Volunteer work and its links to the labour market experiences of young people

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Abbreviations

ATT	Average treatment effect on the treated
DV	Direct volunteer work
ENSESE	Enquête Nationale sur la Situation de l'Emploi et le Secteur Informel [National Survey of Employment and the Informal Sector]
GHS	General Household Survey
ILO	International Labour Organization/Office (according to context)
LFS	Labour Force Survey
NEET	Not in Employment, Education or Training
OBV	Organization-based volunteer work
PSM	Propensity score matching
SDGs	Sustainable Development Goals
UKHLS	United Kingdom Household Longitudinal Study
UNV	United Nations Volunteers programme
VW	Volunteer Work

1. Introduction

Volunteer work has been recognized as crucial for the successful implementation of the 2030 Agenda and the Sustainable Development Goals (SDGs). In the context of the ongoing COVID-19 pandemic, finding ways to facilitate the entry of young people into decent work has never been more urgent. All the indications suggest the economic fallout from the pandemic is hitting – and will continue to hit – young people particularly hard. The sectors and in types of employment young people work in are particularly affected by the pandemic. Young people are also disproportionately affected by the interruptions to education and training that have accompanied lockdown measures (ILO 2020a; ILO 2020b).

Volunteering can benefit individual volunteers, the people who benefit from the services they provide and society as a whole. This paper focuses on the benefits to individual volunteers and examines how volunteering can benefit young people at the start of their careers. Evidence on the causal impacts of volunteer work remains limited, especially its role in supporting a successful school-to-work transition for young people.

This paper examines the existing evidence and undertakes further analysis, including on the effects of volunteering on young people as they embark upon their journey to adulthood, in particular as they seek to access good jobs. The paper aims to summarize the state of existing knowledge and provide new evidence on a range of questions regarding the involvement of young people in volunteer work and its effects on their (subsequent) labour market experiences. To date, perhaps because of its status as a form of work but not of employment, the subject of volunteering has been under-documented, both in terms of the international data on the extent of different types of volunteering and the effects of volunteering itself.

This analysis addresses the following specific questions:

- What factors influence young people's engagement in volunteer work?
- What are the effects of volunteering on young people's subsequent labour market experiences?

Regarding the second question, there is a particular focus on the potential of volunteering to reduce the large numbers of young people not in employment, education or training (NEET). This policy is all the more relevant, given the adoption of the youth NEET rate as the main SDG indicator of progress in promoting decent work for young people.

Beyond these specific questions, the heterogeneity of volunteering and the variations in its determinants and effects emerge clearly. The concluding section of this paper summarizes the state of knowledge and suggests some specific lines of investigation to further our understanding in this area.

2. Young people and volunteering: what do we know?

2.1 Who are young people?

The standard definition of young people by the United Nations includes everyone in the 15–24 age group. The logic of the definition is that "youth" covers the school-to-work transition period and includes all the ages between reaching the school leaving age (or the age which implies the completion of basic education) and the completion of tertiary education.

The definition is also widely used in international statistics: SDG target 8.6 on the proportion of young people who are neither in employment, education or training explicitly refers to young people between 15 and 24 years of age, as do standardized and comparable statistics produced by the ILO and other agencies on issues related to young people. The statistics on youth involvement in volunteer work produced under the aegis of the UNV and ILO partnership for the measurement of volunteer work also use this classification.[2]

However, there are good reasons to increase the upper – and occasionally lower – bounds of this definition for the analysis in this report. The transition from education to work is no longer always complete by 24 years of age, especially if completion of transition is defined in terms of the achievement of relatively stable employment. This is the case in the recently developed ILO school-to-work indicators (ILO 2019), which uses the extended range of 15–29 years of age. As such, in the cross-country and longitudinal analyses in sections 3 and 4, the age range is extended to 29 years of age.[3]

2.2 What is volunteering and what does it look like among young people?

The term volunteering is not widely understood and is interpreted differently in different contexts. In societies where helpful actions taken towards others are normal or expected behaviour, volunteering is not easily recognized as a distinct activity. In some cases, the notion of "compulsory" volunteering can give the term negative connotations. Regardless, in 2013, the International Conference of Labour Statisticians, the global reference body in this area, defined persons in volunteer work as all people of working age, who during a short reference period, performed any unpaid, non-compulsory activity to produce goods or provide services for others, where "any activity" means work for at least one hour; "unpaid" means the absence of cash or in-kind remuneration for work done or hours worked (although volunteer workers may receive compensation or stipends); "non-compulsory" means work performed without a civil, legal or administrative requirement; production "for others" means work performed outside of the household or family of the volunteer (ILO 2013).

In terms of institutional arrangements, there are two broad forms of volunteering:

[2] A three-year project by UNV and ILO to increase the statistical measurement of volunteer work by national governments (https://ilostat.ilo.org/topics/volunteer-work/).

[3] For the longitudinal analysis using data from the United Kingdom, the lower age bound is also raised to the country's school leaving age of 16 years old.

a. Organization-based (formal) volunteer work – arranged through market and non-market organizations including groups and associations.
b. Direct (informal) volunteer work – performed directly for any household other of those of the volunteer or related family members.

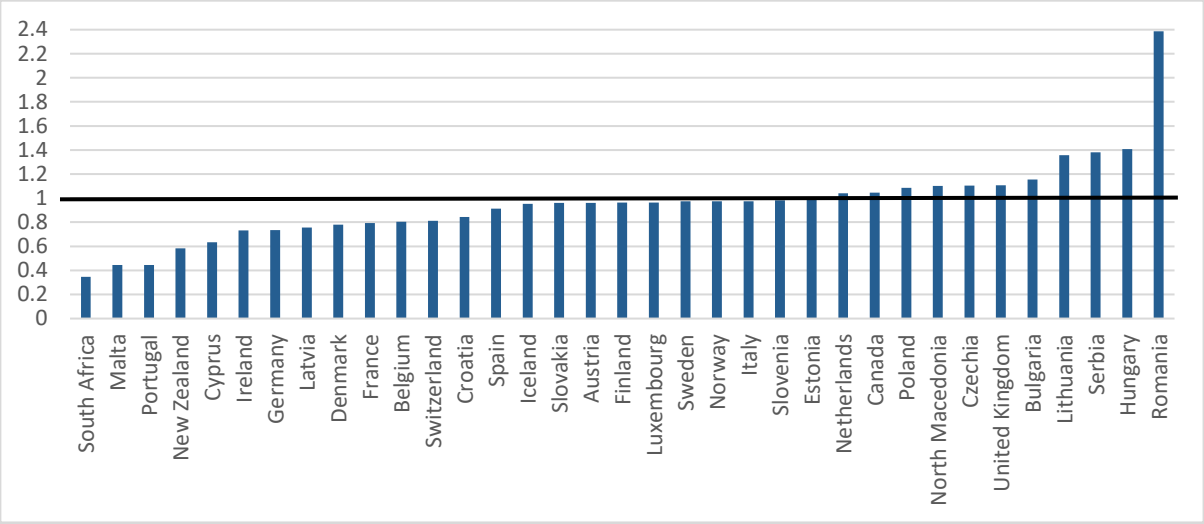
While these terms are relatively self-explanatory, the collection of accurate and above all comparable data across countries is still in its early stages.[4] Different interpretations of terms and different approaches to data collection in different parts of the world make it hard to derive an accurate picture of the global scope and scale of the phenomenon. Recent estimates suggest that the majority – around 70 per cent – of volunteering work is direct volunteering, while organization-based volunteering accounts for less than one-third. Globally, it is estimated that the non-profit workforce is equivalent to 109 million full-time workers (UNV 2018).

Regarding volunteering by age, ILO has now collated data on forms of volunteering by age for 41 countries and incorporated this into the ILOSTAT database.[5] Broadly speaking, young people are less likely to be engaged in volunteer work than adults, although this varies by country and type of volunteering. In around two-thirds (69 per cent) of the countries included in the ILOSTAT database, young people between 15 and 24 years of age are **less** likely to be involved in direct volunteering than those 25 to 64 years of age, while in just over half (56 per cent) of the countries included, young people are **more** likely than their older counterparts to be engaged in organization-based volunteering (**figure 1**). Given that direct volunteering comprises 70 per cent of total global volunteering, it is not surprising that overall, young people are a little **less** likely than older people to be engaged in this form of activity.[6]

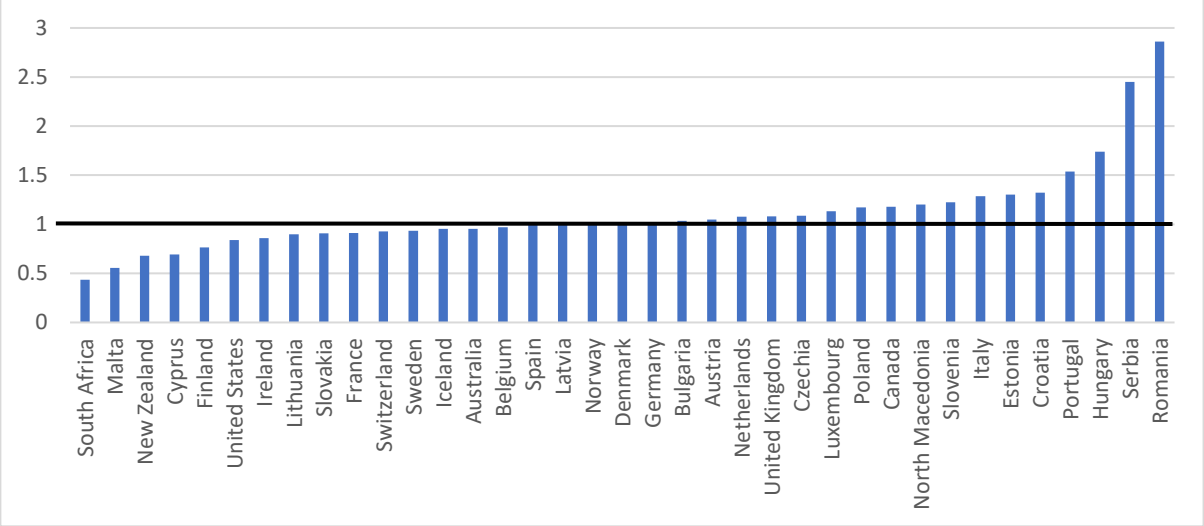
[4] A major step forward in this direction was the publication of a manual on the measurement of volunteering (ILO 2011). See also Salamon, Sokolowski and Haddock (2018). The Nineteenth International Conference of Labour Statisticians further developed these definitions and gave momentum to use of the Manual (ILO 2013).
[5] The coverage of the data is also patchy. For some countries, data is only available on direct volunteering, while for others it is only available for organization-based volunteering. Relatively few countries have data covering both forms. For more information, see https://ilostat.ilo.org/topics/volunteer-work/.
[6] This is also consistent with the analysis of Salamon, Sokolowski and Haddock (2018) who go into a little more detail on the age pattern of volunteering and how this differs across countries and forms of volunteering.

Figure 1. Prevalence of volunteering: ratio of younger (15–24 years of age) to older (25–64 years of age) cohorts

a. Direct volunteering



b. Organization-based volunteering



Source: calculated from the ILOSTAT database on volunteering.
Note: The figures show the ratio of the prevalence of volunteering among young people 15–24 years of age to the prevalence of volunteering among older cohorts (25–64 years of age) for direct and organization-based volunteering respectively. For example, a value greater than one implies the prevalence of volunteering is higher among young people than the rest of the working age population and vice versa.

2.2.1 What makes young people volunteer: what do we know?

Before proceeding, let us briefly summarize what is known – primarily from statistical estimates – of the factors that influence the decision to volunteer. Here, as with other aspects of volunteering, knowledge is limited. **Table 1** summarizes some of the empirical studies which have dealt with this issue. The literature covering the intrinsic and extrinsic motivations of volunteering is complemented by studies by economists on consumption and investment motives. In simpler terms, people do volunteer work either because it is considered beneficial (or a good thing to do) in and of itself (intrinsic and/or consumption motivation) or because of what they think they may obtain as a consequence of volunteering (extrinsic and/or investment motivation).[7] In the majority of cases, the decision to volunteer is likely to be a combination of the two.

A number of general points emerge when looking at quantitative studies of the decision to volunteer:

- the number of studies is limited – although there are certainly many more qualitative and/or anecdotal studies;
- all the studies are concerned with high-income countries;
- none of the studies explicitly analyses the determinants of volunteering among young people

As we shall see, this is also true of the vast majority of studies looking at the "impact" of volunteering on volunteers themselves.

Volunteer work takes many forms. As such, it is unsurprising that the motivations for getting involved in volunteer work and hence the influence of factors determining participation in volunteering vary (**table 1**). For example, while income appears to have a negative impact on volunteering participation, this is not the case for men in the United Kingdom (Downward, Hallmann and Rasciute 2020). Being employed also tends to lower engagement in volunteering. However, much depends on the form of employment and the sex of the volunteer (Taniguchi 2006). The decision to undertake volunteer work is clearly motivated by more than simply the immediate associated material benefits: intrinsic motivation is clearly important (Bruno and Fiorillo 2012).[8] Nonetheless, the work-volunteer nexus is clearly complex (Brauchli et al. 2016).

[7] For a discussion of intrinsic/extrinsic motivation, see *inter alia* Finkelstien (2009); on the consumption/investment motive see *inter alia* Hackl, Halla and Pruckner (2007).

[8] See also Pronteau and Wolff (2006) reported below in table 3 on labour market outcomes. The paper is a relatively rare example of a cross-sectional study that attempts to explicitly – and appropriately – take into account both sample selection and reverse causality, as discussed further below. The study explicitly models the expected impact of volunteering on labour market outcomes as a determinant of the decision to volunteer.

Table 1. Summary of studies on the determinants of volunteering

Reference	Country	Type of data	Methodology	Subject group	Outcome	Result(s)
Bruno and Fiorillo (2012)	Italy	Cross-sectional	Sample selection model	Men and Women	"Regular" volunteering	First, intrinsic motivation positively influences the probability of volunteering one or more times a week. Being female has a positive effect. Dummy variables for age show a negative effect on volunteering among older people. Household income has a negative effect and education variables are not statistically significant. Having children under five years of age reduces volunteering and is highly statistically significant.
Downward, Hallmann and Rasciute (2020)	United Kingdom	Longitudinal	Instrumental variables using lagged values of the other leisure activities and homeownership	Men and Women	Frequency of volunteering	Employment consistently reduces the frequency of volunteering, across all models. There is evidence of a quadratic effect of ageing on volunteering (volunteering initially declines with age and then eventually rises again). Having younger children can reduce the incidence of volunteering. Being employed reduces the frequency of volunteering. Being retired or a student is not statistically significant.
				Men		Income has a positive effect on volunteering.
				Women		Having a higher income has a negative effect.
Wemlinger and Berlan (2016)	Cross-national (41 countries)	Cross-sectional	Logit	Women	Type of volunteer organization (male-dominated/ female-dominated)	Women are significantly less likely to volunteer in traditionally male organizations. In countries where the roles of women have changed and where women participate in economic and political life, they are still less likely than men to volunteer in these traditionally male-dominated organizations. Women and men exhibit no difference in the likelihood of volunteering in traditionally female organizations in countries with a low or moderate level of sex equality. However, in countries with a high level of sex equality, women are significantly more likely to volunteer in traditionally female organizations compared to men.
Taniguchi (2006)	United States	Cross-sectional	Tobit regression	White adults	Volunteering and total hours volunteered per month	There is a statistically significant difference in the way employment status affects volunteering behaviour for men and women. Relative to full-time employment, part-time employment encourages volunteer work by women but not by men, while unemployment inhibits volunteering by men (but not by women). Retirees, students and housekeepers (grouped together) are more likely to volunteer especially among women. Years of education have a positive and statistically significant impact for both women and men. There is also a significant sex difference for elderly care: among women (but not men), time spent on elderly care has a significant negative association with volunteering.

Harrison (1995)	United States	Longitudinal and cross-sectional	Logit and ordered logit models (Field study)	Men	Volunteering	Logistic regression analyses show that the intention to undertake volunteer work has a strong and positive relationship with volunteer attendance. Hierarchical regressions show that attitude, subjective norms, perceived behavioural control and moral obligation are key determinants of volunteer attendance.
Brauchli et al. (2016)	Switzerland	Cross-sectional	Structural equation models	Men and women	Volunteer work/frequency	The analysis reveals an indirect relationship between (i) work engagement and volunteer work via work–home enrichment and (ii) between burnout and volunteer work via work–home conflict. Well-being at work appears to function as a determinant of volunteer work because of the consequences it has for the work–family interface.

2.3 Young people not in employment, education or training (NEET)

Over the last decade or so, dissatisfaction with the effectiveness of the unemployment rate as an indicator for youth labour market performance, particularly in low- and middle-income countries, has led to the adoption of the NEET rate as the key target indicator for SDG 8.6 on decent work for young people.

The definition of youth NEET is based on dividing this age group into three subgroups. Simply stated – and the simplicity of the definition is one of its attractions – young people can either be in employment or education (or both) or neither (that is NEET). It is a highly heterogeneous group, based on the absence of a characteristic, specifically, the lack (as opposed to possession) of a job or an educational or training opportunity.

There are many reasons for such a status and the variety of circumstances underlying NEET status has important policy consequences. Differences among youth NEET will affect the appropriate policy response for the different subgroups. Broadly speaking, NEETs can first be divided into people who are unemployed (labour force participants under the traditional definition) and those who are completely outside the labour market (inactive NEETs). Generally speaking, in high-income countries, youth NEET are evenly split between NEET unemployed and NEET inactive, with the balance slightly in favour of unemployed. Youth NEETs are also roughly evenly split between men and women. The picture is different In low- and middle-income countries, where there are typically far more inactive NEETs than unemployed NEETs and young female NEETs outnumber young male NEETs by a ratio of two-to-one. Globally, even before the COVID-19 pandemic, one in seven young men (13.1 per cent) and one in three young women (31.1 per cent) were classed as NEET (ILO 2020c).

A major focus of this study is the relationship between NEET status and volunteer work. On the one hand, this status may increase the amount of time available to young people to engage in volunteer work. However, depending on the underlying reasons, it can also be accompanied by the demotivation of young people. A key issue in this area is the potential role of volunteer work in finding opportunities for young people, whether unemployed or inactive. In other words, to what extent can volunteer work support the activation of young NEETs to help them return to the labour market?

2.4 How volunteering benefits the volunteer

Volunteering brings – or is believed to bring – a range of benefits to society, including both the direct beneficiaries of the volunteering work as well as to the volunteers themselves. The latest State of the World's Volunteerism Report (UNV 2018) focuses on the benefits in terms of social cohesion and how volunteerism contributes to community resilience. In contrast, this paper focuses on the individual benefits for volunteers, measured primarily in terms of the impact of participation in volunteerism on the labour market outcomes for young volunteers.

It is often claimed – sometimes without any underlying evidence – that volunteerism is useful for volunteers, serving to make them more employable. The argument is that participation in volunteering can be a route into employment, especially for young people. Literature on the

impacts of volunteering on individual labour market outcomes has focused on three mechanisms through which volunteering enhances the employment prospects of individual volunteers (Bruno and Fiorillo 2016):

1) the acquisition of work-related skills and experience;
2) access to social networks;
3) signalling the presumptive possession of desirable work-related competencies to employers.

There is evidence to support all three of these mechanisms in volunteering (Wilson, Mantovan and Sauer 2020). However, there may also be a fourth, namely the beneficial effects of volunteering on individual physical and above all mental health. While this outcome is of interest in its own right, it could also be a means to improve employment prospects and wages. This makes it a plausible potential channel for beneficial labour market effects.

2.4.1 Volunteering and labour market outcomes: a review of existing evidence

A caveat on identifying causal impact

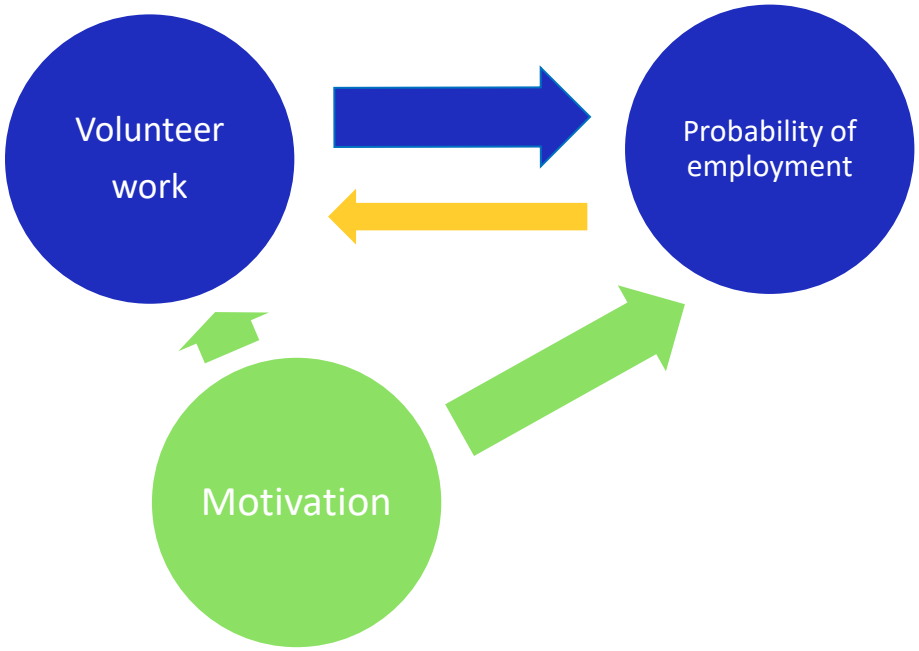
There have been a number of studies that examine the association between volunteering and labour market outcomes, with varying results. One problem that arises in studies of this type is that any association may be due to unobserved factors that underlie both the decision to volunteer and labour market outcomes. If unobserved factors determine both participation in volunteering and positive labour market outcomes, the measured benefits may simply be a reflection of the underlying characteristics of people who tend to volunteer and not a causal consequence of volunteering itself. This would result in the overestimation of the causal impact of volunteering on labour market outcomes.[9] Similarly, reverse causality may arise with cross-sectional estimates insofar as volunteering may affect employment outcomes but employment may well affect the decision to volunteer.

Figure 2 depicts these relationships visually. We want to identify the blue arrow, that is the impact of participation in volunteer work on the likelihood of finding work. The problem is that another factor, such as motivation (the green circle in the diagram), could affect both participation in volunteer work and the likelihood of finding work (the green arrow). If more "motivated" individuals are both more likely to participate in volunteering **and** more likely to find employment, the failure to explicitly take this into account would mean that part of the estimated impact of volunteering on the probability of employment will actually be measuring the effect of individual motivation and not the causal consequence of participation in volunteering in its own right.[10]

[9] Unobserved characteristics may also be negatively associated with labour market outcomes, in which case simple cross-sectional estimates will underestimate the impact of volunteering on outcomes.

[10] This is called selection bias and is analogous to omitted variable bias, the omitted variable in this example being individual motivation.

Figure 2. Identifying causality: possible causal links



A second problem in cross-sectional studies (one that tends to diminish, if not disappear altogether, in longitudinal estimates) is reverse causality, indicated in figure 2 by the yellow arrow. Participation in volunteer work may influence the likelihood of finding work but being in employment (or the probability of being in employment) may also influence whether an individual participates in volunteering. A longitudinal approach means that participation in voluntary work and the decision to do so take place before (preferably quite some time before) the outcome is observed. In this case, it is less likely – but by no means impossible – that the outcome variable or the corresponding expectations will influence the decision to participate.[11]

The impact of volunteer work on individual labour market outcomes: literature summary

The issue of identifying the impact of volunteering on the labour market, alongside other outcomes, remains an issue. Although a number of studies have tried to address this matter, there is still no clear consensus on the best approach in this context.[12] The main findings of existing studies on the impact of volunteering on labour market outcomes are summarized in

[11] The specific solution can vary depending on whether it is being in employment or the probability of being in employment which is operational. However, in general terms, the consequence is the same: a distorted picture of the role of volunteering in determining the likelihood of finding work (or indeed other labour market outcomes of interest). From the longitudinal perspective, if, for example, young people partly base their decision to participate in voluntary work on the expected benefits of volunteering on subsequent employment prospects, insofar as this is correlated with actual employment outcomes, the estimated probability of participating in voluntary work may be subject to reverse causality. This issue is explicitly taken into consideration by the analysis by Pronteau and Wolff (2006) discussed in table 3.

[12] For the author, the most convincing approach has been the use of natural experiments (for example, Meier and Stutzer 2008). However, by their nature, natural experiments are rare and cannot easily be generalized as a methodology to be implemented on a broader scale. In their systematic review of the impact of volunteering on mental and physical health, Jenkinson et al. (2013) note the lack of "robustly designed research".

table 2. However, it is important to note that almost all the evidence reviewed here comes from high-income countries. Indeed, in the latter part of this paper we try to broaden our understanding by also looking at volunteering in a range of emerging countries, alongside one or two high-income ones.

The existing evidence can be summarized as follows:

- More often than not, participation in volunteer work tends to be associated with **positive employment and wage benefits to volunteers**.
- Effects vary across groups, countries and times, with **huge variations in the size of the estimated effects**.
- Volunteer work seems to produce **fewer labour market benefits for women** than for men.
- The evidence suggests volunteer work is more effective in improving employment prospects and wages among people with **higher levels of formal education** and/or in **professional occupations**.
- As described above, controlling **unobserved factors** tends to reduce the impact of volunteering on labour market outcomes (although not invariably).

The overriding impression is that the estimated effects vary greatly, without it always being clear why, meaning that more evidence is urgently required.

Table 2. Summary of studies of the impact of volunteering on individual labour market outcomes

Reference	Country	Type of data	Methodology	Subject group	Outcome	Result(s)
Cozzi, Mantovan and Sauer (2017)	United Kingdom	Longitudinal	Instrumental variables (rainfall)	Men and women	Wages	Wage premium of 45.5 per cent for men and 38.3 per cent for women.
Baert and Vujić (2017)	Belgium	Cross-sectional	Field experiment	Men and women	Employment	Volunteers are 7.3 percentage points more likely to get a positive reaction to their job applications (46.7 per cent higher probability to receive a positive response). The volunteering premium is higher for females.
Paine, McKay and Moro (2013)	United Kingdom	Longitudinal	Logit	Men and women	Employment	Volunteering has a weak effect on employability in terms of moves into employment, job retention and progression. Volunteering can assist the transition to employment, but only if done at the right frequency and for certain groups (older people and people with family care responsibilities).
Bruno and Fiorillo (2016)	Italy	Cross-sectional	Instrumental variables	Men and women	Wages	Wage premium of 2.7 per cent.
Pronteau and Wolff (2006)	France	Cross-sectional	Probit Sample selection	Public and Private sector workers	Wages	In the public sector, volunteers receive a statistically significant 5–6 per cent increase in wages . In the private sector, there is no statistically significant impact.
Spera et al. (2013)	United States	Longitudinal	Logit	Unemployed and not in the labour force	Employment	Volunteering was associated with a 27 per cent higher probability of employment. The effects were stronger on individuals without high school diplomas and who live in rural areas.
Wilson and Musick (1999)	United States	Longitudinal	Logit	Young women	Employment	Results shows that neither volunteering activity from 1973 nor 1978 has any effect on whether young women were in the labour force in 1991. The odds-ratio for the effect of volunteering in 1988 on labour force participation in 1991 indicates that women who volunteered in 1988 are more likely to have dropped out of the labour force three years later. Labour force participation in 1991 is unaffected by how many times women had reported volunteering in the past.

			Ordinary least squares		Occupational prestige	The three waves of volunteering have a positive effect on occupational prestige among those with jobs in 1991, net of education and occupational prestige in earlier waves. The earlier waves of volunteering appear to have a stronger effect than the 1988 wave. Multiple waves also increase occupational prestige: the more times a woman reported volunteering, the higher her occupational prestige.
Wilson, Mantovan and Sauer (2020)	United Kingdom	Longitudinal	Fixed effects	Overall	Wages	Volunteering has a statistically significant positive effect on the earnings of those in professional and managerial occupations (3.8 per cent) while wage workers in white- and blue-collar jobs do not benefit.
Kazhoyan et al. (2017)	Cambodia	Cross-sectional	Qualitative and quantitative (descriptive) research	Youth	Employment	The research showed that those who people been engaged in volunteer activities had more job opportunities than those who have not.
Corden and Sainsbury (2005)	United Kingdom	Qualitative research (interviews)		Overall	Employment	There was evidence in the second set of interviews that some people who transitioned from a voluntary job to paid work considered that the support and help received while volunteering was key to equipping them to apply for and obtain paid employment. The boost to self-esteem and confidence, skills and qualifications and workplace experience was a significant help.
Kamerāde and Paine (2014)	Various	Meta-analysis (systematic review)		Overall	Employment	Volunteering in general has a relatively weak effect on the transition into employment. Volunteering programmes specifically or partly designed to provide paths into work only lead directly to paid work for some participants. The effectiveness of these programmes could be improved if unemployed volunteers on the programmes acquired the specific knowledge, skills and abilities needed by the labour market.
Penny and Finnegan (2019)	United Kingdom	Qualitative research (systematic review)		Overall	Employment	The article describes how the primary justification for supporting volunteering has been (and remains) that it provides access to work for unemployed individuals. It also highlights evidence that volunteering performs poorly in this regard, with weak or inconsistent effects in terms of employability.
Hirst (2001)	United Kingdom	Cross-sectional	Ordinary least squares	Overall	Employment	Neither volunteering nor the number of hours volunteered has statistically significant effects on any of the specifications of the model used to determine the effect of volunteer work on entry into the labour market. Nevertheless, characteristics of the voluntary experience (teamwork, work experience, review procedures, supervisory role) were consistently statistically significant.

Hackl, Halla and Pruckner (2007)	Austria	Ordinary least squares	Overall	Wages	The wage premium associated with volunteer work in the OLS wage equation is statistically significant and equal to 23.6 per cent.
		Two-stage probit and tobit with instrumental variables (youth club and partner volunteers)			Controlling for non-random participation in volunteer work with a probit model, the wage premium is reduced to 18.5 per cent. Estimated using a tobit model, this corresponds to a wage premium of 0.6 per cent for each additional hour of voluntary labour per month.
		Average treatment effect on the Treated (ATT) using propensity score matching (PSM)			The overall estimated wage premium ranged from 20.1 per cent to 26.9 per cent according to the specific form of PSM.

2.4.2 Volunteering and health: a review of existing evidence

As mentioned above, another potential benefit of volunteer work for volunteers themselves is the potential for improvement in their health. Again, there is a small but significant body of work examining this issue whose findings are slightly more consistent (**table 3**). In this area, there is broad agreement that in terms of formal volunteering (at least in high-income countries), volunteer work is not generally detrimental to health and well-being. In fact, more often than not, volunteer work is associated with improvements in these areas. It should also be noted that this effect is clearly stronger among older volunteers.

Table 3. Summary of studies on the impact of volunteering on individual health outcomes

Reference	Country	Type of data	Methodology	Subject group	Outcome	Result(s)
Van Willigen (2000)	United States	Longitudinal	Ordinary least squares	Older people over 60 years of age (versus younger adults)	Life satisfaction	Volunteering is positively associated with life satisfaction (coeff=0.221 for people over 60 years of age and 0.181 for people under 60 years of age) and perceived health (coeff=0.154 for people over 60 years of age and 0.055 for people under 60 years of age). The relationship between volunteer hours and life satisfaction was positive and significant: satisfaction increased with level of commitment (coeff=0.002 for people over 60 years of age and 0.003 for people under 60 years of age). The relationship between volunteer hours and perceived health was positive and significant (coeff=0.003 for people over 60 years of age and 0.001 for people under 60 years of age). In general, older volunteers experienced greater increases in life satisfaction than younger adults over time as a result of volunteering, especially for high rates of volunteering. Older adults experienced greater positive changes in their perceived health than younger adult volunteers.
					Physical health (perceived health)	Volunteering is positively associated with perceived health (coeff=0.154 for people over 60 years of age and 0.055 for people under 60 years of age). The relationship between volunteer hours and perceived health was positive and significant (coeff=0.003 for people over 60 years of age and 0.001 for people under 60 years of age). The physical benefits of volunteering began to decrease after 100 hours per year. By extrapolation, volunteering would begin to negatively affect health at 140 hours per year (2.7 hours per week).
Fiorillo and Nappo (2017)	United Kingdom	Cross-sectional	Two-Stage least squares with instrumental variables – religious participation	Overall	Self-perceived health	Individuals involved in formal volunteer work have a self-perceived health premium of 28 per cent.
			Instrumental variables – religious participation			Formal volunteer work improves self-perceived health by 29.7 per cent.
			Recursive bivariate probit			Formal volunteer work increases the likelihood of reporting good health by 1 per cent.

Kamerāde and Bennett (2018)	Cross-national (29 European countries)	Cross-sectional	Multilevel mixed-effects linear regression model	Unemployed	Mental health and subjective well-being	Volunteer work shows no significance for three of four dependent variables. Only life being worthwhile is positive and statistically significant, with control by individual and country-level characteristics (important variables: generosity of unemployment benefits, unemployment rate, GDP, inequality). The results from the interaction between volunteer work and the generosity of unemployment benefits suggests that regular volunteering can actually be detrimental to people's mental health in countries with less generous unemployment benefits. In general, voluntary work can partially improve well-being but the generosity of unemployment benefits is vital to alleviate the negative mental health effects of unemployment.
Wilson and Musick (1999)	United States	Longitudinal	Ordinary least squares	Older people over 65 years of age (versus younger adults)	Mental health / depression	None of the volunteer measures have any effect on the levels of depression among adults under 65. However, volunteering lowers depression among respondents 65 years of age or older, regardless of the measure used (number of voluntary organizations for which the respondents volunteered, annual hours spent volunteering and number of periods of volunteering). The mental health of younger and middle aged adults is unaffected by the type of volunteering (for example, religious or secular). Likewise, the amount of time spent volunteering has no impact on mental health. For people over 65 years of age, all types of volunteer work have a significant negative impact on depression, that is they are positive for mental health.
Kwok, Chui and Wong (2013)	Hong Kong	Cross-sectional	Hierarchical multiple regression analysis	Volunteers	Life satisfaction	Bivariate correlations show that volunteer participation did not lead to any group difference in life satisfaction. Hierarchical multiple regressions show that the more a volunteer was intrinsically motivated, the higher level of life satisfaction they experienced (coeff=0.24 for total effect of intrinsic motivation on life satisfaction).
Luoh and Herzog (2002)	United States	Longitudinal	Multinomial logit	Older people	Health and mortality	One hundred annual hours or more in volunteer work at t=1 significantly reduces the probability of reporting poor health (0.59) and of dying (0.38) at t=2, even when controlling for self-reported health in t=1 and other controls.
Ramos et al. (2015)	Switzerland	Cross-sectional	Regression analysis	People in employment	Burnout	Only self-determined (motivation) volunteers differed from non-volunteers, reporting significantly lower levels of burnout and marginally lower levels of stress. Participants with unfavourable job conditions seemed to benefit more from volunteering when self-determined motives were the driving force. Both groups of volunteers (self-determined and controlled motivation) showed more work engagement and better positive mental health in comparison to non-volunteers.
Griep et al. (2014)	Sweden	Longitudinal	Path analysis	Men and women	Health and health behaviours / well-being	Results indicate that volunteering during unemployment significantly decreased the likelihood of smoking, the number of cigarettes smoked, the likelihood of consuming alcohol and the likelihood of being diagnosed with hypertension.

Meier and Stutzer (2008)	Germany	Longitudinal	Ordinary least squares and Difference in differences (based on a natural experiment – event study)	Men and women	Well-being / life satisfaction	Using the collapse of the German Democratic Republic as a unique case for analysing the causal effect of volunteering on people's well-being, the results show that volunteering increases happiness. The results are robust when controlling for other factors influencing life satisfaction. Volunteering frequently (weekly or monthly) is associated with a higher life satisfaction than volunteering for less than a month or stopping volunteering.

3. Young people and volunteering: new cross-sectional analysis

This section provides new evidence on different aspects of volunteering work among young people, particularly the effects on their experiences of the labour market. Data from a range of countries collected as part of the UNV and ILO partnership for the measurement of volunteer work is analysed to build on the existing evidence base. Given that existing evidence has focused on high-income countries, this section considers a broader range of contexts.

3.1 Determinants of volunteering for young people

Figure 3 shows some of the key findings from estimating the probability that a young person with specific characteristics participates in volunteer work for the eight countries in our cross-sectional sample. The models used throughout this paper are non-linear, meaning the effect of an explanatory variable on the outcome – in this case the probability of volunteering – varies according to individual characteristics (Box 1).

Box 1: Using the probit model to examine relationships between volunteering and employment

This analysis uses probit models to estimate the probability of young people volunteering, finding employment and being in good health.

In probit models – or indeed in the other commonly used approach, the logit model – the size of the effect (the percentage point shift in probability associated with a specific characteristic such as being in employment) also depends on all the other characteristics of the individual. For this reason, in illustrating the results, we make use of an ideal type – or baseline – individual throughout. For example, in looking at the likelihood that young people (15–29 years of age) participate in volunteering in figure 3, we specify that the representative (ideal type) of young person is single, 23 years of age, with upper secondary education and lives in an urban area. Specifying the individual characteristics is simply a heuristic device to allow the visual representation of the effects of interest. The chosen characteristics do not affect the statistical significance or the direction of the estimated effect, just its size, which can then be compared across other individual characteristics.

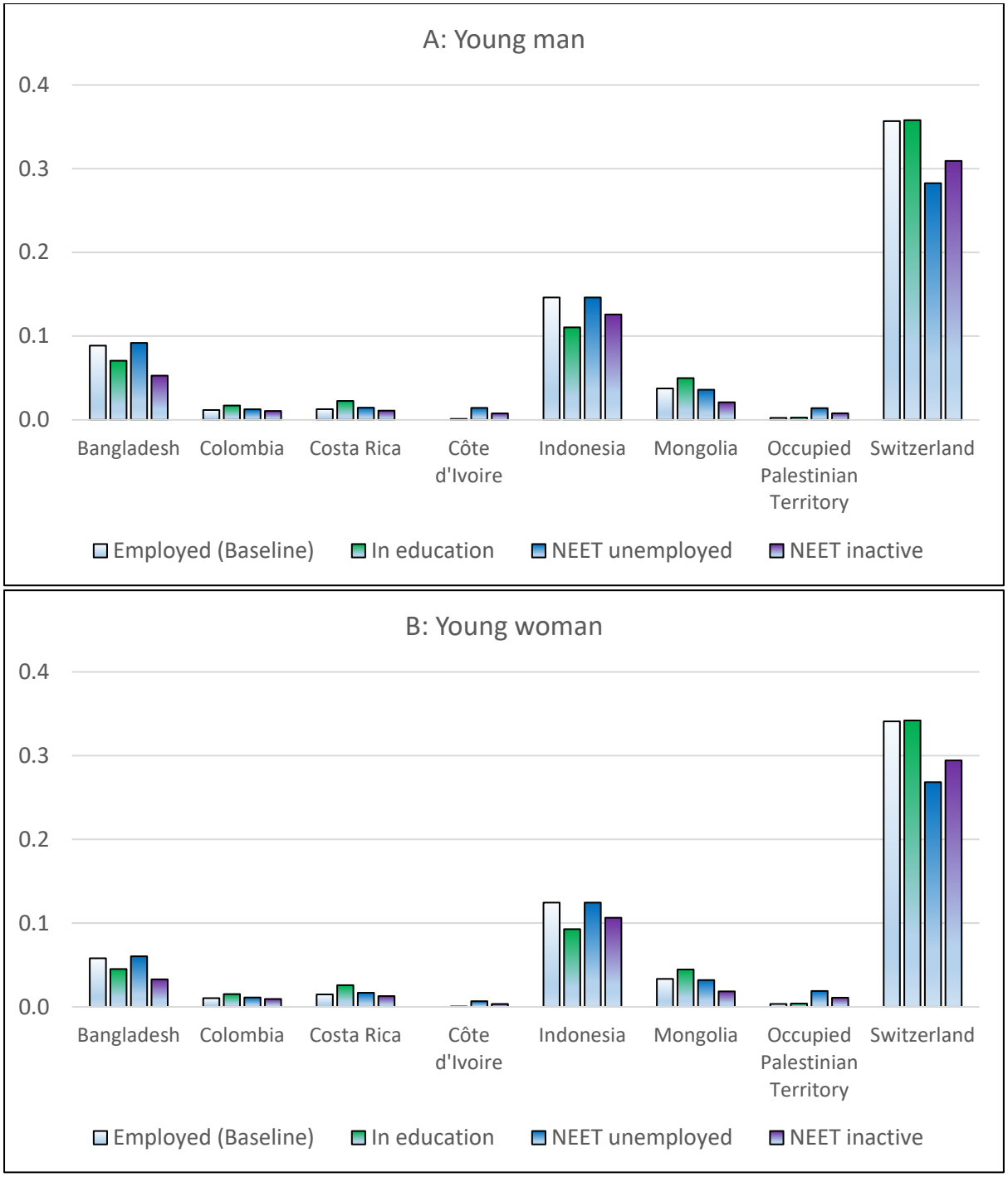
In the specific case in point, the figure illustrates how the probability of volunteering varies according to whether this baseline individual is employed, in education, NEET-unemployed or NEET-inactive. In principle, this approach can be applied to any of an individual's relevant characteristics. The specific characteristics chosen for the representative (or ideal) type vary a little across the analyses undertaken here in order to take into account the predominant characteristics observable in the different samples used in the different contexts.

Throughout the paper, the underlying model is typically estimated and the results illustrated separately for representative young men and young women as in in figure 3, panels A and B.

Some care is required in interpreting these models, since there is no reason to suppose many of the explanatory variables included are necessarily *causing* participation in volunteer work. This is particularly relevant for status variables (in education, in employment or NEET). Below we use a similar form to examine the probability of young people who have left education finding employment, with volunteer work included as an explanatory variable. We will return to this issue below but for now it is worth remembering that the table reports associations rather than causal links.

With this in mind, there are some interesting similarities and divergences across countries. Firstly, the prevalence of volunteering varies greatly. For the "typical" unmarried young man (panel A) or woman (panel B) who is 23 years of age, with upper secondary education and living in an urban area, the probability of participating in volunteer work ranges from over 30 per cent in Switzerland to under 5 per cent in Colombia, Costa Rica, Côte d'Ivoire and the Occupied Palestinian Territory. On the other hand, the pattern of participation in volunteering work is similar across the sexes: where participation is high, it is high for both young women and young men and vice versa. Furthermore, the relationship between a young person's labour market or non-labour market status and volunteering work varies across countries but is also similar for young men and young women within them. In Indonesia, for example, volunteering is more common among those who are in employment than among people who are still in education. This is true for both young men and young women. In Mongolia the opposite holds: young people who are still in education are more likely to be volunteers than those who are employed. Once again, this is true for both young women and young men.

Figure 3. Determinants of volunteering work for a representative young person by sex and country



Source: Estimates based on labour force and/or household survey microdata for eight countries held by ILOSTAT. More details on the data sources are given in Appendix A.

Note: The figure illustrates the key results from a probit model of the determinants of the probability of participating in voluntary work estimated on samples of young people 15–29 years of age. Since the effect of each characteristic on volunteering depends on other individual characteristics, the figure is based on ideal types of young people. Specifically, it shows the estimated probability that a single 23-year-old young man (panel A) or young woman (panel B), with upper secondary education and living in an urban area participates in volunteer work. Full results are reported in table B1 of Appendix B. The figure reports the probability of participating in voluntary work by sex based on the status of the young person (employed, in education, NEET unemployed and NEET inactive).

Overall, with the exception of Costa Rica, young women are less likely to participate in volunteer work than young men. However, while the factors that increase or reduce the likelihood of participation in volunteer work vary widely across countries, within countries the same factors typically have a similar impact on participation in volunteer work for both young women and young men (table B1 of Appendix B).

Overall, the association between the current status of young people and volunteering varies across countries. Being employed – as opposed to NEET or in education – can increase or decrease the likelihood of a young person participating in volunteer work. In the countries where volunteering appears to be more prevalent among young people (Bangladesh, Indonesia and Switzerland) the probability of participating is higher or the same among people who are employed compared to students.

As mentioned above, our analysis distinguishes between two types of NEET: unemployed and inactive. Belonging to either category means the young person in question is neither working nor studying, with the distinction depending on whether they are actively seeking employment or classed as inactive.[13] With the notable exception of the Occupied Palestinian Territory, a clear pattern is visible: inactive NEETs are invariably less likely to participate in volunteer work than their unemployed counterparts. Table B1 of Appendix B shows this trend is clearly driven by young people (primarily young women) who have care responsibilities and are thus less likely to participate in volunteer work. This is an important point and one we will return to below.

The impact on volunteering of other characteristics not explicitly included in figure 3 but reported in table B1 often varies across countries. However, educational attainment is an exception. Across the board, those with higher levels of educational attainment are more likely to participate in volunteer work than those with lower levels. For the most part, the probability of volunteering increases with age, albeit with some exceptions (Colombia, Costa Rica and Switzerland). This broadly conforms to the general pattern reported above: volunteering work, particularly direct volunteering, tends to be less prevalent among young people. Similarly, volunteering rates are almost invariably (except for the Occupied Palestinian Territory) higher among young people in rural areas. In contrast, being married seems to have a much less consistent association with volunteering: sometimes the coefficient is positive, whereas sometimes it is negative. However, this is not affected by sex.[14]

[13] While the term "inactive' is standard, it is possibly misleading. For most youth NEETs classed as inactive, it is not the case that they are idle or not working, it is just that they are not in employment. For example, young women who are classed as inactive are often engaged in care duties or other forms of unpaid work within the family.

[14] Separate estimates of the probability of volunteering for young women and young men (not reported here) confirm that patterns of participation in volunteer work are highly consistent across sex within each country, with the sign of the coefficients rarely being different for young men and young women.

3.2 Volunteering and employment

Figure 4 shows the "impact" of volunteer work on the probability of being in employment for the range of countries included in our cross-sectional sample. As before, the figure is calculated on the basis of probit estimates. It tells us the probability that a young person is in employment as a function of a range of individual characteristics, including whether or not they volunteer. The young person has the same characteristics as in the previous section examining the probability of participating in volunteer work.[15]

The figure reports the "impact" of volunteering on the probability of being in employment. The position of the cross indicates the size of the "impact", with a red cross indicating that the impact is statistically significant and its size indicating the level of certainty. Results are reported separately for the different types of volunteer work where this is known.

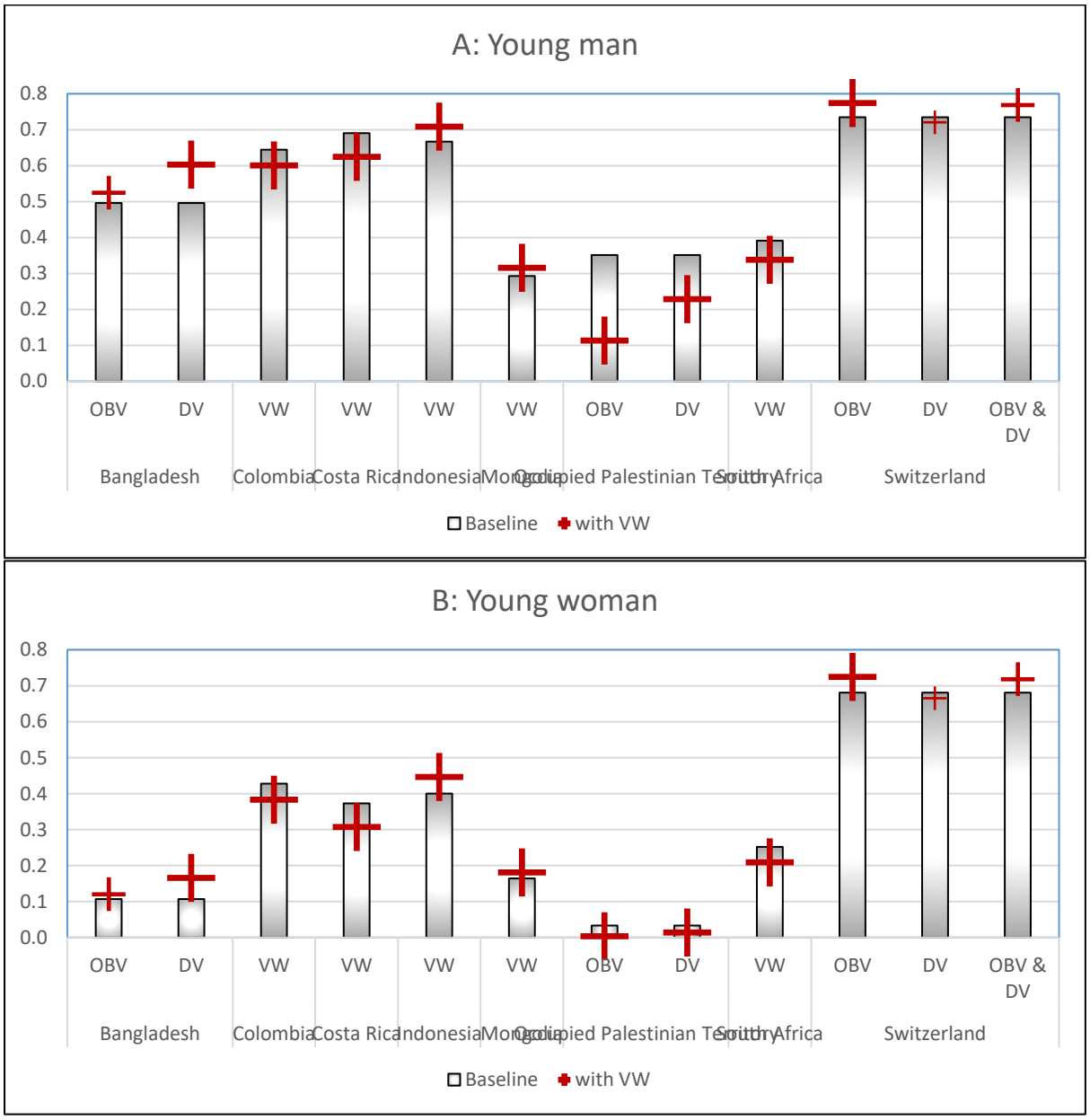
Regarding the use of the terms determinants and impact, it is important to note that these results reflect associations between phenomena. In particular, the relationship between voluntary work and labour market outcomes are most certainly jointly determined. The relationship between participation in voluntary work and the probability of being in employment (as opposed to NEET) cannot therefore be interpreted as a one-way causal relationship.

For the most part, there is a positive and statistically significant relationship between participating in voluntary work and the probability of being in employment. This means that for most of the countries considered here, voluntary work complements current employment instead of being a substitute. However, once again, the Occupied Palestinian Territory is clearly a counter-example, where, understandably, volunteer work evidently takes on a different meaning.

The substantial gaps in employment rates between young women and young men should also be noted. A smaller share of young women are employed in all countries, although in Switzerland the employment rate is relatively high for both sexes and the difference in employment rates is the least pronounced across the countries included in the study. The difference in employment rates can largely be attributed to differences in NEET rates (much higher among young women than young men) as opposed to differences in educational participation (see table A2 of Appendix A).

[15] Unmarried young men (panel A) and woman (panel B) in the age group 20–24 years, with upper secondary education and living in an urban area.

Figure 4. Probability of being employed for a representative young person and its association with voluntary work



Source: Estimates based on labour force and/or household survey microdata for eight countries held by ILOSTAT. More details on the data sources are given in Appendix A.

Note: The figure is based on probit models of the probability of employment for young people estimated separately for young men (panel A) and young women (panel B) who are 15–29 years of age by country and type of volunteer work. The baseline representative young person is a single 23-year-old young man (panel A) or woman (panel B) with upper secondary education who is resident in an urban area. The red cross (with VW) shows the probability of being in employment once participation in volunteer work is added. A grey cross indicates the effect is not statistically significant at $p < 0.1$, a red cross indicates statistical significance of at least $p < 0.1$, with the degree of statistical significance increasing with the thickness of the cross. Detailed results are reported in table B2 of Appendix B. OBV = organization-based volunteer work; VW = volunteer work; DV = direct volunteer work.

3.3. Volunteering and wages

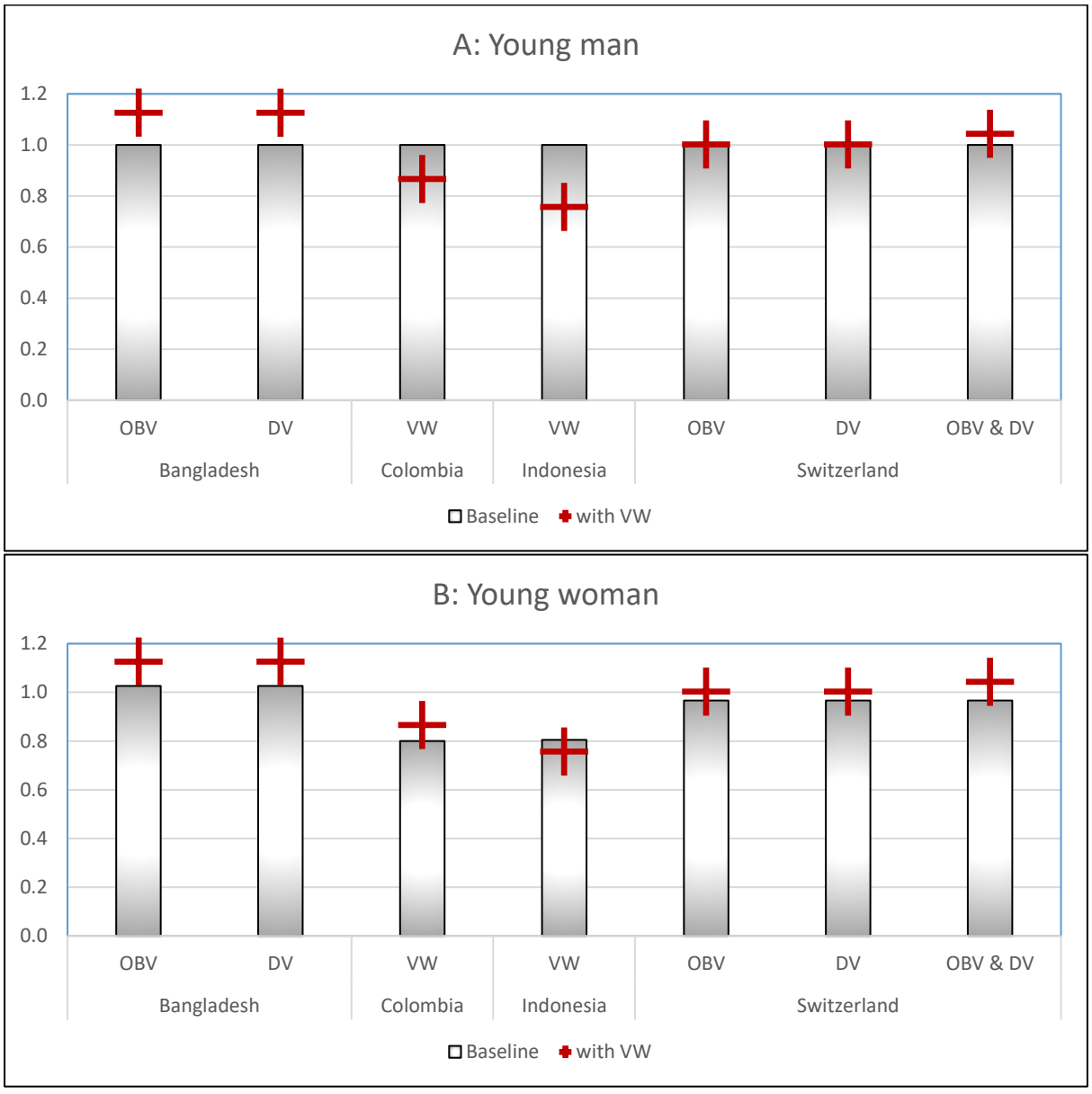
Figure 5 shows the "impact" of volunteering on hourly wages. The figure is based on logarithmic hourly wage equations and the full results are reported in table B2 of Appendix B. Engagement in voluntary work is typically associated with higher wages among people who are employed, with this being particularly true for young women. Only in Indonesia do young female volunteers earn a lower hourly rate than non-volunteers. Among young men, the association is positive in Bangladesh and Switzerland but negative in both Colombia and Indonesia.[16] In all cases – for both young women and young men – the association is statistically significant. However, based on the limited evidence presented here, it is not possible to say whether organization-based or direct volunteering is associated with higher wages. In the countries in which the survey data allows a distinction to be made, the difference between the two coefficients is not statistically significant. Indeed, in Switzerland it would appear that the best outcome is achieved by a combination of direct and organization-based volunteering.

In the case of earnings, the issue of reverse causality (higher wages "causing" greater participation in voluntary work, rather than vice versa) is perhaps less of a problem. However, it is highly likely that unobserved factors that determine participation in volunteering work also affect wage rates.[17]

[16] The situation is slightly different for monthly wages: given that young volunteers typically work fewer hours in their regular job than non-volunteers, it is perhaps unsurprising that monthly wages are negatively associated with more frequent volunteering.

[17] For example, Hackl, Halla and Pruckner (2007) discussed above find simultaneity between wages and the volunteering decision.

Figure 5. Impact of volunteering on wages of a representative young person by sex, country and type of voluntary work



Source: Estimates based on labour force and/or household survey microdata for four countries held by ILOSTAT. More details on the data sources are given in Appendix A.

Note: The figure is based on estimates of the effect of volunteer work on log standardized hourly wages for young people 15–29 years of age estimated separately for young men (panel A) and young women (panel B) by country and type of volunteer work. The estimates control for sample selection. The baseline corresponds to single 23-year-old young people with upper secondary education and resident in urban areas. For comparability, wages are indexed so that the wages of a representative male young person = 1.0. The red cross (with VW) shows indexed wages after participation in volunteer work is added. Detailed results are reported in table B3 of Appendix B. OBV = organization-based volunteer work; VW = volunteer work; DV = direct volunteer work. See also notes to figure 4 on statistical significance.

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3.4 What do the results tell us?

The results presented in this section should be taken as indicative and caution should be exercised in any causal interpretation. They represent a first attempt to extend the analysis of the determinants of volunteer work and its labour market effects for individuals beyond the restricted group of high-income economies that have been analysed to date in order to include a range of lower and upper middle-income countries. A number of interesting points emerge from the results:

- The heterogeneity of volunteer work both across and within countries is highly apparent in both the characteristics of volunteers and the association between volunteer work and labour market outcomes.
- There is also a perhaps surprising degree of regularity across the range of countries included here: at least until 30 years of age, volunteer work tends to increase with education and age.
- In terms of those least likely to volunteer, inactive youth NEETs are generally less likely to undertake volunteer work than young people who are in employment.
- Volunteer work is also generally positively related to labour market outcomes across a range of countries: volunteers are more likely to be employed and – perhaps more significantly – are more likely to have higher wages.

Nonetheless, as noted above, we must exercise caution in supposing these are causal relations. We shall return to this issue in the next section, which examines the longer-term effects of volunteer work on young people in the United Kingdom in further detail.

4. Digging deeper: volunteering and the longer-term labour market outcomes of young people

Longitudinal analysis allows us to get closer to reasonable estimates of the impact of volunteering on labour market outcomes over the longer term. In contrast to the cross-sectional data used above which comes from a single point in time, longitudinal analysis takes data from several repeated "waves" to understand the timing of events. Using such an approach, reverse causality is less of an issue. In some instances, it also allows control of a wider range of possible influences, such as unobserved individual differences, and the adoption of modelling procedures to further reduce the chances of bias.

The source of the information in this section is the United Kingdom Household Longitudinal Study (UKHLS). The UKHLS survey has been running since 2009 and is the successor to the British Household Panel Survey, used to analyse certain aspects of volunteering work in several of the papers reviewed above.[18] The long-term panel nature of the survey and the inclusion of explicit questions on organization-based volunteering make it a useful source of information. More details of the survey and its characteristics are provided in Appendix A.

4.1 Participation in volunteering

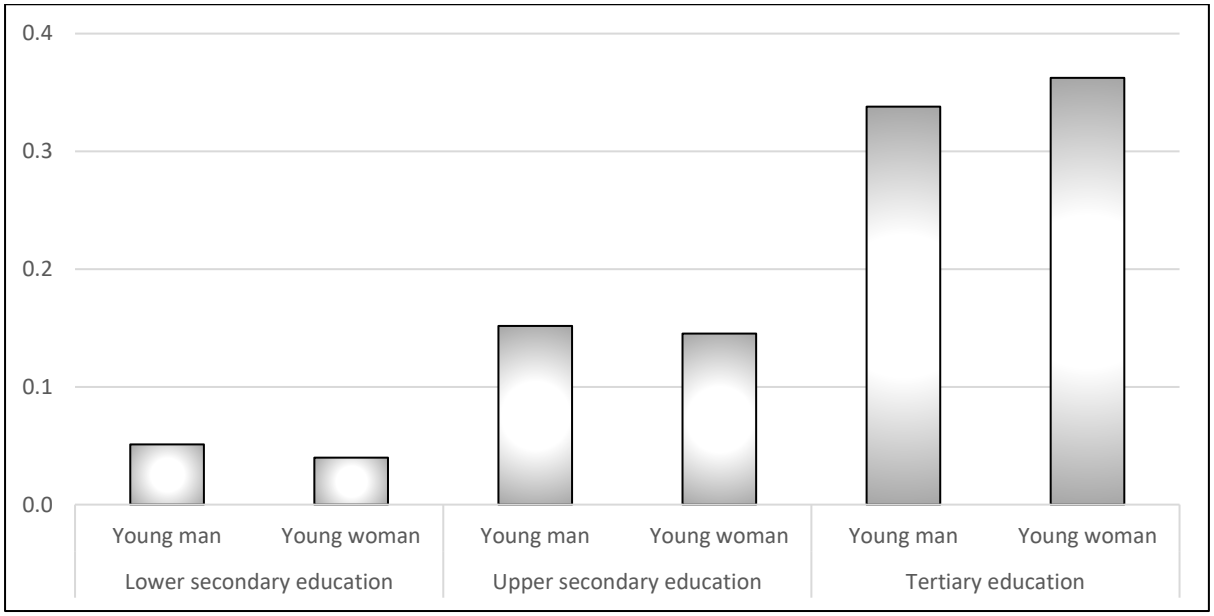
Let us first consider participation in volunteering work in the United Kingdom (**figure 6**). To do so, only the second wave of the survey (2010-2012) is used. This allows some comparison with the previous cross-sectional results reported above in **figure 3**. The explanatory variables are similar to those in the cross-sectional analyses above, albeit with some additions. In particular, the urban–rural dichotomy is replaced by 10 regional fixed effects and there is additional information on self-reported health. The baseline characteristics are also the same. The figure reports estimates of the probability of participating in volunteer work across different characteristics. In particular, in addition to sex, the probability is estimated by educational attainment level (figure 6, panel A) and labour market status (figure 6, panel B).

Overall, the sex difference in participation in organization-based volunteering work in the United Kingdom is small. There are, however, some differences when it comes to interaction with other individual characteristics. For example, in common with the other countries considered above, participation in volunteer work increases rapidly with educational attainment. This effect is slightly more pronounced among young women, meaning that young women with secondary education or lower are marginally less likely to volunteer than young men with secondary education. The converse is true of graduates of tertiary education.

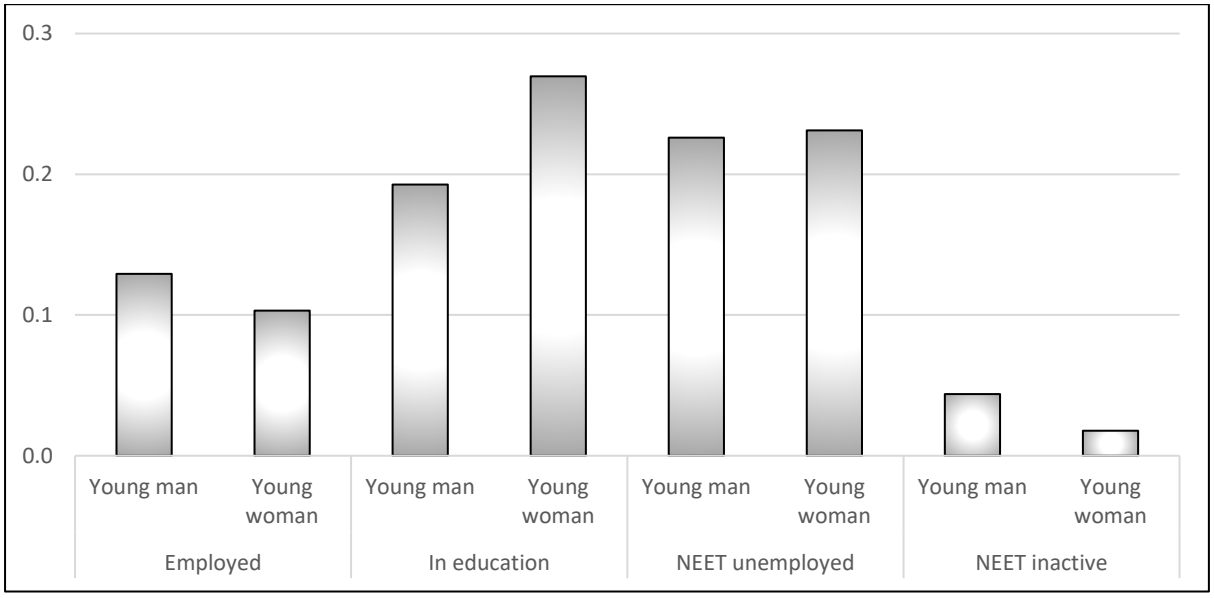
[18] The UK Household Longitudinal Study (UKHLS) is a longitudinal survey of the members of around 40,000 UK households. It collects information from each household every two years. In this paper, the second (2010–2012) and ninth (2017–2019) waves of the survey were used. The second wave includes information on the engagement of household members in organisation based voluntary work. The UKHLS does not, however, collect information on direct volunteering. More relevant details of the survey are provided in the appendix to this paper and a more comprehensive description can be found at www.understandingsociety.ac.uk/documentation/mainstage.

Figure 6. Estimated probabilities of participating in voluntary work for a representative young person in the United Kingdom 2010-2012 by sex, educational attainment and status

A. By educational attainment



B. By status



Source: Estimates based on UKHLS microdata, wave 2.

Note: The figure illustrates key results from a probit model of the determinants of the probability of participating in voluntary work for a specific representative young person. The sample used for the underlying model comprises young people 16–29 years of age at wave 2 (2010–2012). As before, results are reported for a representative or ideal type of young person. Specifically, panel A reports the probability of participating in volunteer work for a 23-year-old young man or young woman, according to educational attainment. Panel B reports the probability of same representative young man or woman participating in volunteer work according to their status (employed, in education, NEET unemployed and NEET inactive). Detailed results are reported in table B4 of Appendix B.

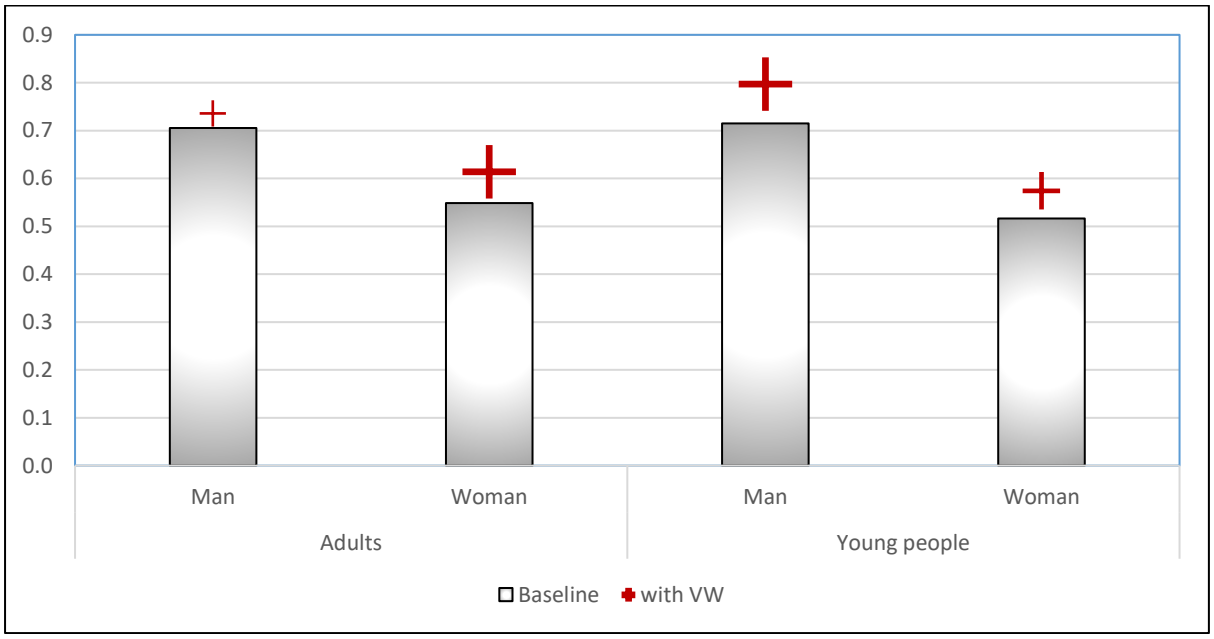
The status of young people is also important in determining volunteering. In this case, the effects of status depend to a larger extent on sex (figure 6, panel B). Whether young people are in education, employment or NEET has a significant impact on volunteering and this varies significantly by sex. In particular, those in education are significantly more likely to participate in voluntary work than people in employment, with the difference more pronounced for young women than young men. Moreover, the distinction between NEET unemployed and NEET inactive is particularly important: NEET unemployed are more likely to engage in volunteer work than those who are in employment and NEET inactive are less likely to volunteer. Similarly, the contrast is also more pronounced for young women than young men. This is in line with the negative relationship between inactive status and voluntary work in other countries reported above. It is also consistent with the idea that NEET inactive women are more likely to be involved in other unpaid work (unpaid care activities or family responsibilities, as typically identified in labour force surveys), which may reduce the time available to young inactive women for volunteer work.

4.2 Volunteering and employment

The longitudinal nature of the UKHLS data set was used to better understand the impact of volunteering on labour market outcomes. The probability of being in employment at wave 9 (2017–2019) was estimated, including terms for participation in organization-based volunteer work eight years before (2010–2012).

The results suggest a statistically significant and substantial impact of voluntary work on subsequent employment (**figure 7**). In contrast to many of the previous studies, they suggest that among adults the increase in the probability of employment from organization-based volunteer work tends to be higher for women (seven percentage points) than for men (three percentage points). The difference in the sexes is less pronounced among young people: organization-based volunteer work increases the probability of being in employment by eight percentage points for young men and six percentage points for young women. Overall, the increase in the probability of being in employment as a result of participation in organization-based volunteer work is also higher for young people than adults, largely driven by the difference in the impact for men.

Figure 7. Impact of volunteering in 2010–2012 on subsequent employment in 2017–2019 for representative young people and adults



Source: Estimates based on UKHLS microdata, waves 2 and 9.

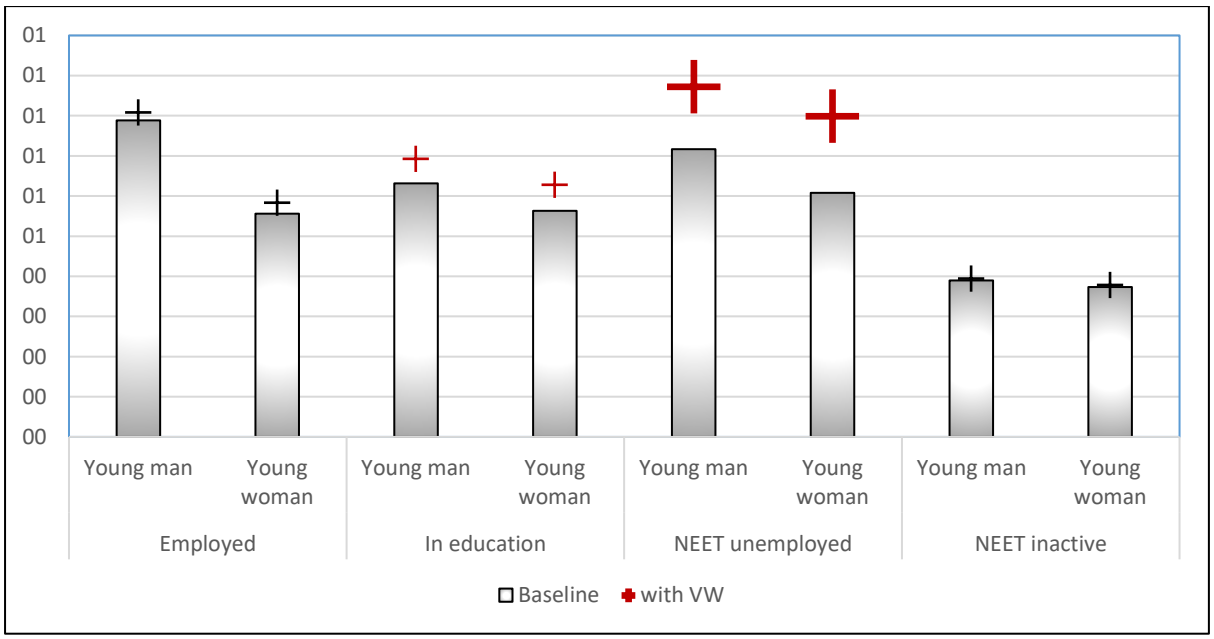
Notes: The figure is based on separate probit estimates of the probability of employment for young men, young women, adult men and adult women respectively at wave 9 (2017–2019) . Young people were 16–29 years of age and adults 30–54 years of age at wave 2 (2010–2012). The representative young person is single, 23 years of age at wave 2, with upper secondary education by the time of wave 9, and the representative adult is married, 42 years of age at wave 2, also with upper secondary education by the time of wave 9. The red cross (with VW) shows the employment probability including the effect of participation in volunteer work at wave 2. A grey cross indicates the effect is not statistically significant at p <0.1, a red cross indicates statistical significance of at least

$p < 0.1$, the degree of statistical significance increasing with the thickness of the cross. Detailed estimation results are reported in table B5 of Appendix B.

4.2.1 Volunteering and transitioning from NEET status

It is worth considering the issue of interactions in greater depth. Our underlying focus is on NEETs and the means to improve the (re-)entry of youth NEETs into employment or education, as a measurement of the SDG targets for decent work for young people. **Figure 8** reports the association between volunteering among young people and their subsequent employment outcomes based on their different labour market status during the earlier period.

Figure 8. Impact of volunteering on the probability of being in employment for a representative young person by sex and status



Source: Estimates based on UKHLS microdata, waves 2 and 9.
Notes: The figure is based on probit estimates of the probability of young people being in employment at wave 9 (2017–2019), estimated separately by their status at wave 2 (2010–2012). Young people were 16–29 years of age at wave 2. The representative young person is single, 23 years of age at wave 2, with upper secondary education by the time of wave 9. The red cross (with VW) shows the probability including the effect of participation in volunteer work at wave 2. Detailed results are reported in table B6 of Appendix B. See also notes to figure 7 on statistical significance.

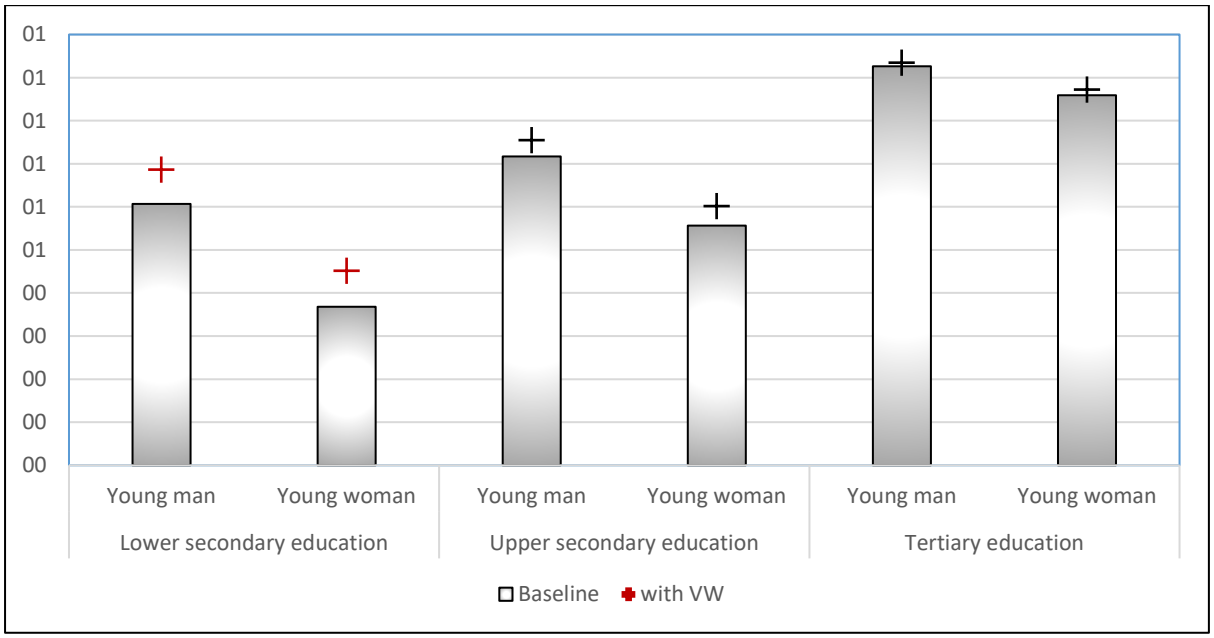
The impact of voluntary work on employment eight years later is stronger for NEET unemployed than all other groups. Participation in volunteering of NEET unemployed young people at an early stage is associated with an increase of 16 percentage points for young men and 19 percentage points for young women, a substantial improvement. However, the fact that there appears to be no statistically significant benefit in terms of future employment for youth NEETs outside the labour market during the early period (NEET inactive) is less encouraging. As noted above, like youth volunteers, youth NEETs are an extremely heterogeneous group and it is possible this heterogeneity is driving the results, rather than them being a causal consequence of participation in voluntary work. However, it is worth

noting that the effect of other explanatory variables is similar across samples. Undertaking organization-based volunteer work during education also appears to be helpful in increasing the probability of subsequent employment, although those already in employment do not gain any statistically significant advantage.

4.1.1 Volunteering, employment and educational attainment

In contrast to some of the results in the literature, participation in voluntary work appears to be most effective as a bridge to employment for the least educated (**figure 9**). Among those with lower secondary education or lower, organization-based volunteering is associated with an increase in the probability of employment of seven percentage points for young men and eight percentage points for young women. Here, it should also be noted that the improvement in employment prospects for young women with lower levels of education makes a minimum contribution to addressing the gender gap in employment rates for this group, which is much larger among people with lower levels of education.

Figure 9. Impact of volunteering on the probability of being in employment by educational attainment for a representative young person.

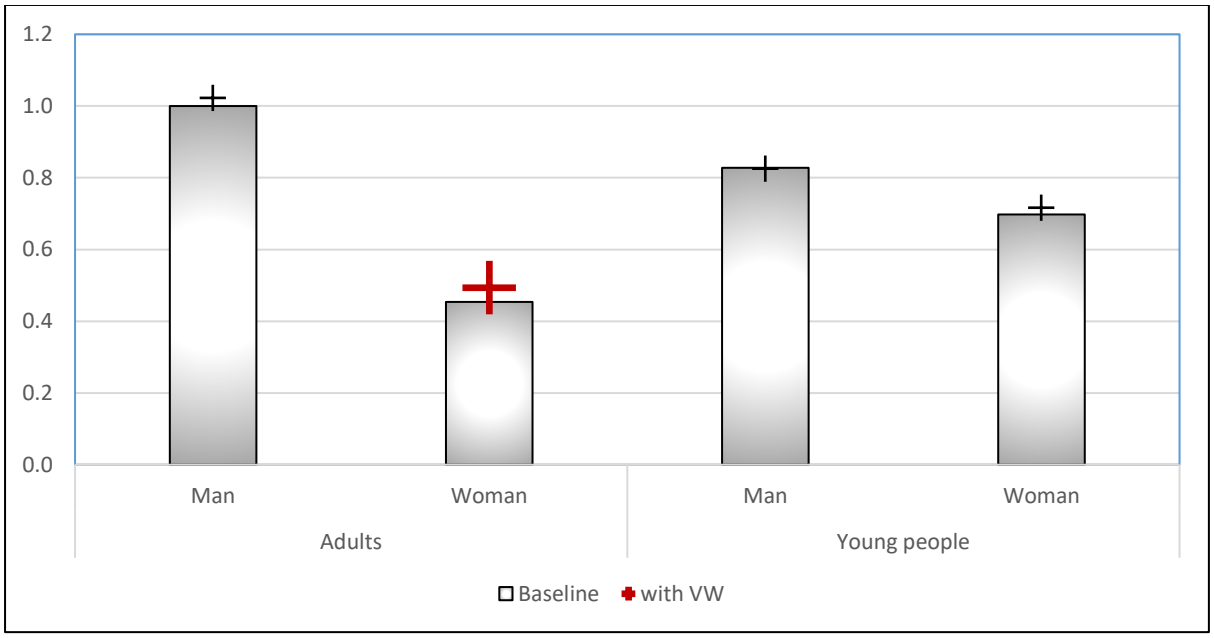


Source: Estimates based on UKHLS microdata, waves 2 and 9.
Notes: The figure is based on probit estimates of the probability of employment for young people at wave 9 (2017-2019) estimated separately by educational attainment. Young people were 16–29 years of age at wave 2. The baseline characteristics are married young people 27 years of age at wave 2. The red cross (with VW) shows the probability including the effect of participation in volunteer work at wave 2. In this case, a number of observations where it was impossible to attribute educational attainment were excluded from the estimation. More detailed results are reported in Appendix B, table B6. See also notes to figure 7 on statistical significance.

4.2 Volunteering and wages

Among young people, voluntary work does not appear to have the same impact on wages as on employment (**figure 10**). However, there is a statistically significant impact of voluntary work on the subsequent wages of older female workers (age 30–54 years of age in 2010–2012).[19] The estimated effect is of the order of a 9 per cent increase. There is some indication of a positive effect for young women and older men (around 2 per cent in both cases). However, the effect is not statistically significant in either case.

Figure 10. Impact of volunteering in 2010–2012 on subsequent hourly wages in 2017–2019 for young people and adults



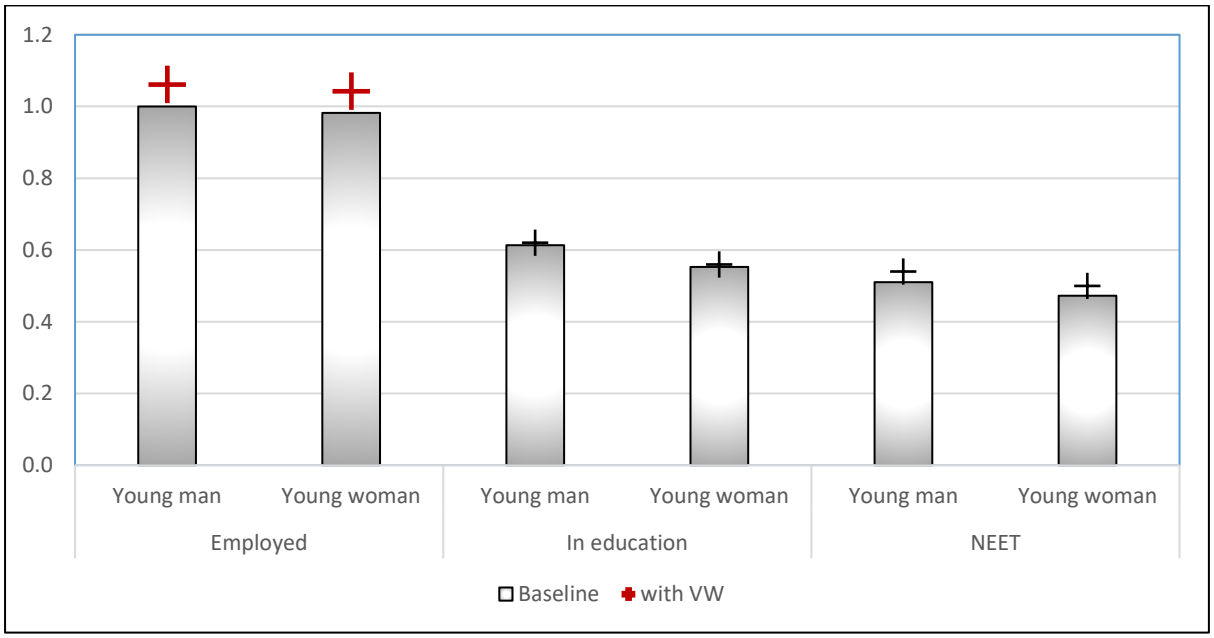
Source: Estimates based on UKHLS microdata, waves 2 and 9.
Notes: The figure is based on the effect of volunteer work at wave 2 (2010–2012) on log standardized hourly wages at wave 9 (2017–2019) controlling for sample selection, for people in employment, estimated separately for young men, young women, adult men and adult women. Young people were 16–29 years of age and adults were 30–54 years of age at wave 2. The representative individuals are a single young person 23 years of age at wave 2, with upper secondary education at wave 9 and a married adult of 42 years of age at wave 2, also with upper secondary education at wave 9. The red cross (with VW) shows the wage including the effect of participation in volunteer work at wave 2. As before wages are indexed (adult representative male wage = 1.0). Detailed results are reported in table B7 of Appendix B. See also notes to figure 7 on statistical significance.

For completeness, we also report the estimated effects of volunteering on youth wages, separating the effects first by status and then by education.[20] In contrast to the findings on employment, organization-based volunteering appears to raise the wages of people who

[19] These estimates control for non-random selection into employment. Similar results were obtained for a model of the variation in wages, equivalent to a fixed effects model controlling time invariant unobserved factors.
[20] When estimating wages for these subgroups, the small sample sizes mean results should be interpreted with caution. This also explains why the NEET group is not disaggregated.

were already previously employed, leaving unaltered the wages of those who were not in employment (NEET or in education) at the time of the first wave (**figure 11**).

Figure 11. Impact of volunteering on subsequent hourly wages in 2017–2019 of young people in 2010–2012 by status

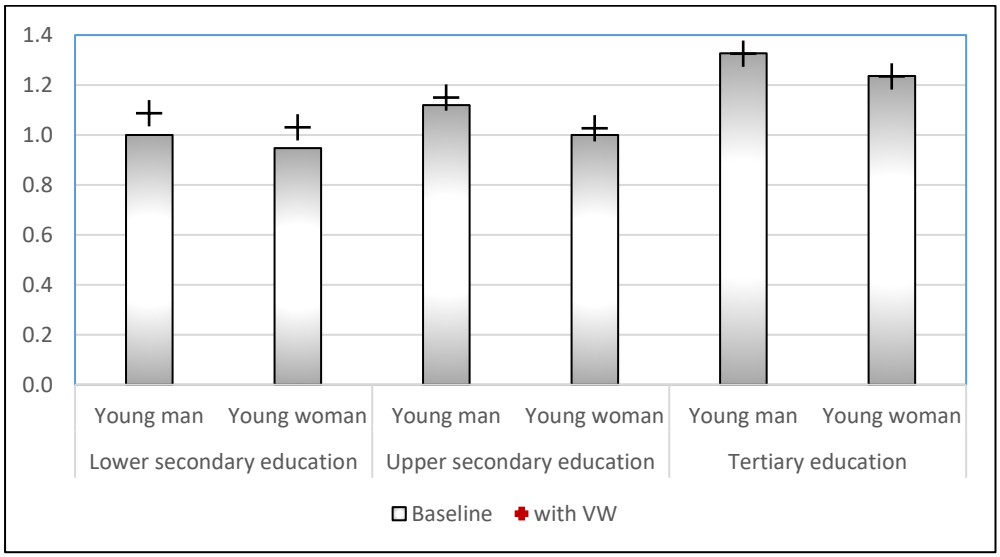


Source: Estimates based on UKHLS microdata, waves 2 and 9.
Notes: The figure is based on the effect of volunteer work at wave 2 (2010–2012) on log standardized hourly wages at wave 9 (2017–2019) for young people in employment estimated separately for men and women according to status at wave 2. Young people were 16–29 years of age at wave 2 . The representative individuals are single, 23 years of age at wave 2 with upper secondary education by the time of wave 9. The marginal effect relates to participation in volunteer work at wave 2. Detailed results are reported in table B8 of Appendix B. See also notes to figure 7 on statistical significance

Organization-based volunteering seems to particularly benefit young people already in the labour market at the time of the first wave. Young people who were employed saw no significant improvement in the chances of still being in employment later on but did benefit from a significant gain in hourly wages. Conversely, unemployed NEET who participated in organization-based volunteering saw a major gain in the chances of finding employment but no difference in their wage rates compared to NEETs who did not volunteer.

Regarding educational attainment, voluntary work and wages (**figure 12**), the results are quite similar to the relationship between voluntary work, educational attainment and the probability of being in employment considered above (in **figure 9)**. As is the case with employment prospects, participation in organization-based volunteer work seems to benefit those with lower secondary education or lower more than it does their more educated counterparts, although the estimated eight per cent increase in wages associated with participation in volunteer work for this group is not statistically significant.

Figure 12. Impact of volunteering on subsequent hourly wages (in 2017–2019) of young people by educational attainment

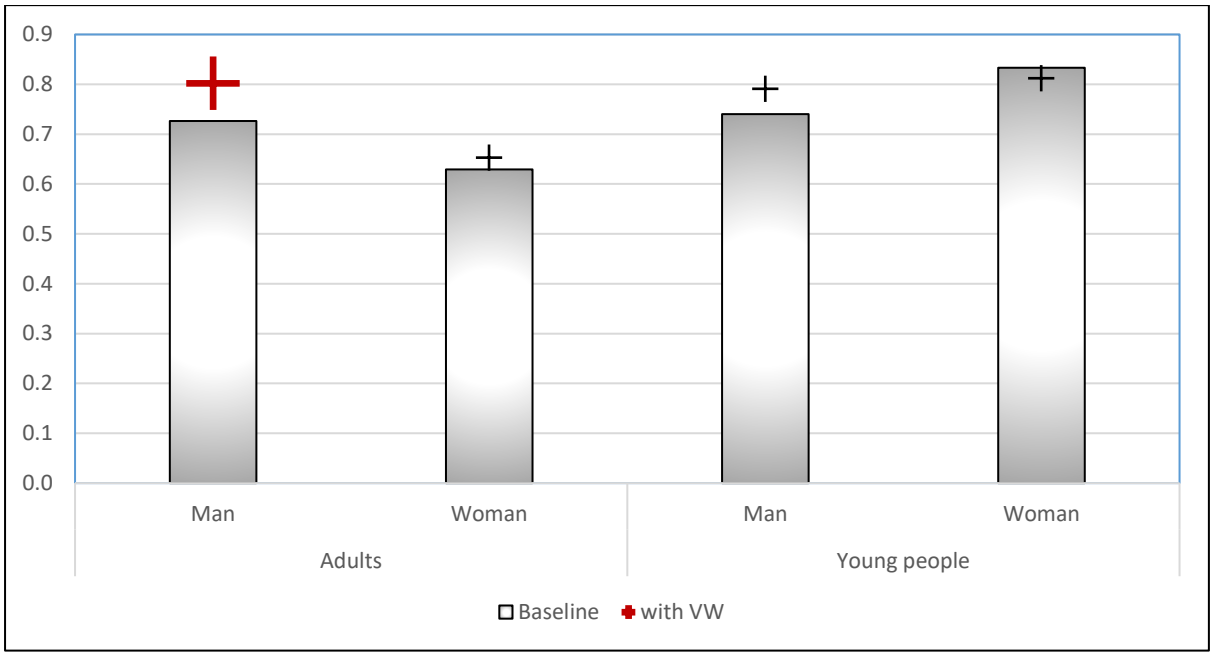


Source: Estimates based on UKHLS microdata, waves 2 and 9.
Notes: The figure is based on estimates of the effect of volunteer work at wave 2 (2010–2012) on log standardized hourly wages at wave 9 (2017–2019) for employed young people estimated separately for men and women according to educational attainment at wave 2 . Young people were 16–29 years of age at wave 2. The representative individuals are married young people 27 years of old at wave 2. The marginal effect relates to participation in volunteer work at wave 2. In this case, a number of observations where it was impossible to attribute educational attainment were excluded from the estimation. More detailed results are reported in Appendix B, table B8. See also notes to figure 7 on statistical significance.

4.3 Volunteering and health

Participation in voluntary work among young people does not appear to have a major impact on subsequent health. As with the literature reviewed above, participation in voluntary work does appear to have some beneficial consequences on health but only for older workers (figure 13). Among young people, the estimated effects of voluntary work are positive but not statistically significant.

Figure 13. Impact of volunteering on subsequent health in 2017–2019 for representative young people and adults



Source: Estimates based on UKHLS microdata, waves 2 and 9.

Notes: The figure is based on probit estimates of the probability of reporting good health for young men, young women, adult men and adult women at wave 9 (2017–2019), estimated separately. Young people were 16–29 years of age and adults were 30–54 years of age at wave 2 (2010–2012). The representative individuals are single young people 23 years of age at wave 2 and married adults 42 years of age at wave 2. The marginal effect relates to participation in volunteer work at wave 2. More detailed results are reported in table B9 of Appendix B. See also notes to figure 7 on statistical significance.

5. Conclusions and discussion

It is often claimed that volunteering is a useful activity, benefiting the individual volunteers, society and the beneficiary people or institutions. In particular, it is thought that one of the benefits of volunteering is the enhancement of the volunteer's longer-term employment prospects. However, there is a lack of quantitative evidence on the presence and extent of these benefits.

The development of the measurement of volunteer work based on existing labour force and household surveys made possible by the UNV and ILO partnership for the measurement of volunteer work has extended the range of countries with appropriate microdata for analysis. This paper has sought to contribute to filling gaps in the evidence by reviewing existing studies on the impact of volunteer work on the labour market outcomes of volunteers and to present new analysis focused on young people and using a broader range of countries than possible to date.

Undertaking and above all building on this exercise is important. Volunteering takes many forms and it is plausible that some are better than others in terms of supporting young people's acquisition of hard and soft skills, as well as contacts, hence promoting their integration into decent work. Moreover, while it is also reasonable to suppose that the usefulness of volunteer work as a bridge to employment or better employment can depend on individual characteristics (for example, is volunteering more useful for the people with higher levels of education or for those already in employment?) and across differing country contexts, we know far too little about what works and why in these circumstances.

This review and the analysis have revealed a number of interesting – sometimes conflicting – findings, with a number of implications for the future of building knowledge in this area.

5.1 Methodological findings

To date, there has been **very little work done to identify and quantify the impact of volunteer work on labour market outcomes**. There is limited research on young volunteers and nothing at all outside a limited group of high-income countries. This paper has sought to take the first steps to rectifying this knowledge gap but more needs to be done.

Identifying causality remains an issue. While a number of approaches are employed in the literature, there remains no consensus over the best approach. In general, the use of longitudinal data, with multiple observations on the same individuals, is helpful. Looking at changes in status over time (using a difference-in-difference or fixed effects approach) may be even more useful, since examining changes in the variables of interest may provide a relatively simple solution. In preparing this paper, we experimented with this type of estimate (for wages and health), with similar results to the more straightforward longitudinal estimates reported in the latter part of the paper. Nonetheless, the search for robust instruments to represent participation in volunteer work continues. This requires identifying and measuring phenomena that are correlated with participation in volunteer work but that only affect the outcome of interest (such as the probability of finding work) through their relationship with

volunteering. The instruments proposed to date have not been entirely convincing although a full discussion of this issue is beyond the scope of this paper. In the immediate future, the implementation of approaches using longitudinal data appears to be the most promising.

Implications

The bottom line is that **too few analyses have been carried out**, particularly in lower income countries. It is necessary to strengthen the knowledge base, preferably using more convincing statistical approaches. The strengthening of the underlying information base under the partnership between UNV and ILO represents a significant contribution to this process but more work is certainly needed. One fruitful line of inquiry may be **the exploitation of natural experiments** based on events (fortuitous or otherwise) that make volunteering more or less likely. A good example of this is the paper by Meier and Stutzer (2008), which studied the impact of volunteering on individual well-being exploiting the collapse of East Germany – and the consequent reduction in volunteering opportunities – to convincingly study the causal impact of volunteering on individual outcomes.

5.2 Findings on the relationships between volunteering and labour market outcomes

In both the existing literature and the further analysis presented here, **the bulk of the evidence suggests that participation in voluntary work is associated with positive labour market outcomes, particularly in high-income countries**. However, the identification of causality remains an issue. For example, to what extent, if at all, are the positive employment *effects* associated with volunteering a consequence of participation? Do they simply reflect the fact that in some countries young people in employment are more likely to volunteer? The use of longitudinal data attenuates but does not entirely resolve this issue.

The new evidence presented here suggests that the employment-related **benefits for young female volunteers may be greater than the benefits for young male volunteers**. This finding was consistent across all our analysis. Throughout the different countries in the cross-sectional analysis (section 3), volunteering was always associated with a larger positive (or smaller negative) change in both employment probabilities and wages for young women compared to young men. In the United Kingdom, this was also broadly true for employment and wages as a whole.

A more nuanced picture emerged from the more in-depth analysis. Regarding the chances of being in employment, the biggest impact of volunteering was on adult women (25 years of age and older) and young men. In fact, as a whole, organization-based volunteer work increased the probability of employment for young men slightly more than for young women. However, among those with the lowest levels of education and people who were unemployed (the young people whose employment chances were improved the most by volunteering) young women benefited slightly more than young men. To a certain extent, these results contrast with the predominant finding in the existing literature that employment and wage benefits are greater for men than women, particularly for adults.

Longitudinal analysis of volunteering in the United Kingdom found that **the greatest benefits** in terms of enhanced chances of finding work **were for young volunteers with the lowest levels of education**. This was also true of wages, although the effect was not statistically significant. This contrasts, at least partly, with the impression in the existing literature (also on the United Kingdom), which has tended to suggest that benefits primarily accrue to people with higher levels of education.

Across a variety of countries, while participation in volunteer work is less common among youth NEETs than among young people in employment or education, the longitudinal evidence from the United Kingdom suggests that **volunteering substantially increases the chances of finding employment for youth NEETs (especially those who are unemployed)**. In contrast, volunteering does not affect the probability of remaining in work for young volunteers who were already employed although this group did see statistically significant wage benefits.

The analysis also found **no statistically significant health benefits for young people as a whole from participating in volunteering**, despite health benefits for older adult males. This is consistent with the few studies that have examined this issue (**table 3**) and have found that **older volunteers appear to obtain improvements in their health as a result of participation** in volunteering.

Implications

The influence of sex on the impact of volunteering is likely to vary for the reasons discussed above, such as how social norms affect the different types of volunteer work by women and men, particularly youth. There is a need to better understand the dynamics of different types of volunteering. The differences – albeit minor – between the results presented here and those in the existing literature serve to emphasize the need for more specific knowledge of when, where, why and for whom volunteer work is associated with better labour market outcomes. While the emphasis here has been on building quantitative knowledge, qualitative data can also be highly informative when it comes to filling gaps in our understanding of the nature of volunteering in different contexts, such as how it is experienced by young people, what they expect from it and how this differs by sex.

Taken together, these findings on the effects of volunteering by sex, educational attainment and status of young people are encouraging. There are strong arguments in favour of implementing measures to facilitate the school-to-work transition with a primary focus on disadvantaged young people (O'Higgins 2017). The findings presented here suggest that volunteer work can be useful in complementing other measures to facilitate the school-to-work transition among more disadvantaged young people.

5.3 Discussion and the way forward

The paper has reviewed the state of knowledge and provided some further analysis on the impact of volunteer work on the labour market outcomes of young people. The indications are that in some contexts and for some young people, **volunteering can indeed provide**

useful support to young people on their difficult path towards decent work. However, we do not yet have sufficient knowledge in this area. Could engagement in volunteering be a useful complement to support the activation of youth NEET? While the evidence presented here tends to support that notion, it also suggests that involvement in volunteer work has been more useful for NEET unemployed (young people who are already actively searching for work) than NEET inactive (those who are more disconnected from the labour market).

This finding is in line with the results to date of the European Union (EU) Youth Guarantee programme. The programme, which has been implemented across the EU since 2014 and has been used as an example also in other countries outside the EU, such as in North Macedonia, involves a commitment by countries to provide a good quality offer of employment, education, training or other work-based learning within four months of young people leaving education or employment (that is, becoming classed as NEET). While the ability of countries to fully honour this commitment has varied, NEET rates in the EU have fallen considerably since implementation of the scheme. Between 2014 and 2019, prior to the COVID-19 pandemic, NEET rates in the EU fell by over 2 percentage points from 12.4 per cent to 10.2 per cent. This contrasts favourably with the global situation, which has seen NEET rates increase from 21.7 per cent to 22.2 per cent over the same period.[21]

However, the significant reduction in NEET rates in the EU has been achieved by reducing youth unemployment and not through a reduction in the numbers of inactive NEETs (Caliendo et al. 2018). This has not gone unnoticed and numerous countries have increased efforts to reach out to inactive NEETs. However, it is much harder – but arguably more important – to activate young people who have become dislocated from the labour market. The findings presented here on volunteering and NEETs are in line with those for the Youth Guarantee, which serves to emphasize the importance of examining ways in which volunteering and other forms of activation can support the reintegration of young people into the labour market. This is clearly an area where more policy research would be useful.

Related to this, but also of more general relevance, is the relationship between unpaid care work and volunteer work. Young inactive NEETs (particularly young inactive women) often perform unpaid care duties, which require time and energy. This reduces their engagement in volunteer work and impedes their access to the labour market. Nonetheless, we know very little about the relationship between these two phenomena and this is another example of an area in which further policy research is needed.

The papers reviewed and the new analysis presented suggest that, above and beyond the more general contribution it makes to its direct beneficiaries and society as a whole, participation in volunteer work can contribute to the integration of young people in decent work. However, we need to know more: What are the mechanisms through which volunteering brings a positive contribution to young people's lives? Which forms of volunteering are "better" in this sense? What is it about specific forms of volunteering – or their context – that makes them successful? While case studies and qualitative analyses can go some way to addressing these questions, they must also be complemented by more rigorous quantitative analysis.

The overarching finding remains that far too little is known about young people's participation in volunteer work and its effects on subsequent labour market access and progression. This

[21] Based on ILO estimates and projections: https://ilostat.ilo.org/data/.

paper has only scratched the surface. Moreover, to date very little quantitative analysis has been undertaken on volunteer work and young people and practically none outside a small number of high-income countries. This can partly be explained by the lack of adequate data on which to base such analysis. Fortunately, however, this is now beginning to change and we can hope that in the future we will obtain a better understanding of the mechanisms through which volunteer work can play a positive role in enhancing young people's transition from education to employment.

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Appendix A: Additional information on the data used in the analysis

Cross-sectional data

The cross-sectional study of the link between volunteer work and youth experience in the labour market is based on a data set from eight countries covering different regions and income groups, with more than 7 million observations. The data set allows the identification of individual participation in volunteer work. It is also occasionally possible to distinguish between organization-based and direct volunteering. It also provides annual information on individual characteristics, levels of qualifications, status and other labour market indicators.

The data for each country comes from different sources, primarily national labour force surveys covering different time periods. Table A1 in Appendix A summarizes the main characteristics of the surveys and table A2 in Appendix A provides descriptive statistics by country and sex for the youth population.

Longitudinal data

A series of statistical and econometric analyses were carried out for this study, based on the United Kingdom Household Longitudinal Study (UKHLS). The UKHLS is a panel survey on the living conditions and individual perceptions of the population of the United Kingdom. It is a longitudinal survey, covering approximately 40,000 households at wave 1 and has been carried out since 2009. Households are visited each year to collect information on changes to their household and individual conditions. Face-to-face interviews are conducted by trained interviewers in respondents' homes or through the self-completion of an online survey. The survey contains– specific questions to determine the participation of the interviewees in organization-based volunteer activities (defined as any unpaid help or work as a volunteer for any type of local, national or international organization or charity) in the last 12 months.

The survey was used to build a database focused on the individual response module and the income module from wave 9 (2017–2019). This was merged with the individual response module from wave 2 of the survey to create a substantive panel data set for responding adults. The data covers 52,979 men and women 16 years of age and over during wave 2 and wave 9. Some proxy observations – related to the relevant variables – were then removed, as well as individuals over 54 years of age in wave 2 to complete consolidation of the database for econometric analysis. The resulting database covered a panel of 26,273 individuals.

Table A3 summarizes the relevant variables for the analysis at the two points of interest. The variables are mainly related to participation in organization-based volunteer work, level of education, status inside and outside the labour market, health and income. Participation rates for organization-based volunteer work were between 16 and 20 per cent, depending on sex and age group. NEET rates for the youth sample (under 30 years of age) were 18 per cent for men and 34 per cent for women.

Table A1. Data description cross-sectional analysis

Country	Survey year and sample size															Type of survey
	2000	2004	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Bangladesh												249,626	493,886			LFS
Colombia						822,087	827,526	812,711	797,877	788,101	787,044	778,238	767,867	762,753	379,686	GHS
Costa Rica						41,184		39,390	38,779	38,399	37,291	37,006	34,843	35,096		GHS
Côte d'Ivoire												44,003				ENSESE
Indonesia													672,010	637,998		LFS
Mongolia				25,300	24,940	47,493	45,358	45,445	44,678	43,664	30,607	43,680	44,414	44,260		LFS
Occupied Palestinian Territory											98,862	94,036	91,230	90,994		LFS
Switzerland	17,733	54,229	48,485			67,088			71,705			62,732				LFS

Source: Statistics based on labour force and/or household survey microdata for eight countries held by ILOSTAT.
Note: For all countries, the data covers people between 15 and 64 years of age. LFS = labour force survey; GHS = General Household Survey; ENSESE = Enquête Nationale sur la Situation de l'Emploi et le Secteur Informel.

Table A2. Descriptive statistics cross-sectional analysis for young people (15–29 years of age) by sex

Country	Bangladesh		Colombia		Costa Rica		Côte d'Ivoire		Indonesia		Mongolia		Occupied Palestinian Territory		Switzerland	
Sex	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Volunteer work	0.077	0.045	0.023	0.021	0.022	0.027	0.021	0.017	0.129	0.111	0.035	0.031	0.005	0.012	0.18	0.17
Organization-based volunteer work	0.02	0.00	-	-	-	-	-	-	-	-	-	-	0.004	0.004	0.10	0.07
Direct volunteer work	0.06	0.04	-	-	-	-	-	-	-	-	-	-	0.002	0.007	0.06	0.08
Organization-based + direct volunteer work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.02
15–19 years of age	0.40	0.32	0.36	0.35	0.36	0.35	0.38	0.33	0.42	0.39	0.36	0.35	0.39	0.41	0.37	0.34
20–24 years of age	0.29	0.32	0.34	0.34	0.34	0.33	0.31	0.34	0.30	0.30	0.32	0.32	0.37	0.33	0.30	0.28
25–29 years of age	0.32	0.36	0.30	0.31	0.30	0.31	0.31	0.33	0.28	0.31	0.32	0.34	0.23	0.26	0.33	0.38
Married	0.29	0.67	0.23	0.34	0.19	0.29	0.23	0.56	0.20	0.40	0.14	0.19	0.12	0.31	0.11	0.20
No education	0.13	0.11	0.01	0.01	0.07	0.06	0.50	0.68	0.07	0.05	0.04	0.02	0.03	0.01	0.00	0.00
Primary and lower secondary education	0.40	0.42	0.34	0.27	0.62	0.57	0.38	0.25	0.51	0.49	0.36	0.30	0.60	0.48	0.40	0.36
Upper secondary education	0.42	0.43	0.33	0.33	0.22	0.25	0.06	0.04	0.36	0.35	0.44	0.42	0.28	0.36	0.45	0.48
Tertiary education	0.06	0.04	0.32	0.40	0.09	0.13	0.03	0.01	0.07	0.11	0.16	0.24	0.09	0.14	0.14	0.15
Education: missing value	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
In employment	0.60	0.25	0.58	0.40	0.57	0.33	0.52	0.38	0.58	0.37	0.47	0.36	0.40	0.06	0.72	0.67
In education	0.31	0.24	0.29	0.30	0.31	0.38	0.26	0.15	0.29	0.30	0.35	0.39	0.32	0.46	0.22	0.22
NEET unemployed	0.04	0.03	0.07	0.09	0.06	0.05	0.01	0.01	0.07	0.05	0.05	0.04	0.19	0.09	0.04	0.03
NEET inactive	0.06	0.47	0.06	0.20	0.06	0.24	0.21	0.45	0.07	0.28	0.13	0.21	0.10	0.39	0.03	0.08
Status: missing value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rural	0.51	0.47	0.09	0.08	0.45	0.44	0.51	0.50	0.52	0.51	0.41	0.38	0.19	0.19	0.18	0.17
Person with disability	0.00	0.00	0.00	0.00	0.03	0.02	0.04	0.04	0.01	0.00	0.03	0.03	0.00	0.00	0.00	0.00

Source: Statistics based on labour force and/or household survey microdata for eight countries held by ILOSTAT.
Note: For all countries, the data only covers people between 15 and 64 years of age.

Table A3. Descriptive statistics longitudinal analysis for young people (15–29 years of age) and adults (30–54 years of age) by sex

	2010–2012 (wave 2)				2017–2019 (wave 9)			
	Young people		Adults		Young people		Adults	
	Men	Women	Men	Women	Men	Women	Men	Women
Volunteer work participation (wave 2)	0.20	0.16	0.16	0.18				
Age	22.80	23.43	42.83	41.58				
16–19 years of age	0.30	0.21	0.00	0.00				
20–24 years of age	0.28	0.32	0.00	0.00				
25–29 years of age	0.42	0.47	0.00	0.00				
Married	0.35	0.41	0.77	0.68	0.54	0.52	0.76	0.63
Employed	0.61	0.51	0.76	0.62	0.80	0.61	0.71	0.62
In education	0.21	0.14	0.00	0.01	0.02	0.03	0.00	0.01
NEET unemployed	0.10	0.08	0.05	0.05	0.06	0.05	0.03	0.02
NEET inactive	0.08	0.26	0.18	0.32	0.13	0.31	0.26	0.35
Lower secondary education	0.28	0.32	0.26	0.27	0.21	0.27	0.26	0.26
Upper secondary education	0.20	0.17	0.08	0.07	0.17	0.12	0.07	0.07
Tertiary education	0.22	0.20	0.29	0.31	0.40	0.36	0.31	0.34
Education: missing value or no classification	0.30	0.31	0.38	0.36	0.22	0.24	0.36	0.33
Health good	0.09	0.15	0.23	0.24	0.11	0.19	0.27	0.31
Health poor	0.91	0.85	0.77	0.76	0.86	0.79	0.70	0.66
Health: missing value	0.00	0.00	0.00	0.00	0.03	0.02	0.03	0.03
Person with disability	0.18	0.21	0.34	0.36	0.22	0.32	0.40	0.43

Source: Statistics based on UKHLS microdata (wave 2 and 9).
Note: The data only covers people between 15 and 54 years of age at wave 2.

Appendix B: Detailed estimate results

Probit regression

Probit probabilistic models were estimated to identify the factors that affect the likelihood of participating in volunteer work, the likelihood of being employed and, for the longitudinal analysis of the United Kingdom, the probability of being in good health. The probit model is one of the most common non-linear models and is used to model binary or dichotomous outcome variables.

In binary dependent variable models, the values of the dependent variable can be either 0 or 1.

Y=1 with probability p

Y=0 with probability $1-p$

The probability that the dependent variable is 1, conditional on X factors or regressors, can be written as the standard normal cumulative distribution function Φ:

$$Pr(Y=1|X)= \Phi(\alpha+\beta X)$$

The main point is that, being non-linear, the effect of a change in one of the explanatory variables X, depends not just on the variable itself, but also on the probability at which the "marginal effect" is evaluated (that is, on all the other variables in the model). Typically, the effects of a dichotomous explanatory variable (for example, participation in voluntary work) are reported as the estimated percentage-point change in the probability of interest, such as the probability of being in employment:

$$Pr(Y=1|X)= \Phi(\alpha+\beta X+\gamma Z) - \Phi(\alpha+\beta X)$$

Where, for example, Z stands for participation in voluntary work and γ is the associated (estimated) parameter. The estimated effect is, by construction, greatest at probabilities of around 0.5 and decreases as the base probability increases or falls. In the text figures, baseline probabilities and the associated impact of participating in volunteer work are reported for specific types of individual. The type used is consistent throughout, changing only slightly when adults are considered. The underlying parameter estimates are reported in the tables below.

Sample selection regressions

The log-linear regressions of hourly wage rates take into account non-random selection for employment. The regressions themselves are also non-linear, so that the absolute change in the dependent variable depends on the starting point, similar to the probit model. The log-linear form, however, has the intuitively attractive property that the coefficient of explanatory variables represents the percentage change in the outcome variable that can be attributed to a change in the explanatory variable. However, this becomes approximate for dummy explanatory variables, meaning the discrete shift in log-wages associated with the possession of that specific characteristic. The figures provide a graphical representation of the absolute change associated with participation in volunteer work, setting one of the wages (either youth or adult male wages) to 1.0 in order to also indicate the underlying variation in wages associated with other different individual characteristics like sex and age.

Table B1. Determinants of volunteering work for young people 15–29 years of age in different countries (cross-sectional analysis)

	Bangladesh	Colombia	Costa Rica	Côte d'Ivoire	Indonesia	Mongolia	Occupied Palestinian Territory	Switzerland
Explanatory variables								
Female	-0.223***	-0.048***	0.057***	-0.285***	-0.100***	-0.054***	0.120***	-0.043***
	(0.011)	(0.004)	(0.020)	(0.079)	(0.006)	(0.015)	(0.030)	(0.016)
20–24 years of age	0.211***	-0.072***	-0.077***	0.054	0.089***	-0.002	0.131***	-0.124***
	(0.014)	(0.005)	(0.027)	(0.082)	(0.008)	(0.023)	(0.034)	(0.025)
25–29 years of age	0.315***	-0.007	-0.052	-0.032	0.123***	0.125***	0.048	-0.058**
	(0.015)	(0.006)	(0.032)	(0.098)	(0.009)	(0.027)	(0.042)	(0.028)
Married, partnership or cohabiting	0.097***	-0.090***	-0.036	-0.326***	0.106***	-0.008	0.183***	-0.245***
	(0.013)	(0.005)	(0.027)	(0.094)	(0.007)	(0.023)	(0.029)	(0.024)
In education	-0.122***	0.148***	0.230***	3.881***	-0.171***	0.134***	0.043	0.003
	(0.015)	(0.005)	(0.026)	(0.121)	(0.008)	(0.023)	(0.051)	(0.021)
NEET unemployed	0.020	0.028***	0.051	4.735***	0.000	-0.019	0.628***	-0.208***
	(0.024)	(0.008)	(0.046)	(0.183)	(0.011)	(0.036)	(0.039)	(0.045)
NEET inactive	-0.269***	-0.038***	-0.056	4.502***	-0.093***	-0.253***	0.411***	-0.131***
	(0.014)	(0.007)	(0.036)	(0.061)	(0.008)	(0.026)	(0.044)	(0.036)
Primary and lower secondary education	0.095***	0.207***	0.202***	-0.124	0.048***	0.043	0.311***	0.076
	(0.016)	(0.026)	(0.053)	(0.095)	(0.012)	(0.052)	(0.117)	(0.387)
Upper secondary education	0.222***	0.240***	0.321***	-0.913***	0.150***	0.086*	0.547***	0.305
	(0.017)	(0.026)	(0.056)	(0.330)	(0.012)	(0.052)	(0.117)	(0.386)
Tertiary education	0.305***	0.424***	0.535***	-0.375	0.198***	0.275***	0.639***	0.416
	(0.023)	(0.026)	(0.059)	(0.282)	(0.014)	(0.053)	(0.119)	(0.387)
Person with disability			0.027	-0.098	-0.654***	-0.050	-0.166	
			(0.071)	(0.204)	(0.054)	(0.058)	(0.324)	
Rural	0.068***	0.128***	0.079***	0.381***	0.162***	0.020	-0.213***	0.211***
	(0.009)	(0.007)	(0.020)	(0.071)	(0.005)	(0.017)	(0.035)	(0.026)
Year dummies	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	-1.782***	-2.433***	-2.477***	-6.064***	-1.292***	-1.864***	-3.503***	-0.548
	(0.019)	(0.028)	(0.068)	(0.088)	(0.014)	(0.060)	(0.130)	(0.387)
Observations	193,240	1,965,897	79,865	8,078	391,563	110,293	142,033	30,528
Pseudo R2	0.0333	0.0144	0.0244	0.151	0.0203	0.0302	0.107	0.0196

Source: More details on the source data for each country are reported in Appendix A.

Notes: Probit model estimates. Volunteer work participation is the dependent variable. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B2. "Determinants" of employment for young people 15–29 years of age in different countries (cross-sectional analysis)

	Bangladesh	Colombia	Costa Rica	Indonesia	Mongolia	Occupied Palestinian Territory	South Africa	Switzerland
Explanatory variables								
Volunteer work	-	-0.114***	-0.178***	0.119***	0.066***	-	-0.140	-
		(0.007)	(0.033)	(0.007)	(0.024)		(0.419)	
Organization-based volunteer work	0.072**	-	-	-	-	-0.824***	-	0.126***
	(0.030)					(0.091)		(0.024)
Direct volunteer work	0.272***	-	-	-	-	-0.361***	-	-0.045*
	(0.015)					(0.080)		(0.025)
Organization-based and direct volunteer work	-	-	-	-	-	-	-	0.109**
								(0.047)
Female	-1.233***	-0.552***	-0.821***	-0.684***	-0.432***	-1.452***	-0.392***	-0.157***
	(0.008)	(0.002)	(0.010)	(0.005)	(0.009)	(0.011)	(0.022)	(0.012)
20–24 years of age	0.601***	0.885***	1.066***	0.853***	1.023***	0.800***	1.097***	0.409***
	(0.009)	(0.003)	(0.013)	(0.006)	(0.013)	(0.011)	(0.035)	(0.019)
25–29 years of age	0.874***	1.310***	1.552***	1.202***	1.581***	1.142***	1.635***	0.828***
	(0.010)	(0.003)	(0.015)	(0.007)	(0.014)	(0.013)	(0.036)	(0.022)
Married, partnership or cohabiting	0.268***	0.156***	0.044***	0.050***	0.329***	-0.035***	0.397***	-0.332***
	(0.009)	(0.002)	(0.012)	(0.006)	(0.014)	(0.012)	(0.030)	(0.020)
Primary and lower secondary education	-0.084***	0.524***	0.135***	-0.482***	-0.374***	0.211***	-0.000	0.805***
	(0.010)	(0.009)	(0.021)	(0.010)	(0.029)	(0.028)	(0.047)	(0.253)
Upper secondary education	-0.732***	0.683***	0.296***	-0.277***	-0.526***	-0.123***	0.355***	1.111***
	(0.011)	(0.009)	(0.023)	(0.010)	(0.029)	(0.028)	(0.048)	(0.253)
Tertiary education	-0.483***	0.533***	0.392***	0.063***	-0.043	0.402***	0.951***	1.217***
	(0.017)	(0.009)	(0.025)	(0.013)	(0.030)	(0.030)	(0.066)	(0.254)
Person with disability	-	-	-0.952***	-1.591***	-1.015***	-0.837***	-	-
			(0.041)	(0.040)	(0.033)	(0.087)		
Rural	0.035***	0.172***	-0.010	0.204***	0.752***	0.216***	-0.359***	0.260***
	(0.006)	(0.004)	(0.010)	(0.005)	(0.010)	(0.010)	(0.023)	(0.018)
Year dummies	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	0.121***	-1.198***	-0.865***	-0.145***	-1.042***	-1.059***	-1.728***	-0.893***
	(0.012)	(0.010)	(0.027)	(0.011)	(0.034)	(0.030)	(0.417)	(0.253)
Observations	193,240	1,965,897	79,865	391,563	110,293	142,033	24,287	48,366
Pseudo R2	0.221	0.159	0.224	0.188	0.258	0.250	0.249	0.0920

Source: More details on the source data for each country are reported in Appendix A.

Notes: Probit model estimates. Being in employment is the dependent variable. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B3. Determinants of log hourly wages for young people 15–29 years of age in different countries (cross-sectional analysis)

	Bangladesh	Colombia	Indonesia	Switzerland
Explanatory variables				
Volunteer work	-	0.080***	-0.060***	-
		(0.006)	(0.006)	
Organization-based volunteer work	0.089***	-	-	0.074***
	(0.019)			(0.012)
Direct volunteer work	0.093***	-	-	0.037***
	(0.008)			(0.013)
Organization-based and direct volunteer work	-	-	-	0.077***
				(0.022)
Female	0.026***	-0.223***	-0.217***	-0.034***
	(0.006)	(0.002)	(0.005)	(0.007)
20–24 years of age	0.060***	0.362***	0.130***	0.597***
	(0.006)	(0.003)	(0.006)	(0.012)
25–29 years of age	0.080***	0.603***	0.179***	0.910***
	(0.007)	(0.003)	(0.006)	(0.013)
Married, partnership or cohabiting	-0.001	0.066***	0.063***	-0.001
	(0.005)	(0.002)	(0.005)	(0.009)
Primary and lower secondary education	0.051***	0.299***	0.034***	0.295
	(0.005)	(0.008)	(0.009)	(0.369)
Upper secondary education	0.322***	0.453***	0.144***	0.699*
	(0.006)	(0.008)	(0.009)	(0.369)
Tertiary education	0.737***	0.821***	0.161***	0.876**
	(0.013)	(0.008)	(0.011)	(0.369)
Person with disability	-	-	-0.140**	-
			(0.068)	
Informality	-0.001	0.162***	-0.921***	-
	(0.064)	(0.003)	(0.031)	
Self-employed	-	-0.109***	-	0.121***
		(0.002)		(0.022)
Rural	0.011***	-0.198***	-0.093***	0.009
	(0.004)	(0.003)	(0.004)	(0.009)
Year dummies	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	-0.532***	-1.662***	0.240***	-2.129***
	(0.068)	(0.010)	(0.033)	(0.370)
Observations	193,240	1,965,897	391,563	48,366
Prob > chi2	0.000	0.000	0.000	0.000

Source: More details on the source data for each country are reported in Appendix A.

Notes: Sample selection model estimates. The log standardized hourly wage for people who are employed and not in education is the dependent variable. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B4. Determinants of organization-based volunteering for young people 16–29 years of age in the United Kingdom for 2010–2012 (cross-sectional analysis)

	Educational attainment			Labour market and non-labour market status			
	Lower secondary education	Upper secondary education	Tertiary education	Employed	In education	NEET unemployed	NEET Inactive
Explanatory variables							
Female	-0.118	-0.028	0.066	-0.134**	0.254***	0.017	-0.394**
	(0.107)	(0.113)	(0.062)	(0.054)	(0.092)	(0.159)	(0.164)
20–24 years of age	-0.318**	-0.125	-0.129	-0.348***	0.021	-0.752***	0.020
	(0.141)	(0.148)	(0.082)	(0.080)	(0.114)	(0.213)	(0.226)
25–29 years of age	-0.201	0.270	-0.004	-0.208**	0.087	-0.301	0.188
	(0.127)	(0.174)	(0.089)	(0.082)	(0.176)	(0.184)	(0.214)
Married, partnership or cohabiting	-0.320***	-0.728***	-0.358***	-0.223***	-0.725***	-0.657***	-0.340***
	(0.116)	(0.153)	(0.071)	(0.060)	(0.215)	(0.171)	(0.110)
Upper secondary education	-	-	-	0.462***	0.176	0.972***	0.470***
				(0.079)	(0.112)	(0.267)	(0.165)
Tertiary education	-	-	-	0.477***	0.487***	0.516**	1.051***
				(0.074)	(0.184)	(0.244)	(0.156)
In education	0.145	0.118	0.067	-	-	-	-
	(0.152)	(0.149)	(0.077)				
NEET unemployed	-0.195	0.246	-0.166	-	-	-	-
	(0.131)	(0.222)	(0.159)				
NEET inactive	-0.556***	-0.415***	0.060	-	-	-	-
	(0.145)	(0.158)	(0.104)				
Self-reported health as good	-0.141	-0.259	0.149	-0.047	0.188	-0.817***	0.266
	(0.129)	(0.163)	(0.117)	(0.091)	(0.157)	(0.192)	(0.170)
Physical or mental impairment, illness or disability	0.277**	0.305**	0.080	0.214***	0.010	0.116	-0.018
	(0.112)	(0.139)	(0.084)	(0.067)	(0.127)	(0.168)	(0.148)
Region dummies	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	-1.316***	-0.904**	-0.289	-0.782***	-0.868***	-0.184	-1.708***
	(0.283)	(0.363)	(0.180)	(0.147)	(0.222)	(0.427)	(0.329)
Observations	1,599	850	2,343	3,401	1,019	551	1,225
Pseudo R2	0.102	0.0974	0.0290	0.0463	0.0343	0.166	0.154

Source: More details on the source data are reported in Appendix A.

Notes: Probit model estimates. Volunteer work participation at wave 2 is the dependent variable. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B5. Determinants of employment in the United Kingdom for 2017–2019 (longitudinal analysis)

	Adult men	Adult women	Young men	Young women
Explanatory variables				
Volunteer work; t=1	0.089*	0.167***	0.263***	0.147**
	(0.051)	(0.034)	(0.099)	(0.060)
20–24 years of age; t=1	-	-	0.083	-0.008
			(0.096)	(0.059)
25–29 years of age; t=1	-	-	0.192*	0.193***
			(0.098)	(0.056)
35–39 years of age: t=1	-0.061	0.287***	-	-
	(0.064)	(0.039)		
40–44 years of age; t=1	-0.032	0.270***	-	-
	(0.061)	(0.038)		
45–49 years of age; t=1	-0.166***	0.198***	-	-
	(0.060)	(0.039)		
50–54 years of age; t=1	-0.576***	-0.046	-	-
	(0.060)	(0.040)		
Married, partnership or cohabiting; t=2	0.591***	-0.063**	0.347***	-0.172***
	(0.038)	(0.026)	(0.082)	(0.044)
Upper secondary education; t=2	-0.049	0.132**	0.117	0.317***
	(0.072)	(0.053)	(0.116)	(0.070)
Tertiary education; t=2	0.036	0.341***	0.415***	0.638***
	(0.048)	(0.033)	(0.100)	(0.053)
Self-reported health as good; t=2	0.815***	0.797***	0.360***	0.647***
	(0.040)	(0.031)	(0.108)	(0.058)
Physical or mental impairment, illness or disability; t=2	-0.621***	-0.421***	-0.925***	-0.321***
	(0.038)	(0.029)	(0.083)	(0.048)
Region dummies; t=2	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	0.030	-0.217***	0.368**	-0.268***
	(0.092)	(0.063)	(0.185)	(0.103)
Observations	7,557	12,427	1,893	4,390
Pseudo R2	0.255	0.165	0.181	0.117

Source: More details on the source data are reported in Appendix A.

Notes: Probit model estimates. Being in employment at wave 9 is the dependent variable. Note that t=1 corresponds to observations for the variable from wave 2 and t = 2 to observations from wave 9. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B6. Determinants of employment, in the United Kingdom in 2017–2019 for young people 16–29 years of age in 2010–2012 (longitudinal analysis)

	Educational attainment			Labour market and non-labour market status			
	Lower secondary education	Upper secondary education	Tertiary education	Employed	In education	NEET Unemployed	NEET Inactive
Explanatory variables							
Participation in voluntary work; t=1	0.214*	0.114	0.061	0.069	0.166*	0.564***	0.012
	(0.127)	(0.120)	(0.074)	(0.076)	(0.099)	(0.177)	(0.145)
Female	-0.608***	-0.432***	-0.373***	-0.660***	-0.177*	-0.299**	-0.043
	(0.081)	(0.101)	(0.071)	(0.064)	(0.091)	(0.138)	(0.118)
20 - 24 years of age; t=1	0.116	-0.236*	-0.032	0.011	-0.029	0.015	-0.154
	(0.097)	(0.121)	(0.088)	(0.081)	(0.117)	(0.173)	(0.145)
25 - 29 years of age; t=1	0.224**	0.046	0.165*	0.264***	0.157	-0.170	-0.046
	(0.089)	(0.120)	(0.086)	(0.078)	(0.164)	(0.160)	(0.142)
Married, union or cohabiting; t=2	-0.260***	-0.039	0.049	-0.094	0.076	0.060	-0.410***
	(0.072)	(0.108)	(0.071)	(0.059)	(0.100)	(0.130)	(0.082)
Upper secondary education; t=2	-	-	-	0.197**	0.383***	0.118	-0.095
				(0.093)	(0.145)	(0.243)	(0.131)
Tertiary education; t=2	-	-	-	0.242***	0.414***	0.604***	0.827***
				(0.072)	(0.120)	(0.192)	(0.116)
Self-reported health: good; t=2	0.638***	0.393***	0.588***	0.586***	0.559***	0.249	0.505***
	(0.097)	(0.137)	(0.099)	(0.079)	(0.144)	(0.167)	(0.102)
Physical or mental impairment, illness or disability; t=2	-0.491***	-0.310***	-0.462***	-0.254***	-0.607***	-0.911***	-0.486***
	(0.079)	(0.120)	(0.073)	(0.066)	(0.102)	(0.144)	(0.093)
Region dummies; t=2	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	0.307*	0.567**	1.235***	0.593***	-0.018	0.440	-0.031
	(0.186)	(0.274)	(0.211)	(0.147)	(0.230)	(0.361)	(0.239)
Observations	1,599	850	2,343	3,405	1,020	551	1,301
Pseudo R2	0.135	0.116	0.100	0.106	0.126	0.197	0.134

Source: More details on the source data are reported in Appendix A.

Notes: Probit model estimates. Being in employment in wave 9 is the dependent variable. Note that t=1 corresponds to observations for the variable from wave 2 and t=2 to observations from wave 9. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B7. Determinants of log hourly wages in the United Kingdom (longitudinal analysis)

	Adult men	Adult women	Young men	Young women
Explanatory variables				
Volunteer work; t=1	0.022	0.084***	-0.003	0.026
	(0.023)	(0.017)	(0.039)	(0.027)
20–24 years of age; t=1	-	-	0.074*	0.094***
			(0.041)	(0.025)
25–29 years of age; t=1	-	-	0.187***	0.110***
			(0.042)	(0.024)
35–39 years of age: t=1	0.015	0.062***	-	-
	(0.025)	(0.019)		
40–44 years of age; t=1	0.002	0.062***	-	-
	(0.025)	(0.020)		
45–49 years of age; t=1	0.032	0.051**	-	-
	(0.026)	(0.021)		
50–54 years of age; t=1	0.160***	-0.002	-	-
	(0.030)	(0.022)		
Married, partnership or cohabiting; t=2	-0.013	0.108***	0.074**	0.117***
	(0.024)	(0.013)	(0.032)	(0.018)
Self-employed; t=2	-0.500***	-0.146***	-0.503***	-0.353***
	(0.032)	(0.033)	(0.073)	(0.063)
Upper secondary education; t=2	0.174***	0.013	0.123***	-0.000
	(0.031)	(0.027)	(0.047)	(0.031)
Tertiary education; t=2	0.331***	0.346***	0.177***	0.126***
	(0.022)	(0.016)	(0.035)	(0.028)
Self-reported health as good; t=2	0.001	0.370***	-0.029	-0.040
	(0.028)	(0.020)	(0.061)	(0.034)
Physical or mental impairment, illness or disability; t=2	0.092***	-0.121***	0.129**	0.025
	(0.021)	(0.015)	(0.056)	(0.024)
Region dummies; t=2	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	-0.203***	-1.013***	-0.426***	-0.494***
	(0.057)	(0.036)	(0.094)	(0.065)
Observations	7,491	12,337	1,869	4,355

Source: More details on the source data for each country are reported in Appendix A.

Notes: Sample selection model estimates. The log standardized hourly wage at wave 9 for people in employment and not in education is the only dependent variable. Note that t=1 corresponds to observations for the variable from wave 2 and t=2 to observations from wave 9. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B8. Determinants of hourly wages in the United Kingdom for young people 16–29 years of age in 2010–2012 (longitudinal analysis)

	Educational attainment			Labour market and non-labour market status		
	Lower secondary education	Upper secondary education	Tertiary education	Employed	In education	NEET
Explanatory variables						
Volunteer work; t=1	0.057	0.041	0.008	0.060**	0.011	0.056
	(0.058)	(0.070)	(0.026)	(0.029)	(0.044)	(0.056)
Female	-0.048	-0.236***	-0.065***	-0.018	-0.104**	-0.077
	(0.035)	(0.051)	(0.025)	(0.021)	(0.043)	(0.048)
20–24 years of age; t=1	0.153***	-0.088	0.123***	0.092***	0.014	-0.067
	(0.039)	(0.065)	(0.032)	(0.029)	(0.058)	(0.055)
25–29 years of age; t=1	0.126***	0.031	0.200***	0.123***	0.202***	-0.062
	(0.034)	(0.066)	(0.031)	(0.029)	(0.064)	(0.052)
Married, partnership or cohabiting; t=2	0.033	0.131**	0.111***	0.117***	0.108**	-0.070*
	(0.028)	(0.061)	(0.026)	(0.021)	(0.044)	(0.036)
Self-employed worker; t=2	-0.445***	-0.156	-0.395***	-0.309***	-0.532***	-0.002
	(0.073)	(0.177)	(0.081)	(0.057)	(0.187)	(0.080)
Upper secondary education; t=2	-	-	-	0.063**	0.242***	-0.047
				(0.031)	(0.076)	(0.068)
Tertiary education; t=2	-	-	-	0.203***	0.317***	0.332***
				(0.025)	(0.061)	(0.045)
Self-reported health as good; t=2	-0.101**	0.140*	0.007	-0.001	0.267***	0.101**
	(0.050)	(0.074)	(0.044)	(0.036)	(0.081)	(0.051)
Physical or mental impairment, illness or disability; t=2	0.100**	-0.123*	0.017	-0.008	-0.137**	-0.136***
	(0.041)	(0.066)	(0.030)	(0.026)	(0.057)	(0.042)
Region dummies; t=2	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	-0.400***	-0.687***	-0.359***	-0.519***	-1.109***	-0.923***
	(0.078)	(0.114)	(0.064)	(0.061)	(0.110)	(0.102)
Observations	1,577	841	2,323	3,376	1,003	1,845

Source: More details on the source data for each country are reported in Appendix A.

Notes: Sample selection model estimates. The log standardized hourly wage at wave 9 for people in employment and not in education is the only dependent variable. Note that t=1 corresponds to observations for the variable from wave 2 and t=2 to observations from wave 9. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table B9. Determinants of health in the United Kingdom (longitudinal analysis)

	Adult men	Adult women	Young men	Young women
Explanatory variables				
Volunteer work; t=1	0.248***	0.062	0.165	-0.081
	(0.058)	(0.039)	(0.113)	(0.076)
20–24 years of age; t=1			0.053	-0.029
			(0.130)	(0.085)
25–29 years of age; t=1			0.042	-0.108
			(0.134)	(0.082)
35–39 years of age: t=1	0.079	0.053		
	(0.073)	(0.047)		
40–44 years of age; t=1	-0.126*	-0.008		
	(0.069)	(0.046)		
45–49 years of age; t=1	-0.050	-0.039		
	(0.068)	(0.047)		
50–54 years of age; t=1	-0.171**	-0.031		
	(0.067)	(0.047)		
Married, partnership or cohabiting; t=2	0.145***	0.331***	-0.022	0.152***
	(0.045)	(0.030)	(0.095)	(0.055)
NEET unemployed; t=1	-0.320***	-0.397***	-0.252*	-0.233***
	(0.081)	(0.069)	(0.143)	(0.088)
NEET inactive; t=1	-0.560***	-0.359***	-0.183	-0.322***
	(0.053)	(0.034)	(0.154)	(0.062)
In education; t=1	-0.555**	-0.167	0.074	-0.025
	(0.235)	(0.134)	(0.134)	(0.094)
Upper secondary education; t=2	0.029	0.029	-0.255*	-0.009
	(0.079)	(0.063)	(0.143)	(0.088)
Tertiary education; t=2	0.195***	0.192***	0.087	0.212***
	(0.054)	(0.040)	(0.127)	(0.072)
Self-reported health as good; t=2	-1.185***	-1.264***	-1.042***	-1.226***
	(0.040)	(0.031)	(0.092)	(0.052)
Physical or mental impairment, illness or disability; t=2	1.030***	1.153***	0.862***	0.690***
	(0.047)	(0.036)	(0.125)	(0.064)
Region dummies; t=2	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Constant	0.478***	0.009	0.846***	1.005***
	(0.115)	(0.079)	(0.237)	(0.134)
Observations	7,331	12,042	1,825	4,303
Pseudo R2	0.385	0.399	0.204	0.261

Source: More details on the source data are reported in Appendix A.

Notes: Probit model estimates. Self-reported health (Good [Good, Very Good and Excellent] or Not-Good [Poor and Fair]) is the dependent variable. Note that t=1 corresponds to observations for the variable from wave 2 and t=2 to observations from wave 9. Robust standard errors in parentheses. Statistical significance indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.