



The Geographic Distribution of Volunteering Across the United Kingdom of Great Britain and Northern Ireland

Huw Dixon and Kemar Whyte

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JEL classification: C8, D1, D64

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Abstract.

In this paper we use the Understanding Society household panel survey to estimate the volume and value of volunteering across the NUTS 1 geography of the UK, namely Northern Ireland, Scotland, Wales and the 9 English regions. We find that there is considerable variation in the frequency and hours of volunteering across the UK. In the latest figures (2018-19) we find that the proportion of individuals who volunteer varies from 14.5% to 21.1% against the UK average of 17.4%. Using the replacement wage method, we estimate that volunteering in the UK is between 1-1.4% of GDP.

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Contents

1. Introduction	3
1. The Main Data Sources for volunteering in the UK.....	4
2.1 The Community Life Survey (CLS).....	4
2.2 Understanding society (Usoc)	6
3: The Methodology for valuing volunteering.....	8
3.1 The ONS household Satellite Account.	8
3.2 Martin and Franklin.....	10
4. Measuring Volunteering in the Nations and English regions	11
5.1. Valuing the voluntary hours.	18
5.4 A comparison of Usoc with the ONS household Satellite and CLS	23
6. Conclusion.	24
Bibliography.....	26
Appendix: Summary of UN and ILO frameworks.	28
A1.1: International Labour Organization (ILO).....	28
A.2 The United Nations	30

1. Introduction

In this paper, we use the Understanding Society survey (Usoc) to measure the spread of volunteering across the UK, in particular the 3 Nations (Northern Ireland, Scotland and Wales) and the 9 English regions which constitute the NUTS 1 geography. We are not only interested in examining the level of volunteering across the UK, but also its value in economic terms and its contribution in terms of economic value relative to GDP. Volunteering is usually outside of the production boundary used to define GDP, along with household production. The ONS (Office for National Statistics) Household satellite accounts have measured volunteering within the broader context of other non-market activities such as household work and childcare. The latest Household Satellite account was published in 2018 and uses data up to 2016, which estimated both the volume and value of volunteering for the UK as a whole. However, the estimates were not broken down within the UK and were also based on the Citizenship survey (CS), which was a survey that was restricted to England, as is its successor the Community Life Survey (CLS). In contrast, this study uses the Understanding Society Survey up to wave 10 (2018-19) which covers the whole UK.

Whilst there have been many bespoke surveys of volunteering, the impetus to a comprehensive measurement and valuation of volunteering came from the United Nations (UN) and International Labour Organization (ILO), which have provided guidelines as to how to collect data on volunteering and integrate it into the System of National Accounts (SNA). In the appendix we provide a summary of some of the main principles and guidelines from these bodies. The ILO has produced a template for a question on volunteering which has served as the model for the questions contained in Understanding Society, albeit in an abbreviated form. The ILO recommended including the voluntary work module within the labour force survey. This recommendation has not been followed in the UK, with the questions appearing from time to time in Usoc, CS and CLS. Also, the questionnaires have been limited in their scope, without any explicit reference to the field of volunteering in terms of the Standard Industrial Classification (SIC). For studies of volunteering in other countries other than the UK, see Sajarda and Serra (2011), Salamon et al

(2013), Australian Bureau of Statistics (ABS) (2015, 2018), Johns Hopkins CCSS (2017, 2020), Yamashita (2021).

The remainder of the paper is structured as follows. Section 2 examines the UK sources of data and the previous estimates of volunteering contained in the ONS household satellite accounts. In section 3 we discuss existing methods for imputing value to volunteer hours. In section 4 we present the main results, the NUTS 1 estimates both in terms of the volume of volunteering and the value that represents in terms of imputed GVA/GDP at the NUTS 1 geographies. Section 5 concludes.

1. The Main Data Sources for volunteering in the UK.

There are two main data sources in the UK: The Community Life Survey (CLS) and Understanding Society (UsoC). There was also the Citizenship Survey (CS) which was discontinued in 2014, which was used by the ONS to construct the Household Satellite account data on volunteering (the latest version published 2018). The Citizenship survey can be regarded as the predecessor to the current CLS. We will first describe in some detail the relevant parts of these surveys.

2.1 The Community Life Survey (CLS).

This is an English survey. This was used extensively in Martin and Fanklin (2022) for their UK study of NPIs and volunteering in the context of productivity. The latest survey was conducted April 2020 to March 2021 and surveys people aged 16+. It has been conducted by Kantar for the Department for Digital, Culture, Media and Sport (DDCMS) since 2012. The details about the survey can be found in the [technical report](#) published by Kantar. In the latest version, there were 32,000 invitations sent out (using Royal Mail Postal address file – PAF). There were 7,8008k online responses and 2,400 paper responses (total 10,200). The sample was stratified by ethnicity and expected response rate.

Occupation details were collected for the respondent and were coded according to the Standard Occupational Classification (2010). This was carried out by coders at Kantar using the computer assisted coding process CASCOT. Respondents were also coded according to Standard Industrial Classification (2010) and NS-SEC was derived from industry and occupation details. In addition, each respondent was linked to the 19 socioeconomic variables.²

Formal volunteering refers to those who have given unpaid help to groups or clubs, whilst *informal* volunteering is giving unpaid help to individuals who are not a relative (from babysitting to collecting groceries).

The output looks at both formal and informal volunteering and has three levels of output: “once in the last 12 months” and “at least once per month”, along with “hours in in the last 4 weeks”.

The formal volunteering activities are divided into the following 10 “citizenship classifications”:

Table 1: Citizen Classes identified in the Community Life Survey.	
citizenship classification	Examples
Children’s education/schools	Parent Teacher Associations, School governor, Supporting fairs and fundraising, Helping in school, Running pupils’ clubs)
Youth/children’s activities (outside school)	Youth clubs, Sports clubs, Hobby or cultural groups for children)
Education for adults	Attending or teaching classes, Mentoring, Cultural groups, Students Union, College governor)
Sport/exercise (taking part, coaching or going to watch	Sports clubs or groups (e.g., football, swimming, fishing, golf, keep-fit, hiking), Supporter clubs)
Religion	Attending a place of worship (church, chapel, mosque, temple, synagogue),

² Region (formerly Government Office Region), Urban/rural indicator, Percentage of households in the Ward headed by someone from a non-white ethnic minority group, Inner city PSU indicator, Police Force Area, ACORN classification, ONS ward classification, Health board Primary Care Organisation, LSOA area, ONS district level classification, Output area classification Index of Multiple Deprivation for England, Income deprivation for England, Employment deprivation for England, Health deprivation for England, Education, Skills and Training deprivation for England, Barriers to housing and services deprivation for England, Crime and disorder deprivation for England, Living and environment deprivation for England.

The Geographic Distribution of Volunteering across the UK

	Attending faith-based groups, Saturday/Sunday School)
Politics	Membership of, or involvement with, political groups, Serving as local councillor)
Older people	Involved with groups, clubs or organisations for older people e.g., Age UK, Pensioner's clubs, visiting, transporting or representing older people)
Health, Disability and Social welfare	(e.g., Medical research charities, Hospital visiting, Disability groups, Social welfare (e.g. Oxfam, NSPCC, Samaritans, Citizens Advice Bureau), Offering respite care, Self-help groups (e.g. Alcoholics Anonymous))
Safety, First Aid	(e.g., Red Cross, St. Johns Ambulance, Life Saving, RNLI, Mountain Rescue, Helping after a disaster)
Other groups and activities nec	

Sports, Membership groups (religion, politics) and Education (Children and adult) make up over 70% of volunteering in the CLS over the period 2016-2020.

The CLS is a very useful source of data. Whilst it does not include data linking volunteering directly to the SIC, the activities breakdown has been used by Martin and Franklin (2022) to make a judgemental link to allocate total volunteering hours to the SIC. However, the survey is quite small compared to Usoc and the Labour Force Survey, with less than 10,000 respondents. Whilst it does cover the 9 English regions, it does not include any data from the Nations of Northern Ireland, Scotland and Wales.

2.2 Understanding society (Usoc)

The Essex University based Understanding Society Survey is a longitudinal panel of 40,000 households which has included a module on voluntary work in some “waves” (each wave corresponds to a 12 month cycle). The main advantages of Usoc over the CLF are its larger sample size and wider coverage. The Usoc covers the whole UK, not just England.

The questions on voluntary work were included in waves 2 (2010-11), 4 (2012-12), 6 (2014-15), 8 (2016-17), 10 (2018-19) and are scheduled to be in wave 14 (2022/23) which is currently in the field.³

Usoc's precursor was The British Household Panel Study (BHPS), which started in 1991 and had 18 waves up to and including 2006 (understanding society started in 2010/11). The BHPS also had questions on volunteering every two years.

We can take the "volunteering module" from Wave 10.⁴ The following 3 questions were asked:

Volun: have you done any volunteering on the last 12 months (yes/no)

Volfreq: How often? A variety of options explored using show cards:

- 1 On 3 or more days a week
- 2 Twice a week
- 3 Once a week
- 4 Once a fortnight
- 5 At least once a month
- 6 Quite often but not regularly
- 7 Just a few times
- 8 One-off activity
- 9 You helped or worked on a seasonal basis?

Volhrs: how many hours in the last 4 weeks?

The question **Volfreq** asks for a combined total across activities for different types of volunteering (possibly with different organisations).

The question **Volhrs** has the additional detail "And in the last 4 weeks approximately how many hours have you spent doing unpaid or voluntary work for any organisation? If you volunteer for more than one group or

³ . It was not included in Waves 11-12, with questions related to the Covid Pandemic given priority over volunteering questions in Wave 12.

⁴ See [wave 10 questionnaire](#), pages 479-481.

agency, please total the time spent in all groups together”. The respondent is expected to specify the number of hours, to the nearest whole hour.

The advantage of Understanding Society (Usoc) is that the question **Volhrs** gives a measure of hours volunteered whereas many surveys simply have a frequency question.

What is missing from Usoc is any information about the nature of the volunteering or indeed anything to allocate it across the SIC. One possibility, which we explore below, is to combine it with the English data from the CLS and use the same method as in Martin and Franklin (2022).

3: The Methodology for valuing volunteering

Given that we have estimates of the volume of volunteering in terms of total hours, in this section we will address the issue of how it might be valued. Here we will first review the ONS methodology adopted for the Household Satellite Accounts and secondly the more recent Martin and Franklin (2022) paper which shared a lot of the ONS methodology but applied it to more recent data.

3.1 The ONS household Satellite Account.

The last satellite account including voluntary work was published in 2018 and used data up to 2016. The methodology is outlined in [Chapter 8 Home Production and Volunteering Services](#). The satellite account based its estimates of volunteering on The [Citizenship Survey](#) which was discontinued in 2014. The 2018 satellite account imputed the data for 2016.⁵

In the household satellite account, volunteering is just one of several types of unpaid work included in e-GDP (others being housework, childcare etc), where e-GDP is the “extended” GDP which includes activities beyond the normal production boundary. Volunteering is the smallest by far, making up just 2-3% of the unpaid work total, or about £24bn in current prices during 2016.

⁵ “Value of unpaid volunteering for 2016 has been estimated using changes in participation rates to extrapolate the 2015 estimate due to change in comparability of the survey data.” (Note 1, Figure 1 Household satellite account, UK: 2015 and 2016).

The ONS approach was explained in [Household Satellite Accounts – Valuing Voluntary Activity in the UK](#) (2013). It follows the recommended method of the ILO, by using the replacement wage approach. The volunteering is valued at the shadow wage of what it would cost to replace the volunteer with a market replacement. The main alternative is to use the opportunity cost method, that is, value each household's time using its hourly wage rate. With Usoc we are able to calculate the opportunity cost measure for comparison (unlike CLS which does not include income data). However, the replacement wage method is preferred for several reasons. First, the volunteering may have little to do with the formal employment of the household member: being a referee or making tea and sandwiches at a sports event may not be linked to employment. Second, volunteering is done by the retired or others not in employment (for example, university students). For these there is no market wage to measure opportunity cost. The ONS methodology uses an appropriate wage from the ONS Annual Survey of Hours and Earnings (ASHE) to value voluntary activity.

In essence, the opportunity cost approach values the gain to the contributor, rather than to the recipient of the output. They do not show the value of the output being produced, but the replacement cost approach shows how much the recipient organisation would have to pay to replace the volunteering. It provides an imputed wage cost to add to the value added of the organisation.

The ONS employed the CS. The citizenship categories from Table 1 are mapped onto types of activity that can be linked to median wages of specific work (main groups in ASHE) as shown in Table 2.

Table 1: Types of voluntary activity ONS 2013

Citizenship Categories	Type of Activity (ASHE)
Raising Money	Clerical and Secretarial
Leading a Group	Professional
Organising an Event	Clerical and Secretarial
Visiting People	Personal and Protective
Befriending or Mentoring People	Personal and Protective
Giving Advice, information or Counselling	Personal and Protective
Secretarial, Admin or Clerical	Clerical and Secretarial
Providing Transport	Personal and Protective
Representing	Professional
Campaigning	Professional
Other Practical Help	Personal and Protective
Any Other Help	Personal and Protective

Note that the purpose of the Household satellite account was to provide an estimate of the value of volunteering, and no attempt was made to allocate the volunteering across the SIC. The purpose of Table 1 is to link the citizenship categories to the appropriate reference wages from ASHE using the types of activity. Thus, the citizenship categories of organising an event and raising money are both associated with the ASHE category “Clerical and Secretarial”.

3.2 Martin and Franklin (ESCoE 2022).

Since the last ONS household Satellite account was constructed, the CS was discontinued and replaced with the CLS which Martin and Franklin (2022) use to gather information on volunteering. Their paper focusses on productivity, but has important and original insights into the measurement of volunteering and its value as well as how to better measure the “sum of costs” from a national accounts perspective. This is a rather different focus to the current paper, but deserves a more detailed treatment, in particular how to allocate volunteering across the SIC.

The total number of volunteer hours is calculated using the same basic method as was used in the ONS household satellite accounts. The CLS gives

participation rates by age which are used to get estimates of total hours by age group. These are then matched with the UK demographics for each age group to give us a total for the UK. Note that this approach assumes that the English sample of the CLS is representative of the whole UK. Whilst England is of course the bulk of the population, the volunteering behaviour in the rest of the UK does appear to be significantly different according to the Usoc data (see Table 3 below).

The allocation of (formal) volunteering across industries is also done using the CLS, where respondents indicate the type of activities in which they volunteer. They then map this onto the 13 relevant SIC industries: mostly there is a 1-1 mapping, but in some cases the activity is allocated (evenly) across two or three industries.⁶

The method used to value our estimate of volunteering is using a wage. Our primary wage will be a replacement wage in line with the ONS practice, but we will also exploit the information in Usoc to measure the replacement wage for comparison. When combined with the data on hours, this replacement wage will generate an imputed income received by the volunteer in the household sector. The imputed income will be “spent” by the same household on the “output” of the organisation. The organisation will receive the imputed expenditure, which it will pay to the household. The value of the volunteering hours will thus appear as imputed income, output and expenditure.

The organisations involved will mainly be in NPISH, but also the Government and others. For example, volunteering in education might take the form of being a school governor in a local authority school, or being a voluntary assistant in a charitably funded Madrassa. Martin and Franklin (2022) estimate that 58% of volunteering time is allocated to NPISH.

4. Measuring Volunteering in the Nations and English regions

In this section we draw together some of the main themes we have reviewed and construct a trial estimate of the value of volunteering. Our main source is

⁶ See Martin and Franklin (2022), p.20 Table 2.

Understanding Society (Usoc), using the data in the five most recent waves of the survey that are available and cover volunteering, which take us from 2011 to 2019.⁷ However, we need to combine this with the Community life Survey (CLS) conducted each year by the Department of Culture Media and Sports (DCMS) which covers only England, and also demographic data from the Census for 2021. As we outlined before, the Usoc data is the best suited to provide an estimate for the whole of the UK including Northern Ireland, Scotland and Wales. In our trial, we focus on the geographical distribution of volunteering at the NUTS 1 level across the UK. This is a relatively novel approach, as previous work has tended to focus on the distribution across age ranges. Of course, you can divide the population in different ways, and again Usoc is a rich source since it includes detailed information about individuals and households that could be used to sub-divide the population (for example by gender, ethnicity, income).

Our first step is to use the frequency of volunteering (Volfreq) question outlined in section 3.2 above. Following the ONS household Satellite, we will focus on “frequent volunteers” who answer yes to option 5 “At least once a month”. We have chosen the age-ranges to be the same as the equivalent table in the CLS report. The Usoc data is presented in Table 3 below.

Our main focus will be on the geographic breakdown, which we can see displays considerable variation in Table 3. In the South East and West of England, volunteering rates are predominantly in the 20-25% range, whilst in Wales and Northern Ireland they are predominantly in the 15-20% range.

Rather than using the proportions of the Usoc sample, we have taken the population of over 16s from the UK population data, using the 2022 census. We take the populations of each NUTS 1 region from Census 2022 and use these to weight the regional frequencies in Table 3, which yields the totals shown in Table 4. These sum to the UK total shown in the next to last row of Table 4, which is within which 0.2-0.3 pp of the Usoc data shown in the bottom row (repeating the top row of Table 3). What this shows is that if we combine the Usoc regional frequencies with the Census populations at the NUTS 1 level, we get a UK frequency that is very close to the Usoc frequency. This shows that the Usoc sample is indeed representative from the regional perspective.

⁷ Wave 2: 2010-2011; Wave 4: 2012-2013; Wave 6: 2014-2015; Wave 8: 2016-2017; Wave 10: 2018-2019.

One issue arising from Table 3 is the high frequency of volunteering in wave 6 (2014-15), which appears to be significantly higher than in the other waves. Usoc includes “boosters”, additional households added in some waves to increase the accuracy of measurement of certain characteristics. In wave 6 there was both an Ethnic Minority Booster (EMB) and an Immigrant Ethnic Minority Booster (IEMB), the IEMB focusses on more recent immigrants and the EMB focusses on ethnicity alone. To check whether these boosters were responsible for the difference, we estimated the frequencies excluding the EMB and IEMB households for waves 6,8 and 10. The frequencies were little changed: for wave 6 we have the population frequency excluding the two boosters at 21.0%, which is slightly higher than we had with the full sample including EMB and IEMB. The frequencies for sub-populations also changed by similarly small amounts. The explanation of the relatively high frequency for 2014-15 must be found elsewhere and lies beyond the scope of this paper.

We can use the same method to get the breakdown by age and by sex, or indeed any other partition of the data. We will continue to focus on the regional breakdown for the purposes of this paper, since we believe that this aspect of Usoc is most distinctive. Combining the Usoc results with the Census data appears to be a good test of the robustness of the Usoc results.

Table 3 Summary of Frequency data in Usoc

VOLFREQ: AT LEAST ONCE A MONTH (PERCENTAGES)						
		Wave 2	Wave 4	Wave 6	Wave 8	Wave 10
TOTAL		18	19.1	20.8	18.3	17.4
SEX	Men	17	18.1	19.9	17.5	15.9
	Women	18.8	19.8	21.5	18.9	18.5
AGE	16 to 24	14.4	14.5	14.8	14.6	13.1
	25 to 34	12	11	9.8	9.8	8
	35 to 49	26.6	25.1	24.5	23.8	22.7
	50 to 64	25	25.4	25.7	24.8	26.5
	65 to 74	15.2	16.9	17.4	18.5	19.8
	75 and over	15.2	15.7	17.1	17.0	16.9
ETHNICITY	White	18.5	21.1	21.1	19	18.2
	Asian	12.8	14.3	16.6	13.7	11.6
	Black	17	18.4	21.3	17	16.3
	Mixed	18	19.8	25	17.7	18.1
	Other	14.4	20.4	28.1	19.8	15.9
NUTS 1	North East	14.4	16.5	17	18.3	17
	North West	15.8	16.4	19.5	15.8	14.7
	Yorkshire and the Humber	17.3	16.7	19.3	15.6	15.7
	East Midlands	17.6	18.9	20	18.3	16.7
	West Midlands	15.8	16.7	18.6	17.2	16.3
	East of England	19.5	21.1	24	19.8	19
	London	17.1	19	22.4	18.8	18
	South East	23.5	24	23.2	21	21
	South West	21.9	22.8	25.6	24.2	21.1
	England					
	Wales	14.9	15.8	18.1	16.1	14.9
	Scotland	17.8	18.6	20.8	18.2	17.0
	Northern Ireland	16.9	19.0	16.5	15.0	14.5

Table 4: The Geographic Breakdown of Usoc and Census 2022

NUTS 1	CENSUS	WAVE 2	WAVE 4	WAVE 6	WAVE 8	WAVE 10
NORTH EAST	3.99%	0.57	0.66	0.68	0.73	0.68
NORTH WEST	10.97%	1.73	1.80	2.14	1.73	1.61
YORKS/ HUMBER	8.23%	1.42	1.37	1.59	1.28	1.29
EAST MID	7.25%	1.28	1.37	1.45	1.33	1.21
WEST MID	8.90%	1.41	1.49	1.65	1.53	1.45
EAST ENG.	9.34%	1.82	1.97	2.24	1.85	1.77
LONDON	13.43%	2.30	2.55	3.01	2.53	2.42
SOUTH EAST	13.74%	3.23	3.30	3.19	2.89	2.89
SOUTH WEST	8.45%	1.85	1.93	2.16	2.04	1.78
WALES	4.71%	0.70	0.74	0.85	0.76	0.70
SCOTLAND	8.15%	1.45	1.52	1.69	1.48	1.38
NI	2.83%	0.48	0.54	0.47	0.42	0.41
UK	1	18.2	19.2	21.1	18.6	17.6
USOC		18	19.1	20.8	18.3	17.4

From Tables 2 and 3, we can see that there is a considerable difference in “frequent” volunteering across the UK. For example, across the UK as a whole, the percentage of people volunteering at least once a month in 2018-19 (wave 10) was 17.4% according to Usoc. However, this probability ranged from 14.5% in Northern Ireland to 21.1% in the Southwest of England. A similar range of outcomes can be found in all waves: the lowest volunteering rate is over ¼ lower than the highest. This indicates that it is important to look at the regional dimension and it should not be assumed that the UK is geographically uniform when it comes to volunteering.

The next step is to obtain the total hours for the UK and across each of the NUTS 1 areas. This is done from the **Volhrs** question, which asks how many hours have been done of formal volunteering in the last 4 weeks. Some households will have answered this question with a zero. That is because they answered “Yes” to the question **Volun** (have you done any volunteering in the

last 12 months) but have not done any volunteering in the last 4 weeks. The number of observations (Obs) gives the number of households who answered 1 or more hours (i.e., excluding the 0s). The resultant mean hours are given in Table 5.

Table 5: Mean hours

	Obs	mean	std. dev.
Wave 2	6694	15.1	21.2
Wave 4	6094	15.2	20.9
Wave 6	5629	15.4	21.9
Wave 8	5112	14.8	20.6
Wave 10	4462	14.2	19.0

The way we proceed is to combine the Usoc figures with the Census data. Since the frequency breakdown by region accords with the Usoc aggregate, this gives us confidence that the combination of Usoc data and the Census will give us an accurate breakdown for hours. We have the proportion of the population who volunteer at least once per month, and we also have the data on the mean hours of those who volunteered one hour or more. This can then be blown up using the Census data on households aged 16 or over to get a “total hours” for the UK. We can then breakdown the total hours across the UK geography using Table 4.

The steps we follow to obtain the UK total are the following, with the illustration of the figures from Wave 10.

Step 1: Probability of Volunteering = Freq (Usoc)	Wave 10 = 0.174
Step 2: Hours conditional on volunteering = mean hours (Usoc)	Wave 10 = 14.2
Step 3: Mean hours per person = freq*mean-hours	Wave 10 = 2.47
Step 4: Total UK hours = UK population (over 16)*Mean hours	Wave 10 = 2.47*54,293,190

This gives us a total volunteering hours over a 4 week period, which we can use to estimate the annual figure. Each wave of the Usoc survey is carried out over

a 12-month period, so that the total 4 weeks can be seen as “representative”. In this case, we might simply multiply the four-week total by 52/4 (which equals exactly 13) to obtain the annual figure. However, it is more common to adjust the total to explicitly adjust for holidays (both public and annual leave). A simple possibility is to allow for 48 active weeks, which then gives us a multiplier of 48/4 which equals 12. Following this common leave-adjusted method for all five waves gives us the following totals for the UK and across the 12 NUTS 1 areas, as shown in Table 6:

Table 6 Hours by Region (bn)					
NUTS 1	Wave 2	Wave 4	Wave 6	Wave 8	Wave 10
North East	0.07	0.08	0.08	0.07	0.06
North West	0.19	0.21	0.23	0.19	0.18
Yorkshire and the Humber	0.15	0.16	0.17	0.15	0.13
East Midlands	0.13	0.14	0.15	0.13	0.12
West Midlands	0.16	0.17	0.19	0.16	0.14
East of England	0.17	0.18	0.19	0.16	0.15
London	0.24	0.25	0.28	0.24	0.22
South East	0.24	0.26	0.29	0.24	0.22
South West	0.15	0.16	0.18	0.15	0.14
Wales	0.08	0.09	0.10	0.08	0.08
Scotland	0.14	0.15	0.17	0.14	0.13
NI	0.05	0.05	0.06	0.05	0.05
UK	1.77	1.89	2.09	1.76	1.61

This method could be employed further back if we use the British household Panel data. We compare the UK figures in Table 6 with the CLS and the ONS household satellite account estimates below, in section 5.4 Figure 3.

5.1. Valuing the voluntary hours.

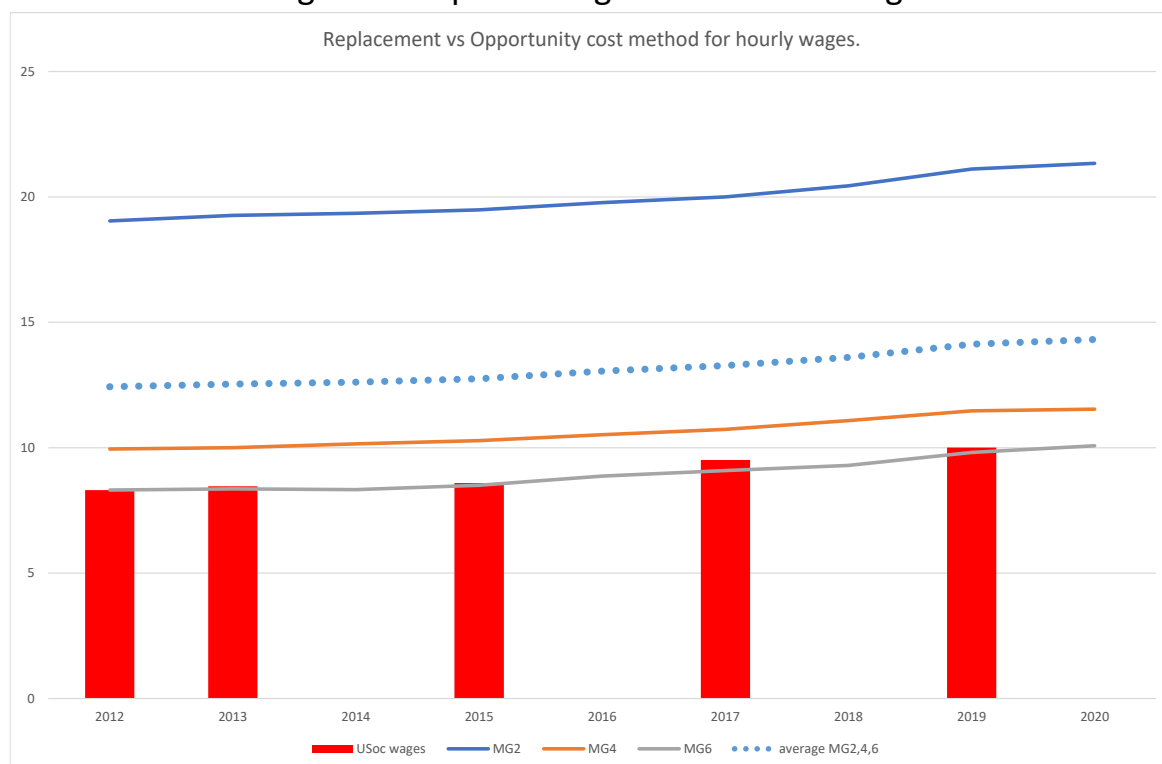
Having used Usoc and the Census to provide estimates of volunteering hours down to NUTS 1, we will now proceed to estimate the value of the volunteering in monetary terms so that they could in principle be included in GDP. We will do this in two ways. Firstly, following the ONS, we can use the preferred replacement wage method. Secondly, using the Usoc household data, we can also get a measure of the “opportunity cost” method based on the income of the individual volunteers. The Usoc variable we use is “Basic hourly wage” which is provided for each of the people who are frequent volunteers. The variable name in Usoc is “basrate”, which is described as “basic pay hourly rate” and comes from the question: “What is your hourly rate of pay for your basic hours of work?”.

Turning first to the replacement wages, three reference “main groups” are used from the ASHE database: Professional (MG2), Clerical (MG4) and Personal (MG6). In Table 7 we have updated data provided in ONS 2013: the data up to and including 2012 is contained in the original, the data from 2013 to 2020 is added from the latest ASHE data. The figure given is the median hourly gross wage. There are also columns giving averages of pairs and all three MGs.

Table 7: Hourly imputed wages								
Year	Professional MG2	Clerical MG4	Personal MG6	MG2 and MG6	MG4 and MG6	MG2 and MG4	All three	Usoc
2000	14.9	6.76	5.53	10.22	3.38	10.83	9.06	
2001	15.56	7.02	5.73	10.65	3.51	11.29	9.44	
2002	16.13	7.55	6.13	11.13	3.78	11.84	9.94	
2003	16.7	7.85	6.47	11.59	3.93	12.28	10.34	
2004	17.12	8.01	6.74	11.93	4.01	12.57	10.62	
2005	18.13	8.33	7.02	12.58	4.17	13.23	11.16	
2006	18.43	8.58	7.28	12.86	4.29	13.51	11.43	
2007	18.85	8.92	7.53	13.19	4.46	13.89	11.77	
2008	19.36	9.18	7.86	13.61	4.59	14.27	12.13	
2009	19.86	9.5	8.15	14.01	4.75	14.68	12.50	
2010	20.12	9.66	8.26	14.19	4.83	14.89	12.68	
2012	19.04	9.95	8.31	13.68	4.98	14.50	12.43	8.31
2013	19.26	10.00	8.36	13.81	5.00	14.63	12.54	8.46
2014	19.35	10.15	8.33	13.84	5.08	14.75	12.61	
2015	19.48	10.28	8.50	13.99	5.14	14.88	12.75	8.59
2016	19.77	10.52	8.87	14.32	5.26	15.15	13.05	
2017	20.00	10.73	9.09	14.55	5.37	15.37	13.27	9.51
2018	20.44	11.08	9.29	14.87	5.54	15.76	13.60	
2019	21.11	11.47	9.81	15.46	5.74	16.29	14.13	10.00
2020	21.34	11.54	10.08	15.71	5.77	16.44	14.32	

Turning to the new opportunity cost measure, Usoc gives us the basic hourly rate of each volunteer. Since some volunteers may not be in employment (for example the retired or students) we include entries with zero. The mean basic hourly rates are shown in the last column of Table 7. As we can see, the mean hourly wage is very similar to MG6 and much lower than MG2 and MG4. In Figure 1, we depict all three ASHE MGs and also the arithmetic mean as lines, with the columns representing the Usoc figures.

Figure 1: Imputed wages for Volunteering.



Whilst we do not advocate the use of the opportunity cost approach, it provides a useful perspective for comparison with the usual replacement cost wages. It possibly indicates that the individuals volunteering are providing greater value added when they volunteer than when they work. Also, since the average includes those who are not employed (but do volunteer), this will be lower than if we only looked at the wages of the employed volunteers.

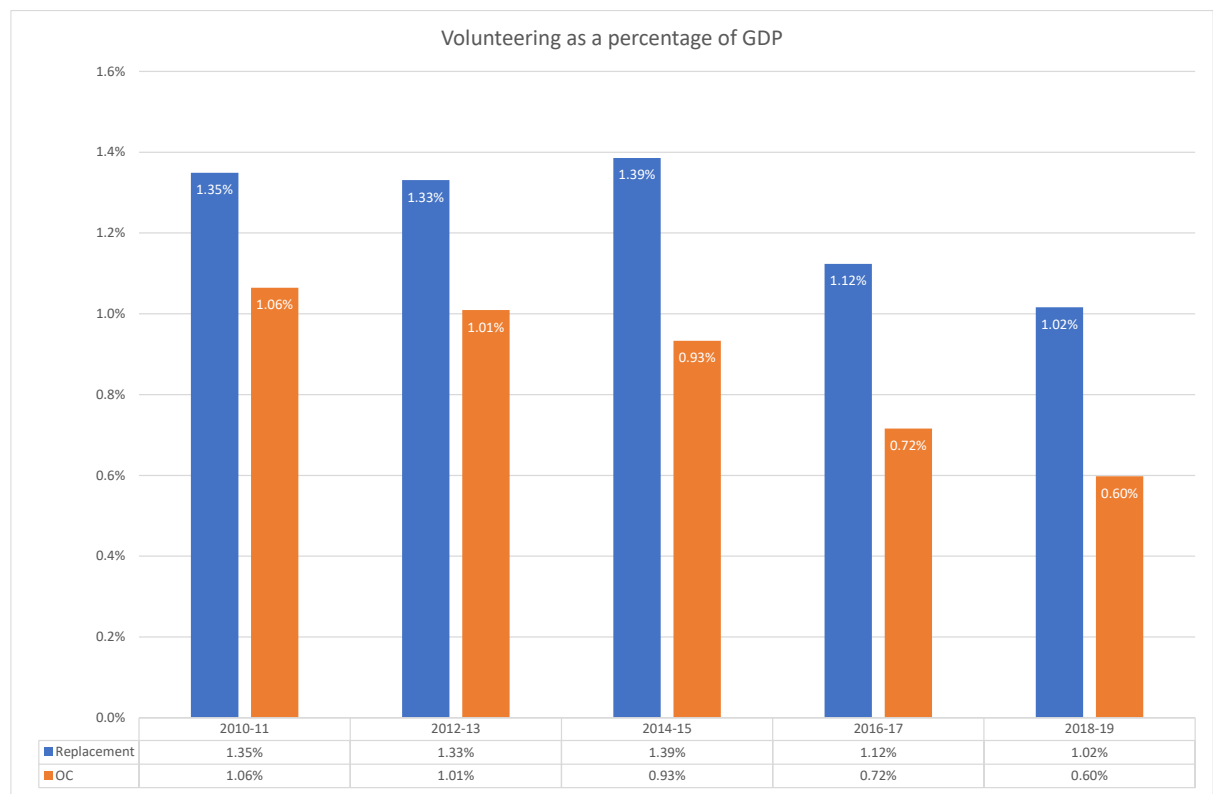
If we value the total hours using the mean across the three MGs to represent the replacement Wage, this gives us the following totals across regions and in the UK as a whole, in terms of current price £bn as shown in Table 8:

The Geographic Distribution of Volunteering across the UK

Table 8 The Value of Volunteering (£bn current price)					
NUTS 1	Wave 2	Wave 4	Wave 6	Wave 8	Wave 10
North East	0.9	0.9	1.1	0.9	0.9
North West	2.4	2.6	2.9	2.6	2.5
Yorks and Humber	1.8	2.0	2.2	1.9	1.9
East Midlands	1.6	1.7	1.9	1.7	1.6
West Midlands	2.0	2.1	2.4	2.1	2.0
East of England	2.1	2.2	2.5	2.2	2.1
London	3.0	3.2	3.6	3.1	3.1
South East	3.0	3.3	3.7	3.2	3.1
South West	1.9	2.0	2.2	2.0	1.9
Wales	1.0	1.1	1.3	1.1	1.1
Scotland	1.8	1.9	2.2	1.9	1.9
NI	0.6	0.7	0.8	0.7	0.6
UK	22.0	23.7	26.6	23.4	22.7

We also represent the total UK figure as a percentage of UK GDP at current prices. For this exercise, we give the shares both for the replacement wages as in Table 5, and also with the Usoc Opportunity cost measure. These two alternatives are shown in Figure 2.

Figure 2: Methods of imputing wages compared.

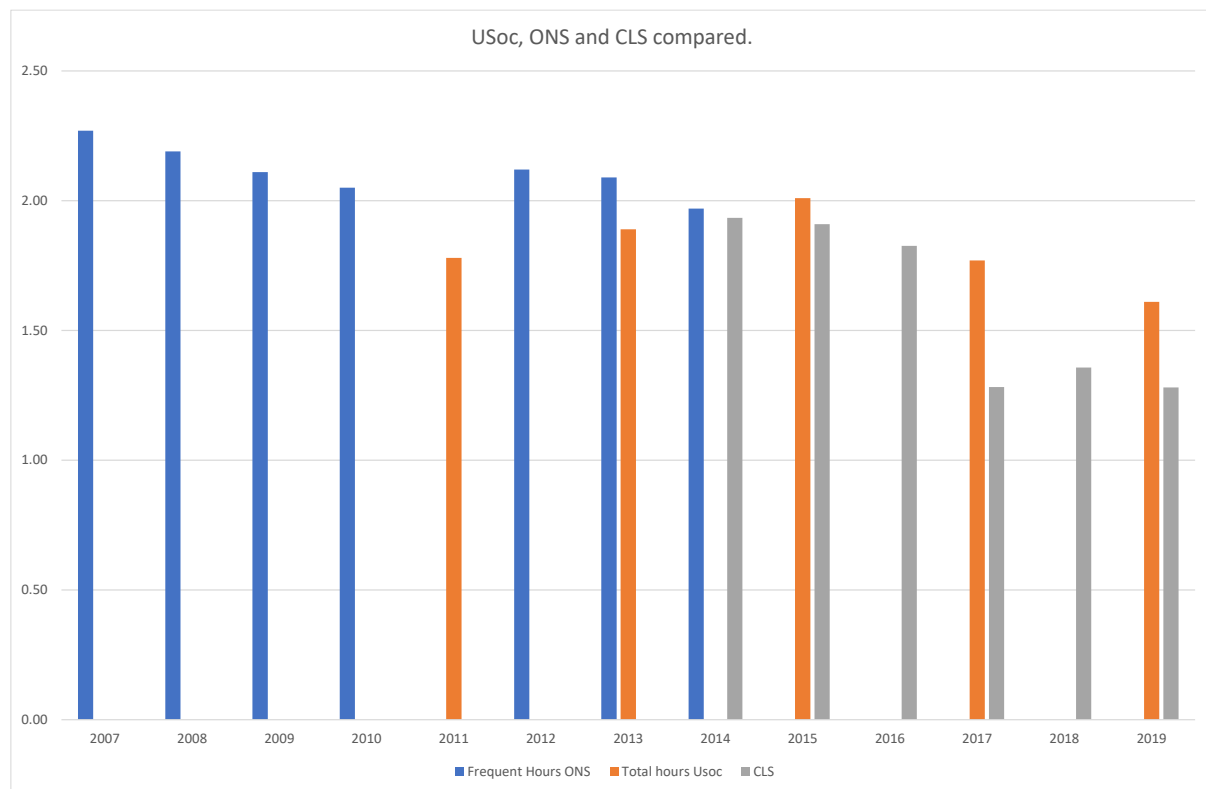


As can be seen from both measures, the ratio of the imputed value of volunteering to GDP has declined since 2014-15, especially for the opportunity cost measure which started to decline in 2010-11. The ratio of the imputed value of volunteering to GDP has declined from 1-1.4% in waves 2,4 and 6 to 0.6-1.0% in 2018-19. The GDP can also be allocated across the GVA of the Nations and regions of England using the regional shares and hours.

5.4 A comparison of Usoc with the ONS household Satellite and CLS

In this section we will briefly compare the volunteering estimates we have derived using Usoc with previous ONS estimates and the figures given by the CLS. Since the CLS just covers England, we have multiplied the figures by 1.19 to allow for the other three Nations weighted by population⁸. The comparison is given in Figure 8.

Figure 3: Comparison of estimates of volunteering.



The ONS satellite was constructed using the predecessor to CLS, so it is perhaps not surprising that they yield similar results in the one year they overlap, 2014. The Usoc figures are slightly lower than the ONS in 2013, about the same as the CLS in 2015 and significantly higher in 2017 and 2019. The Usoc figure for 2011 has no direct comparator, but is less than the ONS figures for adjacent years. The large divergence between the Usoc and CLS since 2017 is something of a concern and deserves more research that is beyond the

⁸ The population of England is 56.5 million and the UK 67m, with $67/56.5 = 1.19$.

scope of this paper. The ONS has yet to update its household satellite account and it will be interesting to see how the more recent figures compare with CLS and Usoc.

Whilst we are focussing on Usoc because of its regional emphasis, we would in general recommend the use of multiple sources for the data on volunteering. Both the CLS and Usoc are large surveys and to ignore either would mean a lot of information is lost. Usoc has a clear advantage in that it covers the whole of the UK and volunteering in the non-English Nations differs from that in England. CLS has a clear advantage in that it has a more detailed breakdown of the types of volunteering activity. The two surveys have different designs and objectives, so it is perhaps not surprising that their estimates of the volunteering differ.

6. Conclusion.

In this paper we have used Usoc to provide a primarily geographic analysis of volunteering in the UK across Northern Ireland, Scotland, Wales and the 9 regions of England (the NUTS 1 geography). Our study also updates the most recent ONS household satellite, which was based on data up to 2016, with data from Usoc including wave 10 (2018-2019).

We find large variations across the UK in terms of volunteering, both in terms of the proportion of frequent volunteers who volunteer at least once per month and hours per frequent volunteer. The difference between the highest and lowest frequency is proportionately more than 25%.

The ONS has a good track record in measuring the value of volunteering as part of its household satellite accounts. This can be integrated into the national accounts by imputing costs, income and expenditures appropriately. However, the ONS has not provided a geographical breakdown of volunteering within the UK. In this paper we have shown how this can be done by using Usoc, and we recommend that the ONS should produce experimental statistics on volunteering at the level of the 3 Nations and English regions. To do this, it will be necessary to combine the data from the CLS, Usoc, the Census and possibly other datasets.

There are further refinements to the method used in this paper. We used the UK reference wages to compute the replacement wage. However, it would be better to calculate the replacement wages at the level of three Nations and nine English regions. The ASHE dataset is very granular and this should be straightforward to do. We would also recommend that the ONS produces the “opportunity cost” valuation of volunteering. Whilst it is not the preferred methodology it provides a useful comparison and possible insights, at least for those volunteers in employment.

The main weakness in the current methodology both for the ONS and other researchers is the allocation of volunteering across SIC sectors. A proper economic analysis of volunteering requires that we know in what sectors volunteering services are employed. Solving this is a more difficult task, which requires a more detailed questionnaire⁹. Until this issue is resolved, even if we have an accurate figure for volunteering in both volume and value, it will be difficult to provide the robust and accurate allocation across SIC required for integration into national accounts and other uses.

⁹ Martin and Franklin (2022) do allocate volunteering across SIC sectors, but this is done on a judgemental basis linking the “activities” from the CLS to the SIC sectors.

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Appendix: Summary of UN and ILO frameworks.

Whilst there has been a longer history of research on non-profit institutions and in particular the role of volunteer work (for example research done at the *John Hopkins Centre for Civil Society Studies* – JHCCSS – in the 1990s), there was a substantial intensification originating from the United Nations in 2001. This resulted in supra-national organizations, including the UN, The International Labour Organisation (ILO) and Organization for Economic Co-operation and Development (OECD) developing the framework for measuring and integrating voluntary work into the system of national accounts. We will first summarise two of these: the ILO and the UN.

A1: International Labour Organization (ILO).

The ILO produced a [Manual on the Measurement of Volunteer Work](#) (2011) in cooperation with several institutions including the Johns Hopkins Centre for Civil Society. The report defines voluntary work as ““activities or work that some people willingly do without pay to promote a cause or help someone outside of their household or immediate family.” (Para 3.6). The main recommendation was:

“After careful consideration of these criteria and of alternative survey platforms, the design team in consultation with the Technical Experts Group and officials in the International Labour Organization concluded that the optimal strategy for capturing key characteristics of volunteer work consistent with the foregoing criteria would be to add a carefully designed “volunteer supplement” to national labour force surveys on a periodic basis.” (Para 2.4)

The design of the volunteer supplement is ideally aimed to capture various dimensions of voluntary work: the activity according to the International Standard of Occupations (ISCO) and mapping onto the SIC; the quantity of time spent volunteering (ideally by each activity). The data generated by the module would include the *volunteer rate* (percentage of the population); types of work performed (ISCO); *Number of hours* volunteered; *Institutional setting* (formal vs informal), Non-Profit vs government and for-profit; *Field of work* according to best fit SIC.

In terms of valuing volunteer work, the report is worth quoting in some detail:

6.6. Broadly speaking, two general approaches are available to measure the economic value of volunteer and other unpaid work.

(a) The first — the opportunity cost approach — essentially measures the economic value of volunteering to the volunteer. It does so by assigning to the hours of volunteer work the average wage that the volunteer would earn if that volunteer worked at a regular job for those same hours. In some accounts, however, analysts assume that the volunteer time is a substitute for leisure rather than work, in which case the wage assigned to volunteer work is zero.

(b) The second approach — the replacement cost approach — comes closer to measuring the value of volunteering to the recipient of the volunteer effort, and hence to society at large. It does so by assigning to the hours of volunteer work what it would cost to hire someone for pay to do the work that the volunteer is doing for no pay.

6.7. Of the two approaches, the replacement cost approach seems most relevant to the objective being sought and is the method this manual recommends. It does not mean, however, that the manual views volunteer labour as a replacement for paid labour or favours policies that replace one with the other, as has been emphasized earlier. Rather, it reflects the consensus among researchers in the field that this is the most reasonable method for estimating the economic value of volunteer inputs (see, for example, Abraham and Mackie 2005; Statistics Canada, 2005). However, this approach is not without its difficulties owing to hypothesized differences in skill and efficiency between a volunteer and a paid employee doing essentially the same job, not to mention differences in wage rates for similar work in different institutional settings (non-profit organizations, government and for-profit businesses).

This method (replacement cost) is the same as that followed by the ONS in its construction of the household satellite accounts. There are many aspects discussed in the manual. The UK has not followed the suggestion of including it in the Labour Force Survey, although the volunteering module in Understanding Society (UsoC) is clearly inspired by the manual's template.

However, the suggestion of mapping the volunteering onto the ISCO/SIC sectoral classifications has not been followed by any major UK survey.

A.2 The United Nations

The United Nations published a handbook [Satellite Account on Non-profit and Related Institutions and Volunteer Work](#) in 2018. Much of this is focussed on Non-Profit Institutions and how to treat the different types of institutions in accounts. For volunteering, the UN follows closely the ILO definition, although it goes into much more detail (see para 3.35-3.50). The UN adopts the approach of attaching the volunteer work to institutions, so that it can be combined with the non-volunteer work of the institutions:

“Given its nature as an activity performed within institutional units, organization-based volunteer work is allocated in the SNA to the same institutional sector as the unit in which it takes place.” (para 3.44).

“Organization-based volunteering” is the UN phraseology for “Formal volunteering”, and “Direct volunteering” equivalent to “Informal volunteering” (Neologism alert). Direct Volunteering is allocated to the “Third or Social Sector” (TSE). The Manual includes several decision trees to aid in the correct allocation of institutions and identification of voluntary work (e.g is work compulsory or not – if it is then it cannot be voluntary). The key variables required for a satellite account are:

- (1) the number of persons who volunteered during a particular reference period;
- (2) the number of hours they volunteered;
- (3) whether the volunteer work is direct or channelled through an organization and, if the latter, what type of organization;
- (4) the industry (field) of the organization through which the volunteer work is carried out;
- (5) the tasks performed by the volunteers; and
- (6) the monetary value represented by the work (see also ILO Manual, chap. 6).

This corresponds to the ILO approach. In terms of the replacement wage, The UN states:

“Two broadly defined methods are available for determining the appropriate replacement wage: the generalist and specialist methods. The former applies an average gross wage across a range of industries and occupations and the latter determines wages that are specific to the industry, occupation and, if feasible, skill and experience level of the volunteer work performed.” (para 4.316)

Whilst the specialist approach is recommended, it is recognised that this might not be possible, and so has the following guidelines for a generalist approach:

“To implement the generalist method, it is recommended to use the average wage for construction or repair of personal and household goods for direct volunteer work leading to the production of goods, and the average wage for social work without accommodation or other personal services activities” (Para 4.41).

Once we have valued the volunteer work, we have to integrate it into the TSE institutions with which it is associated. The UN recommends:

“The non-market output is valued on a sum of costs (operating expenses) basis, where the value of imputed volunteering is included as a cost. If this is not possible, for example due to cross-subsidisation making identification of costs difficult, then a “market price” should be imputed directly to the output (either by a replacement cost method of looking at closely related market outputs, or attempting to measure the contingent valuation to the recipient directly).

Thus for example, a charity doing X (where we deliberately leave the X unspecified) would receive income (from the government, donations, investments) some of which would be spent on wages of employees and some on intermediates. In addition, there would be volunteering. The value of this would be imputed (number of hours for each type of work done by volunteers times imputed wage). The output of the charity is then measured as the sum of wages of employees, imputed wages of voluntary work plus intermediate consumption: this represents the full value in terms of household consumption of the charitable output.

For an institution with a mix of market and non-market outputs we would add on to its standard output (or value added) the imputed costs of the voluntary work and the same value as an imputed (non-market) revenue.”

For the UN, the integration of volunteering into National Accounts relies on linking volunteering activity to organisations, which in turn are located on the SIC. These are captured by key variables 3 and 4 listed above. Lack of this information in UK data sources is a major limitation on the quality of assessing the potential impact of volunteering on GDP, since it is hard to allocate it across sectors.