.7% lower on Active Citizenship** than female scouts
11. Male scouts do not score any differently on Spiritual and Self Reflection than female scouts
12. Male scouts score **3.3% higher on Resilience** than female scouts
13. Male scouts score **3.1% lower on Responsibility and trustworthiness** than female scouts
14. Male scouts do not score any differently on Team work than female scouts
15. Male scouts score **3.4% lower on Satisfaction with Scouting** than female scouts

Figure X. Significant outcome differences between male and female scouts



Due to the limitations in the research methodology the above analysis approach cannot tell what the cause of the observed statistically significant outcome differences is – whether it is gender or a mix of influencing factors.

However, while the findings from the regression analysis (which take gender differences in the non-scouts into account as well) suggest that some other factors also have statistically significant effects on the outcomes, the regression findings are also consistent with the findings in Table 15, except for Life Skills and Employability which are non-significant in the regression model (see repeat of gender figures in Table 16 below). Similarly, whether it was male or female scouts scoring higher than their counterparts is consistent with the above findings. This provides some evidence that the above percentage differences are indeed caused by gender, but more robust research is necessary to establish the likely causal link.

Table 16. Gender differences in the multiple regression models (standardised Beta)

Outcome	Male vs Female
Physical Activity	-.09
Life Skills and Employability	n/a
Curious about the world	.10
Pro-Environmental	.09
Leadership	n/a
Problem Solving	n/a
Emotionally Intelligent	-.04
Diversity	.09
Belonging	-.05
Active Citizenship	.11
Spiritual and Self Reflection	n/a
Resilience	-.07
Responsibility and Trustworthiness	.11
Team work	n/a
How many hours in the past 12 months have you volunteered to help other people in some way? (non-aggregated Active Citizenship outcome)	.05

Non-aggregated data

In the non-aggregated data, independent t-tests reveal that there are small statistically significant differences between male and female scouts for the Diversity statement, two of the three Active Citizenship statements, and one of the three Resilience statements. The findings on these three outcomes, as well as the absence of a significant difference in Spiritual and Self Reflection are consistent with those of the aggregated data. However, three of the findings under Active Citizenship and Resilience are not statistically significant, most likely because average group differences were too small, but the groups' smaller sample sizes also mean that while such small differences are found statistically significant in the aggregated data, the non-aggregated data may not be equipped to detect these very small differences. This also applies to the Life Skills and Employability findings which, unlike in the aggregated data, are not statistically significant despite similarly sized, albeit very small, average differences. As with the aggregated data, female scouts score higher on Diversity and Active Citizenship, but unlike in the aggregated data, they also score higher on Resilience.

Table 17. Outcome and satisfaction averages by gender and t-test significance

Life Skills and Employability	Gender	Average	Standard deviation	Sample size	Average difference	Significance
I got the chance to develop skills which will be useful to me in the future	Male	3.30	.90	827	-.05	ns
	Female	3.35	.85	535		
I now feel more confident about getting a job in the future	Male	2.90	1.00	830	-.07	ns
	Female	2.96	.94	535		
Diversity						
I now feel more positive towards people from different backgrounds to my own	Male	2.98	.89	531	-.16	**
	Female	3.14	.78	369		
Active Citizenship						
I am more likely to help out in my local area	Male	2.91	.95	832	-.10	ns
	Female	3.01	.86	535		
I now feel I have a greater responsibility to my local community	Male	2.65	.96	830	-.11	*
	Female	2.76	.92	534		
How many hours in the past 12 months have you volunteered to help other people in some way?	Male	77.13	111.91	1244	-11.15	*
	Female	88.28	121.76	814		
Spiritual and Self Reflection						
I learned something new about myself	Male	2.95	.96	829	-.10	ns
	Female	3.05	.89	535		
Resilience						
I saw that there were more opportunities available to me than I had realised	Male	2.95	.93	828	-.15	**
	Female	3.09	.91	535		
I am proud of what I achieved	Male	3.26	.92	831	-.07	ns
	Female	3.33	.87	535		
I now feel capable of more than I realised	Male	3.20	.79	529	-.03	ns
	Female	3.23	.70	369		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, all scales ranging from 0 to 4, with 4 being the most positive

4. Is there a difference in outcomes and satisfaction between the countries of the UK?

The focus for this research question is on scouts data only (excluding non-scouts data).

A homogeneity of variance test (Levene's test) reveals that the variance in some of the outcome scores differ significantly (see Table 31 in the appendix for the results from this test). Based on this information, these outcomes will need a different ANOVA approach than the other outcomes. Thus, while for the outcomes that did not show significance in the Levene's test the standard ANOVA method was used, the Welch's ANOVA and Brown-Forsythe's ANOVA were conducted for the outcomes for which the Levene's test is significant.

The various ANOVAs reveal that there are significant country differences for Pro-Environmental, Problem Solving, Diversity, Belonging, Teamwork, Curious about the world, Active Citizenship, and one of the three non-aggregated Resilience statements (see Tables 18 and 19 below).

Table 18. Standard ANOVAs

Main aggregated data		
Outcome	**F statistic**	**Significance**
Physical Activity	.961	ns
Life Skills and Employability	1.196	ns
Pro-Environmental	3.498	*
Leadership	2.529	ns
Problem Solving	4.993	**
Emotionally Intelligent	1.825	ns
Diversity	4.039	**
Belonging	5.251	***
Spiritual and Self Reflection	1.463	ns
Responsibility and Trustworthiness	1.581	ns
Team work	5.942	***
Satisfaction with scouting	.423	ns
Non-aggregated data		
Life Skills and Employability	**F statistic**	**Significance**
I now feel more confident about getting a job in the future	1.326	ns
Diversity		
I now feel more positive towards people from different backgrounds to my own	1.502	ns
Active Citizenship		
I now feel I have a greater responsibility to my local community	.105	ns
Resilience		
I saw that there were more opportunities available to me than I had realised	2.271	ns
I now feel capable of more than I realised	2.909	*

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

Table 19. Welch's and Brown-Forsythe's ANOVAs

Main aggregated data		
Outcome	**Welch F statistic**	**Significance**
Curious about the world	4.095	**
Active Citizenship	4.055	**
Resilience	1.605	ns
Non-aggregated data		
Life Skills and Employability	**Welch F statistic**	**Significance**
I got the chance to develop skills which will be useful to me in the future	1.270	ns
Active Citizenship		
I am more likely to help out in my local area	1.125	ns
How many hours in the past 12 months have you volunteered to help other people in some way?	.841	ns
Spiritual and Self Reflection		
I learned something new about myself	.469	ns
Resilience		
I am proud of what I achieved	.209	ns

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

The ANOVAs above find that there are no significant country differences for Physical Activity, Life Skills and Employability, Leadership, Emotionally Intelligent, Spiritual and Self Reflection, Responsibility and trustworthiness, Resilience, Satisfaction with scouting, and all non-aggregated statement data except for "I now feel capable of more than I realised".

For the outcomes that do have significant country differences, the Hochberg's GT2[10] and Games-Howell[11] post hoc tests provide insight into which of the four countries differ significantly from each other (see Table 20 below).

Table 20. Individual country contrasts

Main aggregated data			
Outcome	**Countries compared**	**Difference in average**	**Significance**
Curious about the world[a]	England vs NI	.109	ns
	England vs Scotland	-.114	**
	England vs Wales	-.037	ns
	NI vs Scotland	-.223	ns
	NI vs Wales	-.146	ns
	Scotland vs Wales	.077	ns

[10] The Hochberg's GT2 post hoc test is designed for the regular ANOVAs (i.e. using data with equal variances in the subgroups) and particularly for data where the subgroups' sample sizes differ substantially from each other.
[11] The Games-Howell post hoc test is designed for Welch's or Brown-Forsythe's ANOVAs (i.e. using data with unequal variances in the subgroups)

Pro-Environmental[b]	England vs NI	-.074	ns
	England vs Scotland	-.168	*
	England vs Wales	.063	ns
	NI vs Scotland	-.094	ns
	NI vs Wales	.136	ns
	Scotland vs Wales	.231	ns
Problem Solving[b]	England vs NI	-.140	ns
	England vs Scotland	-.076	ns
	England vs Wales	-.165	*
	NI vs Scotland	.064	ns
	NI vs Wales	-.025	ns
	Scotland vs Wales	-.089	ns
Diversity[b]	England vs NI	-.073	ns
	England vs Scotland	-.136	**
	England vs Wales	-.091	ns
	NI vs Scotland	-.064	ns
	NI vs Wales	-.018	ns
	Scotland vs Wales	.045	ns
Belonging[b]	England vs NI	.033	ns
	England vs Scotland	-.159	***
	England vs Wales	-.052	ns
	NI vs Scotland	-.192	ns
	NI vs Wales	-.085	ns
	Scotland vs Wales	.107	ns
Active Citizenship[a]	England vs NI	.075	ns
	England vs Scotland	-.121	*
	England vs Wales	-.104	ns
	NI vs Scotland	-.196	ns
	NI vs Wales	-.179	ns
	Scotland vs Wales	.017	ns
Team work[b]	England vs NI	-.138	ns
	England vs Scotland	-.193	***
	England vs Wales	.038	ns
	NI vs Scotland	-.055	ns
	NI vs Wales	.176	ns
	Scotland vs Wales	.231	*
Non-aggregated data			
Resilience	**Country**	**Difference in average**	**Significance**
I now feel capable of more than I realised[b]	England vs NI	.197	ns
	England vs Scotland	-.069	ns
	England vs Wales	-.346	*
	NI vs Scotland	-.267	ns
	NI vs Wales	.543	ns
	Scotland vs Wales	-.276	ns

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, [a] = uses Games-Howell test, [b] = uses Hochberg's GT2 test

The differences in averages are all relatively small and thus require large sample sizes to identify significant differences where they exist. It is therefore not surprising that most of the significant findings in Table 20 above involve England which has the largest sample size (1784) and none involve Northern Ireland which has the smallest sample size (53). In addition, large standard deviations (e.g. as is the case in NI vs Wales in the non-aggregated resilience statement) mean that even considerable differences in averages are statistically insignificant.

Despite these considerations, the following statements can be made with confidence about the country differences among scouts:

- English scouts score 3.2% lower on Curious about the world, 5.5% lower on Pro-Environmental, 4.1% lower on Diversity, 5.6% lower on Belonging, 3.7% lower on Active Citizenship, and 6.0% lower Team work than Scottish scouts.
- Scottish scouts score 7.7% higher on Team work than Welsh scouts.
- English scouts score 6.0% lower on Problem Solving and 9.8% lower on "I now feel capable of more than I realised" (Resilience) than Welsh scouts.
- All other country differences are not statistically significant.

Due to the limitations in the research methodology the above analysis approach cannot tell what the cause of the observed statistically significant outcome differences is – whether it is country or a mix of influencing factors.

However, the findings from the multiple regressions conducted further above (see repeat of gender figures in Table 21 below) which take country differences in the non-scouts into account as well are consistent with the aggregated data findings for Curious about the world, Pro-Environmental, Problem Solving (Wales result only), Diversity (Scotland result only), Belonging, and Active Citizenship. While significant predictors in the regression models, Problem Solving (Scotland result only), Diversity (Wales result only), and Spiritual and Self Reflection (Northern Ireland result) are not significant in the ANOVAs. Also, unlike in the ANOVAs, the regression models do not identify any country differences for Team work or the non-aggregated Resilience outcome (see Table 20 above).

Thus, the regression findings provide some support to the ANOVA findings, but more robust research is necessary to better understand any potential causal links.

Table 21. Country differences in the multiple regression models (standardised Beta)

Outcome	Location		
	ENG vs NI	ENG vs Scotland	ENG vs Wales
Physical Activity	n/a	n/a	n/a
Life Skills and Employability	n/a	n/a	n/a
Curious about the world	n/a	.04	n/a
Pro-Environmental	n/a	.05	n/a
Leadership	n/a	.06	n/a
Problem Solving	n/a	.04	.05
Emotionally Intelligent	n/a	n/a	n/a
Diversity	n/a	.05	.04
Belonging	n/a	.07	n/a
Active Citizenship	n/a	.04	n/a
Spiritual and Self Reflection	.05	n/a	n/a
Resilience	n/a	n/a	n/a
Responsibility and Trustworthiness	n/a	n/a	n/a
Team work	n/a	.06	n/a
How many hours in the past 12 months have you volunteered to help other people in some way? (non-aggregated Active Citizenship outcome)	n/a	n/a	n/a

5. To what extent do other extra-curricular group activities account for differences in outcomes and satisfaction?

Impact outcomes

The findings from the previous multiple regressions (relevant figures reiterated in Table 22 below) suggest that across scouts and non-scouts, higher levels of engagement in extra-curricular group activities (other than scouting) are associated with slightly higher scores for Physical Activity, Leadership, Problem Solving, Emotionally Intelligent, Belonging, Active Citizenship, Spiritual and Self Reflection, and Resilience. The largest effects are observed for Spiritual and Self Reflection and Physical Activity. However, extra-curricular group activities do not appear to affect Life Skills and Employability, Curious about the world, Pro-Environmental, Diversity, Responsibility, Team work, and volunteering hours (non-aggregated Active Citizenship outcome).

Table 22. Level of extra-curricular group activity engagement (standardised Beta)

Outcome	Group activity
Physical Activity	.17
Life Skills and Employability	n/a
Curious about the world	n/a
Pro-Environmental	n/a
Leadership	.09
Problem Solving	.06
Emotionally Intelligent	.08
Diversity	n/a
Belonging	.05
Active Citizenship	.08
Spiritual and Self Reflection	.20
Resilience	.07
Responsibility and Trustworthiness	n/a
Team work	n/a
How many hours in the past 12 months have you volunteered to help other people in some way? (non-aggregated Active Citizenship outcome)	n/a

Satisfaction

A multiple regression was conducted separately for this outcome, using total scouting activity (frequency of participation in various scouting activities), location[12] (England, Northern Ireland, Scotland, and Wales), participation in other extra-curricular group activities (total number of groups involved), gender[13] (male, female, and other), and ethnicity[14] (White, Black, Asian, Mixed, and Other), years in scouting (number of years), faith[15] (No religion, Christian, Buddhist,

[12] England is used as the 'baseline'/main comparator with Northern Ireland, Scotland, and Wales since the sample size is largest for England.

[13] Male gender is used as the 'baseline'/main comparator with Female and Other since the sample size is largest for Male teens.

[14] White ethnicity is used as the 'baseline'/main comparator with Black, Asian, Mixed, and Other since the sample size is by far the largest for teens from White ethnic backgrounds.

[15] No religion is used as the 'baseline'/main comparator with Christian, Buddhist, Hindu, Jewish, Muslim, Sikh, and any other religion since the sample size is the largest for scouts with no religion.

Hindu, Jewish, Muslim, Sikh, and any other religion), and disability (with disability and without disability) as predictors.

Condition is not included in this model because there is no data for the control group.

The results from the multiple regression suggest that the eight predictor variables explain 16% of the differences in scores in the Satisfaction with scouting outcome (see Table 23). While this is a relatively small percentage, the model fit is statistically significant and therefore valid.

Table 23. Percentage of outcome data variance explained by the model

Outcome	% of variance explained (adjusted R squared)	Significance of model fit
Satisfaction with scouting	16%	***

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

However, this includes the contributions made by all eight predictors. The contribution from engagement in extra-curricular group activity is not statistically significant. This means that involvement in more extra-curricular groups (other than scouting) does not correspond to higher Satisfaction with scouting.

The largest contributor to the model is frequency of engagement in scouting activities (.33), followed by years in scouting (.15). While most predictors affect Satisfaction with scouting positively, the reverse is true for Mixed ethnicity and Other ethnicity.

Table 24. Significance levels of predictor contributions and size of predictor contribution to model (standardised Beta)

Satisfaction with scouting		Size of contribution	Significance levels
	Scouting activity	.33	***
Location	England vs Norther Ireland	n/a	ns
	England vs Scotland	n/a	ns
	England vs Wales	n/a	ns
	Group activity	n/a	ns
Gender	Male vs Female	.11	***
	Male vs Other	n/a	ns
Ethnicity	White vs Black	n/a	ns
	White vs Asian	n/a	ns
	White vs Mixed	-.06	*
	White vs Other ethnic group	-.08	***
	Years in scouting	.15	***
Faith	No religion vs Christian	.07	**
	No religion vs Buddhist	n/a	ns
	No religion vs Hindu	n/a	ns
	No religion vs Jewish	n/a	ns
	No religion vs Muslim	n/a	ns
	No religion vs Sikh	n/a	ns
	No religion vs any other religion	n/a	ns
	Disability vs No disability	n/a	ns

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant

6. Do Scouts participate in other extra-curricular group activities more than non-Scouts?

The results from the independent t-test reveals that there is no statistically significant difference between scouts and non-scouts in terms of the number of extra-curricular groups they participate in. The difference between the scouts' and non-scouts' averages is a mere .038.

Table 25. Overview of differences between scouts and non-scouts

Outcome	Gender	Average	Standard deviation	Sample size	Average difference	Significance
Extra-curricular group activities	Scouts	.97	.81	2086	.038	ns
	Non-scouts	.93	.89	395		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, scale ranging from 0 to 4 groups

Tertiary research questions

The subgroups' sample sizes to disability, ethnicity, and faith are suspected to be too small to meaningfully analyse. However, where the sample sizes are sufficiently large, the analyses will be carried out.

7. Is there a difference in outcomes and satisfaction between scouts with and without a disability?

Sample sizes for both scouts with and without a disability are sufficiently large to detect even small statistically significant group differences as demonstrated in table 26 below. No non-scouts data is available on disability, meaning that only scouts data is used in the analysis.

Main aggregated data

In the aggregated data, the independent t-tests reveal that scouts with a disability score significantly lower on Physical Activity, Life Skills and Employability, Leadership, and Emotionally Intelligent, but score significantly higher on Pro-Environmental and Satisfaction with Scouting, compared with scouts with no disability.

However, Table 24 indicates that according to the regression, disability is not a significant predictor for Satisfaction with Scouting. Since the regression model is more robust than the t-test (as it uses more variables to help explain the differences in the data), its result trumps that of the t-test. This means that while scouts with a disability score significantly higher on Satisfaction with Scouting than scouts without a disability, the differences in scores are actually explained by factors other than disability.

Table 26. Overview of differences between scouts with and without disability

Outcome	Disability	Average	Standard deviation	Sample size	Average difference	Significance
Physical Activity	With disability	2.56	.78	296	-.13	**
	Without disability	2.69	.75	1790		
Life Skills and Employability	With disability	3.05	.61	296	-.07	*
	Without disability	3.13	.53	1790		
Curious about the world	With disability	3.44	.58	296	-.02	ns
	Without disability	3.46	.53	1790		
Pro-Environmental	With disability	2.97	.72	296	.09	*
	Without disability	2.88	.69	1790		

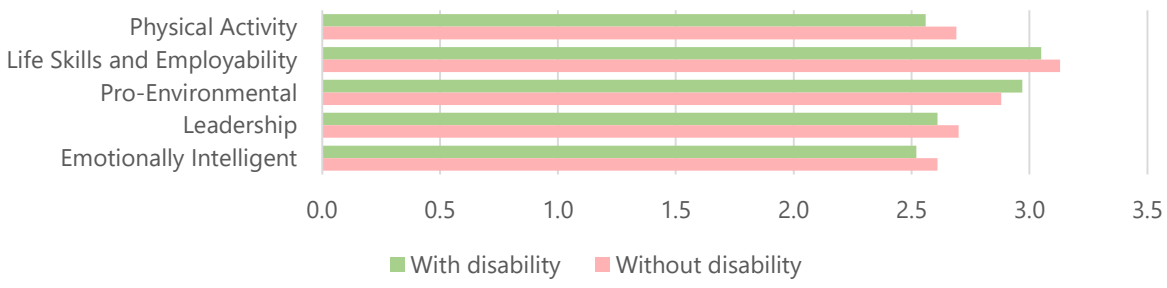
Leadership	With disability	2.61	.48	296	-.09	**
	Without disability	2.70	.42	1790		
Problem Solving	With disability	2.58	.55	296	-.04	ns
	Without disability	2.62	.49	1790		
Emotionally Intelligent	With disability	2.52	.71	296	-.09	*
	Without disability	2.61	.61	1790		
Diversity	With disability	3.21	.62	296	.04	ns
	Without disability	3.16	.53	1790		
Belonging	With disability	2.69	.57	296	-.03	ns
	Without disability	2.72	.51	1790		
Active Citizenship	With disability	3.20	.54	296	.02	ns
	Without disability	3.18	.52	1790		
Spiritual and Self Reflection	With disability	2.45	.74	296	-.03	ns
	Without disability	2.48	.67	1790		
Resilience	With disability	2.73	.74	296	-.08	ns
	Without disability	2.82	.60	1790		
Responsibility and Trustworthiness	With disability	3.21	.48	296	.03	ns
	Without disability	3.18	.44	1790		
Team work	With disability	3.03	.65	296	-.04	ns
	Without disability	3.07	.62	1790		
Satisfaction with scouting	With disability	3.27	.62	294	.10	**
	Without disability	3.17	.65	1773		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, all scales ranging from 0 to 4, with 4 being the most positive

These above group differences can be translated into the following statements:

1. Scouts with a disability score **4.8% lower on Physical Activity** than scouts without a disability
2. Scouts with a disability score **2.2% lower on Life Skills and Employability** than scouts without a disability
3. Scouts with a disability score **3.1% higher on Pro-Environmental** than scouts without a disability
4. Scouts with a disability score **3.3% lower on Leadership** than scouts without a disability
5. Scouts with a disability score **3.4% lower on Emotionally Intelligent** than scouts without a disability
6. Scouts with a disability do not score any differently on Curious about the world, Problem Solving, Diversity, Belonging, Active Citizenship, Spiritual and Self Reflection, Resilience, Responsibility and trustworthiness, Team work, and Satisfaction with scouting than scouts without a disability

Figure X. Significant outcome differences between scouts with and without a disability



Due to the limitations in the research methodology the above analysis approach cannot tell what the cause of the observed statistically significant outcome differences is – whether it is

disability or a mix of influencing factors. More robust research is necessary to better understand any potential causal links.

Non-aggregated data

In the non-aggregated data, t-tests only find one statistically significant finding which suggests that scouts with a disability volunteer significantly more hours than scouts with no disability.

Table 27. Overview of differences between scouts with and without disability

Life Skills and Employability	Disability	Average	Standard deviation	Sample size	Average difference	Significance
I got the chance to develop skills which will be useful to me in the future	With disability	3.28	.91	186	-.04	ns
	Without disability	3.32	.88	1197		
I now feel more confident about getting a job in the future	With disability	2.86	1.04	186	-.07	ns
	Without disability	2.93	.97	1200		
Diversity						
I now feel more positive towards people from different backgrounds to my own	With disability	3.17	.82	125	.14	ns
	Without disability	3.03	.85	786		
Active Citizenship						
I am more likely to help out in my local area	With disability	2.98	.94	186	.04	ns
	Without disability	2.94	.91	1202		
I now feel I have a greater responsibility to my local community	With disability	2.72	1.00	186	.03	ns
	Without disability	2.68	.94	1199		
How many hours in the past 12 months have you volunteered to help other people in some way?	With disability	99.30	136.81	296	20.67	*
	Without disability	78.63	112.23	1790		
Spiritual and Self Reflection						
I learned something new about myself	With disability	2.99	.96	186	.00	ns
	Without disability	2.99	.93	1199		
Resilience						
I saw that there were more opportunities available to me than I had realised	With disability	3.01	.98	186	.01	ns
	Without disability	3.00	.92	1198		
I am proud of what I achieved	With disability	3.27	.98	186	-.01	ns
	Without disability	3.28	.89	1201		
I now feel capable of more than I realised	With disability	3.27	.74	124	.07	ns
	Without disability	3.20	.76	784		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, all scales ranging from 0 to 4, with 4 being the most positive

8. Is there a difference in outcomes and satisfaction between different ethnicities?

The sample sizes for the individual ethnicities (except those of white ethnic background) are too small to conduct any meaningful comparisons between the ethnicities. Similarly, the relevant results in Table 24 should be viewed with considerable caution as the small sample

sizes for ethnicity could mean that the data is misleading (the samples may not be representative of the wider population).

9. Is there a difference in outcomes and satisfaction between different faiths?

The sample sizes for all but two faith subgroups (No religion and Christians) are too small to be meaningfully included in the analyses. Therefore, only the two large groups were compared. Also, no non-scouts data is available on faith, meaning that only scouts data is used in the analysis.

Main aggregated data

In the aggregated data, independent t-tests reveal several statistically significant findings that suggest that Christian scouts score slightly higher on Physical Activity, Curious about the world, Pro-Environmental, Leadership, Emotionally Intelligent, Belonging, Active Citizenship, Resilience, Responsibility and trustworthiness, Team work, and Satisfaction with scouting, and score considerably higher on Spiritual and Self Reflection than scouts with no religion.

Table 28. Overview of differences between scouts with no religion and Christian scouts

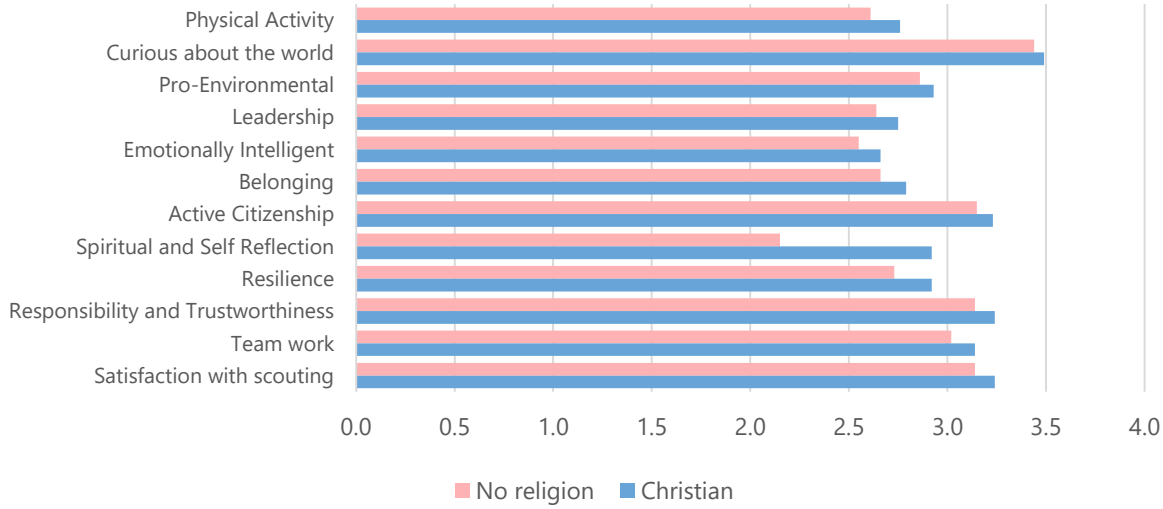
Outcome	Faith	Average	Standard deviation	Sample size	Average difference	Significance
Physical Activity	No religion	2.61	.75	1175	-.15	***
	Christian	2.76	.74	853		
Life Skills and Employability	No religion	3.10	.54	1175	-.04	ns
	Christian	3.14	.54	853		
Curious about the world	No religion	3.44	.55	1175	-.05	*
	Christian	3.49	.52	853		
Pro-Environmental	No religion	2.86	.69	1175	-.07	*
	Christian	2.93	.69	853		
Leadership	No religion	2.64	.42	1175	-.11	***
	Christian	2.75	.43	853		
Problem Solving	No religion	2.62	.49	1175	.01	ns
	Christian	2.61	.50	853		
Emotionally Intelligent	No religion	2.55	.62	1175	-.11	***
	Christian	2.66	.62	853		
Diversity	No religion	3.15	.55	1175	-.03	ns
	Christian	3.18	.52	853		
Belonging	No religion	2.66	.52	1175	-.13	***
	Christian	2.79	.50	853		
Active Citizenship	No religion	3.15	.52	1175	-.08	***
	Christian	3.23	.51	853		
Spiritual and Self Reflection	No religion	2.15	.54	1175	-.77	***
	Christian	2.92	.58	853		
Resilience	No religion	2.73	.64	1175	-.19	***
	Christian	2.92	.59	853		
Responsibility and Trustworthiness	No religion	3.14	.44	1175	-.11	***
	Christian	3.24	.43	853		
Team work	No religion	3.02	.64	1175	-.12	***
	Christian	3.14	.60	853		
Satisfaction with scouting	No religion	3.14	.65	1165	-.10	***
	Christian	3.24	.63	846		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, all scales ranging from 0 to 4, with 4 being the most positive

These above group differences can be translated into the following statements:

1. Scouts with no religion score **5.4% lower on Physical Activity** than Christian scouts
2. Scouts with no religion do not score any differently on Life Skills and Employability than Christian scouts
3. Scouts with no religion score **1.4% lower on Curious about the world** than Christian scouts
4. Scouts with no religion score **2.4% lower on Pro-Environmental** than Christian scouts
5. Scouts with no religion score **4.0% lower on Leadership** than Christian scouts
6. Scouts with no religion do not score any differently on Problem Solving than Christian scouts
7. Scouts with no religion score **4.1% lower on Emotionally Intelligent** than Christian scouts
8. Scouts with no religion do not score any differently on Diversity than Christian scouts
9. Scouts with no religion score **4.7% lower on Belonging** than Christian scouts
10. Scouts with no religion score **2.5% lower on Active Citizenship** than Christian scouts
11. Scouts with no religion score **26.4% lower on Spiritual and Self Reflection** than Christian scouts
12. Scouts with no religion score **6.5% lower on Resilience** than Christian scouts
13. Scouts with no religion score **3.4% lower on Responsibility and trustworthiness** than Christian scouts
14. Scouts with no religion score **3.8% lower on Team work** than Christian scouts
15. Scouts with no religion score **3.1% lower on Satisfaction with Scouting** than Christian scouts

Figure X. Significant outcome differences between scouts with no religion and Christian scouts



Due to the limitations in the research methodology the above analysis approach cannot tell what the cause of the observed statistically significant outcome differences is – whether it is faith or a mix of influencing factors. More robust research is necessary to better understand any potential causal links.

Non-aggregated data

In the non-aggregated data, independent t-tests reveal further statistically significant findings suggesting that, unlike in the aggregated data, Christian scouts also score more highly on Life Skills and Employability (both statements). While the other outcomes are broadly consistent with the findings in the aggregated data, some average differences are too small to be significant.

Table 29. Overview of differences between scouts with no religion and Christian scouts

Life Skills and Employability	Faith	Average	Standard deviation	Sample size	Average difference	Significance
I got the chance to develop skills which will be useful to me in the future	No religion	3.27	.91	781	-.10	*
	Christian	3.37	.85	569		
I now feel more confident about getting a job in the future	No religion	2.86	.97	783	-.14	**
	Christian	3.00	.96	570		
Diversity						
I now feel more positive towards people from different backgrounds to my own	No religion	3.02	.83	507	-.07	ns
	Christian	3.09	.85	382		
Active Citizenship						
I am more likely to help out in my local area	No religion	2.92	.91	784	-.05	ns
	Christian	2.97	.91	571		
I now feel I have a greater responsibility to my local community	No religion	2.64	.94	782	-.11	*
	Christian	2.75	.96	570		
How many hours in the past 12 months have you volunteered to help other people in some way?	No religion	80.27	117.31	1175	-3.86	ns
	Christian	84.13	116.09	853		
Spiritual and Self Reflection						
I learned something new about myself	No religion	2.93	.95	783	-.12	*
	Christian	3.05	.92	569		
Resilience						
I saw that there were more opportunities available to me than I had realised	No religion	2.99	.90	782	-.04	ns
	Christian	3.03	.95	569		
I am proud of what I achieved	No religion	3.23	.94	784	-.11	*
	Christian	3.34	.85	570		
I now feel capable of more than I realised	No religion	3.19	.77	505	-.04	ns
	Christian	3.23	.73	381		

Legend: * = statistically significant at 0.05 level, ** = statistically significant at 0.01 level, *** = statistically significant at 0.001 level, ns = not statistically significant, all scales ranging from 0 to 4, with 4 being the most positive

Discussion

The aim of the present research study is to assess the impact scouting has on the 14 outcomes below in UK teens aged 14-17. This section summarises and interprets the key findings for these outcomes as well as Satisfaction with scouting among scouts.

1. Physical Activity	8. Diversity
2. Life Skills and Employability	9. Belonging
3. Curious about the world	10. Active Citizenship
4. Pro-Environmental	11. Spiritual and Self Reflection
5. Leadership	12. Resilience
6. Problem Solving	13. Responsibility and trustworthiness
7. Emotionally Intelligent	14. Team work

The impact of Scouting on the 14 impact outcomes

The results show that there are statistically significant differences between scouts and non-scouts on all 14 outcomes. While some of these differences are relative small (e.g. for Spiritual and Self Reflection and Problem Solving), others are quite large, particularly on Physical Activity and Active Citizenship (incl. volunteering hours).

While the statistically significant differences between scouts and non-scouts are encouraging, there is still considerable uncertainty as to whether these differences can be solely attributed to scouting or whether other factors are influencing these outcomes. Comparison groups, as employed in this research study, tend to increase the robustness of the research and therefore the level of certainty about the results. However, both aspects depend on how suitable the comparison group is. In this case, it is difficult to determine how suitable the comparison group is since little data is available on potentially influential factors. Data is available on location, gender, age, ethnicity, and level of engagement in other extra-curricular group activities, but data for other potentially influential factors (e.g. socio-economic status, faith, or outcome scores at baseline/before scouting) is not available across the dataset. It is thus uncertain what influence these and other factors have on the data and to what extent (if at all) they contribute to the differences in outcomes between scouts and non-scouts. Since for scouting, randomised control groups are not a particularly realistic methodology (it would be overly unnatural and therefore inappropriate to allocate teens to scouts vs non-scouts groups for extended periods of time), it is important that future comparison groups are carefully matched to provide a robust counterfactual.

The multiple regressions conducted on the 14 impact outcomes also suggest that the current data is not able to fully explain the differences in outcomes exhibited across scouts and non-scouts. The findings suggest that the present data model including five relevant predictors (scouts vs non-scouts, location/country, gender, ethnicity, and level of engagement in other extra-curricular group activities) can explain only 3-21% of the variance in the data. In other words, the characteristics from the five predictors can account for some but not all the outcome differences between the teens in this research study. In social research, where many concepts are difficult to quantify and causal relationships can be extremely complex, it is not necessary to explain 100% of the variance, but being able to explain 60% of the variance can

be considered satisfactory.[16] Future scouting research should thus attempt to increase its explanatory power accordingly through adding additional predictors into the data model (e.g. baseline data and socio-economic status) to approach the 60% 'threshold'.

Secondary research questions

1. Are longer periods of engagement in scouting associated with better outcomes and satisfaction?

Longer periods of engagement in scouting are associated with higher scores for Life Skills and Employability, Leadership, Problem Solving, Active Citizenship, Resilience, and Satisfaction with scouting, and they are associated with lower scores for Curious about the world. However, all correlations are small or very small, indicating that length of engagement in scouting is not as important for changes in the outcomes as one might expect. This finding further adds to the importance of better understanding how scouts and non-scouts differ, apart from their engagement in scouting, and how this might affect the measured outcomes.

2. Is scout engagement in more activities associated with better outcomes and satisfaction?

Scout engagement in more activities is significantly and positively associated with higher impact outcomes and satisfaction scores. The correlations are also relatively small, but larger than the associations with the length of period of engagement in scouting. This finding is encouraging as it provides some evidence towards the hypothesis that scouting is causally related to increases in these outcomes. It also suggests that the frequency of engagement in scouting is more important than the length of engagement in scouting.

3. Is there a difference in outcomes and satisfaction between male and female scouts?

Male scouts score more highly on about a third of the outcomes (Physical Activity, Emotionally Intelligent, Belonging, and Resilience), while female scouts score more highly on the other two thirds (Life Skills and Employability, Curious about the world, Pro-Environmental, Diversity, Active Citizenship, Responsibility and trustworthiness, and Satisfaction with scouting). The gender differences are however all small.

4. Is there a difference in outcomes and satisfaction between the countries of the UK?

The following statistically significant differences between the countries have been found:

- English scouts score significantly lower on Curious about the world, Pro-Environmental, Diversity, Belonging, Active Citizenship and Team work than Scottish scouts.
- Scottish scouts score significantly higher on Team work than Welsh scouts.
- English scouts score significantly lower on Problem Solving and "I now feel capable of more than I realised" (Resilience) than Welsh scouts.

However, the differences are all relatively small, ranging from .11 to .35 (0 to 4 scale).

[16] Hair, J. F. (2014), *Multivariate data analysis*, p.107

5. To what extent do other extra-curricular group activities account for differences in outcomes and satisfaction?

The number of extra-curricular group activities teens are involved in accounts for differences in outcomes and satisfaction only to a small extent, with slight variations between outcomes. However, the influence is positive across all relevant outcomes. The highest influence is observed on Spiritual and Self Reflection and Physical Activity. No influence is observed for Satisfaction with scouting and level of engagement in extra-curricular activities.

While this evidence not add much to assessing the impact of scouting, it is a crucial variable to measure as it has the potential to substantially affect the measured outcomes and having the data available means this potential influence can be included and accounted for in the analysis model.

6. Do Scouts participate in other extra-curricular group activities more than non-Scouts?

The scouts and non-scouts in this study's sample participate in extra-curricular group activities to roughly the same extent. This potentially influential variable is thus unlikely to explain the differences in outcome scores between scouts and non-scouts. While this finding is somewhat contradictory to the findings under the previous research question, the latter includes more data on additional variables (location/country, gender, and ethnicity) and is therefore better informed. However, as the effects observed are very small, they should not be given much importance.

Tertiary research questions

7. Is there a difference in outcomes and satisfaction between scouts with and without a disability?

Scouts with a disability score significantly lower on Physical Activity, Life Skills and Employability, Leadership, and Emotionally Intelligent, but score significantly higher on Pro-Environmental and Satisfaction with Scouting, compared with scouts with no disability.

8. Is there a difference in outcomes and satisfaction between different ethnicities?

The sample sizes for the individual ethnicities (except those of white ethnic background) were too small to conduct any meaningful comparisons between the ethnicities. Future research should ensure to collect sufficient data for all ethnic groups, even if the percentages somewhat divert from those actually appearing in the wider population of scouts (this can be adjusted for).

9. Is there a difference in outcomes and satisfaction between different faiths?

The sample sizes for all but two faith subgroups (No religion and Christians) are too small to be meaningfully included in the analyses. However, among those two subgroups, Christian scouts score slightly higher on Physical Activity, Curious about the world, Pro-Environmental, Leadership, Emotionally Intelligent, Belonging, Active Citizenship, Resilience, Responsibility and trustworthiness, Team work, and Satisfaction with scouting, and score considerably higher on Spiritual and Self Reflection than scouts with no religion.

Conclusion

The present research study's encouraging findings indicate that scouting may have a statistically significant positive impact on teens in the UK.

However, more robust research will be required to determine to what extent the positive differences can be attributed to scouting, as opposed to other potential influencers.

Recommendations for future research

- **A better understanding of how scouts and non-scouts differ:** The current data lacks information that allows for an assessment on how comparable the scouts and non-scouts are. Considering that the teens self-selected, there is a high risk that scouts and non-scouts differ in ways that could substantially affect the measured outcomes. Future research should ensure that scouts and non-scouts differ in no way except for their engagement with scouting, and should gather relevant information to that effect (e.g. socio-economic status, faith, or baseline data). Future research should also keep measuring involvement in other extra-curricular group activities in both scouts and non-scouts, as was done in the present research, as it is a potentially influential variable and should be included in future analysis models.
- **Tightening the measurement tools:** Beyond ensuring that the outcomes measured in the survey are aligned with the goals of scouting (e.g. by aligning it with a high-quality and up-to-date theory of change), it may be worth examining how the outcome Spiritual and Self Reflection is measured. While most questions in the survey can be scored on a scale of desirability, this outcome does not fit with the others as it includes statements for which the answers cannot be labelled as desirable or not. It is thus a less clear outcome to analyse and interpret. Lastly, making answers to key questions compulsory (e.g. the impact outcomes) and piloting the survey before launch will reduce missing data problems which can lead to the exclusion of substantial numbers of survey respondents.
- **Sample size:** The numbers of participants in this research was reasonably sufficient for most analyses (countries, conditions, and gender) but not for others (ethnicity and faith) where low sample sizes in some or most subgroups meant that no meaningful analyses across all relevant data could be made. This can be remedied either by collecting more data or by ensuring enough data is collected for all subgroups that will be analysed. Also, once more contextual data is available (as encourage above), sample sizes may need to increase further to ensure there will be enough statistical power for robust findings. As a rough rule of thumb, there should be at least 50 in each important subgroup. However, if the data waste due to missing data can be reduced, the sample sizes may need to increase considerably less, which also often means cost savings.
- **More exact research questions:** Ensure that each research question specifies sufficiently what information is needed from the data – e.g. the country comparison question does not currently specify whether to look at scouts only or both scouts and non-scouts, and the period of engagement and frequency of engagement questions ask for associations rather than causal links.

Appendix

Additional tables to: Do scouts experience improvements in the following 14 outcomes, compared to non-scouts?

Table 30. Differences between scouts and non-scouts in all 3 countries (n_s = 2086, n_n = 403)

Outcome	Group	Group average	SD	Group difference	*p*-value[17]
Physical Activity	Scouts	2.67	.76	.65	<.001
	Non-scouts	2.02	.74		
Life Skills and Employability	Scouts	3.12	.55	.51	<.001
	Non-scouts	2.61	.92		
Curious about the world	Scouts	3.46	.54	.53	<.001
	Non-scouts	2.93	.86		
Pro-Environmental	Scouts	2.89	.69	.40	<.001
	Non-scouts	2.49	1.03		
Leadership	Scouts	2.69	.43	.39	<.001
	Non-scouts	2.30	.42		
Problem Solving	Scouts	2.62	.49	.25	<.001
	Non-scouts	2.37	.52		
Emotionally Intelligent	Scouts	2.60	.63	.42	<.001
	Non-scouts	2.17	.60		
Diversity	Scouts	3.17	.54	.35	<.001
	Non-scouts	2.82	.94		
Belonging	Scouts	2.71	.51	.40	<.001
	Non-scouts	2.31	.65		
Active Citizenship	Scouts	3.19	.52	.72	<.001
	Non-scouts	2.47	.63		
Spiritual and Self Reflection	Scouts	2.48	.68	.10	.005
	Non-scouts	2.38	.65		
Resilience	Scouts	2.81	.62	.33	<.001
	Non-scouts	2.48	.73		
Responsibility and Trustworthiness	Scouts	3.18	.44	.43	<.001
	Non-scouts	2.75	.72		
Team work	Scouts	3.07	.62	.45	<.001
	Non-scouts	2.61	.99		
Sample sizes					

Legend: n_s = scouts sample size, n_n = non-scouts sample size, SD = standard deviation, outcome scale ranging from 0 to 4, with 4 being the most positive, all *p*-values smaller than .05 mean that the relevant group difference is statistically significant

Table 31. Homogeneity of variance test for countries differences ANOVA

Main aggregated data		
Outcome	**Levene statistic**	**Significance**
Physical Activity	1.443	ns
Life Skills and Employability	.543	ns
Curious about the world	7.885	***
Pro-Environmental	2.237	ns
Leadership	1.223	ns
Problem Solving	.185	ns

[17] Statistical significance at the 0.05 level means that we are 95% certain that the observed difference in the means between the data groups is a true difference (rather than a random fluctuation in the data). This threshold is widely used in social research. Significance at 0.01 means 99% certainty, and significance at 0.001 means 99.9% certainty.

Emotionally Intelligent	.344	ns
Diversity	1.568	ns
Belonging	.477	ns
Active Citizenship	3.502	*
Spiritual and Self Reflection	1.931	ns
Resilience	4.149	**
Responsibility and Trustworthiness	.105	ns
Team work	1.317	ns
Satisfaction with scouting	.863	ns
Non-aggregated data		
Life Skills and Employability	**Levene statistic**	**Significance**
I got the chance to develop skills which will be useful to me in the future	3.268	*
I now feel more confident about getting a job in the future	.519	ns
Diversity		
I now feel more positive towards people from different backgrounds to my own	.984	ns
Active Citizenship		
I am more likely to help out in my local area	2.757	*
I now feel I have a greater responsibility to my local community	.555	ns
How many hours in the past 12 months have you volunteered to help other people in some way?	2.729	*
Spiritual and Self Reflection		
I learned something new about myself	3.540	*
Resilience		
I saw that there were more opportunities available to me than I had realised	.933	ns
I am proud of what I achieved	4.133	**
I now feel capable of more than I realised	.638	ns

Survey questions

Outcome/Category	Statement
1. Physical Activity	I know what is good for my health but I don't apply it
	I take part in outdoor or physical activities every week
	During the last 7 days, on how many days were you physically active for a total of at least 30 minutes per day? Include any kind of physical activity that increased your heart rate and made you breathe heavily some of the time. This would include things like recreational walking or cycling.[a]
2. Life Skills and Employability	I know what to do if someone is physically injured
	Others tell me I have good communication skills
	A range of different career options are open to me[a]
	I got the chance to develop skills which will be useful to me in the future[ab]
	I now feel more confident about getting a job in the future[ab]

3. Curious about the world	I am interested in learning new things
	I'm not interested in doing any more learning[a]
	Studying to gain qualifications is important to me[a]
	Education is worthwhile[a]
4. Pro-Environmental	I do things to help the environment every day
	I like spending time in nature
5. Leadership	I can complete tasks within the given deadline
	I know how to plan and organise activities with others
	I often do my own thing
	I take a positive attitude toward life
	Responsibility is better left to others
	I do not take the lead in activities
	When my friends are having trouble, I am responsible for being positive
	I do everything myself when I am in charge of a group or team
6. Problem Solving	I do things without thinking about them first
	I look at a problem from many different viewpoints (my own, my friends, my parents, etc.)
	I can help others to find solutions to their problems
	Others find solutions to problems quicker than I do
	I am known to "think outside the box" when I solve problems
7. Emotionally Intelligent	I am quiet and shy and I don't show my feelings to others
	I know the impact of my behaviour on myself and others
	It is best to deal with criticism on your own and not share it with others
8. Diversity	I appreciate opinions that are different from my own
	I interact with people who are different from me
	I like talking to people who have different beliefs than me
	I now feel more positive towards people from different backgrounds to my own[ab]
9. Belonging	My community accepts who I am
	I am part of a wider global community
	I am proud of my community
	The groups I am part of value my contribution
	I rely on myself most of the time; I rarely rely on others
10. Active Citizenship	It's not really my problem if my neighbours are in trouble and need help
	It is important to me to contribute to my community and society
	I volunteer in my community
	At the next General Election (where you are old enough to vote) how likely are you to vote? 10 means you would be absolutely certain to vote, and 0 means that you would be absolutely certain not to vote.[a]
	I am more likely to help out in my local area[ab]
	I now feel I have a greater responsibility to my local community[ab]
	How many hours in the past 12 months have you volunteered to help other people in some way? This could be through volunteering as a Young Leader, doing a community impact project with your Unit or other volunteering opportunities outside of Scouting.[ac]
11. Spiritual and Self Reflection	My life has meaning
	Spiritual beliefs are not important
	My values guide my actions
	I don't have a religious faith
	I learned something new about myself[ab]
12. Resilience	I always try to do my best in everything I do
	It is OK to stop trying when things are too difficult
	My friends would say that I am a confident person
	My belief in myself gets me through hard times
	I saw that there were more opportunities available to me than I had realised[ab]
	I am proud of what I achieved[ab]
	I now feel capable of more than I realised[ab]

13. Responsibility and trustworthiness	My friends would say that I am an honest person
	I stop any bullying when I see it
	If I say I will do something, I always keep my promise no matter how inconvenient it might be
	Earning the trust of others is important
	I try to obey the law even when I don't agree with it
	I don't care about other people's possessions and property
14. Team work	I like working with other people on group projects
	I can accept decisions taken by a group
15. Satisfaction with Scouting	How likely are you to recommend Scouting to a friend?
	How enjoyable has your Scouting experience been overall?[a]
	Would you like to continue in Scouting as an adult volunteer?[a]
	My views have influenced decisions in Scouting locally[a]
16. Participation (these questions are not aggregated)	Are you a member of, or are you taking part in, any of the following groups? (Arts group (choir, dance group, etc.), Religious group (e.g. church group), Club or sports team (outside of Scouting))
	Please select the year you started Scouting
	How often in the last twelve months have you taken part in the following activities through Scouting? (International Scouting experience, Outdoor/adventurous activites, Helping others in your local community, Badge work, Reflection on your own attitudes, faith or beliefs, Spending time with people from backgrounds that are different from my own, Working in teams, Making decisions and taking leadership roles, Camping)
	Do you take part in the Young Leader scheme in Scouting?[a]
17. Demographics (these questions are not aggregated)	Date of Birth (scouts), 14-17 age bracket (non-scouts)
	Gender (Male, Female, Other)
	Scouting location (country)
	Scouting location (region)
	Ethnicity (White, Black, Asian, Mixed, Other ethnic group)
	Disability (Yes, No)
	Faith (No religion, Christian, Buddhist, Hindu, Jewish, Muslim, Sikh, Any other religion)

[a]UK bespoke questions

[b]Analysed separately from other outcome-related statements as no non-scouts data is available for these statements as opposed to the other outcome-related statements

[c]Analysed separately from other outcome-related statements as re-scaling the data would remove considerable meaning