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Volunteering and Measures of Human Development

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Through volunteering, millions of people actively participate in the work of overcoming challenges to human development. Growing evidence indicates that voluntary action is an important and essential complement to governments, nongovernmental organizations, and other stakeholders in their work to promote human development.¹ While recent research investments have strengthened knowledge on the contributions of volunteering to development, much additional research is needed to better understand how different dimensions of human development shape different expressions of volunteering. This research brief reports on correlations between national-level data on volunteering (175 countries) and key measures of human development. It represents a first step in better understanding those associations as well as differences by type of voluntary action.

Background

In 2018, the United Nations Volunteers program published the first comprehensive estimates of volunteering worldwide.² These data, disaggregated by country and region, informed the *2018 State of the World's Volunteerism Report*.³ The publication of these estimates has opened new avenues for research on the connections between volunteering and human development. Pursuing this line of inquiry responds to wider calls from the United Nations to “ensure that the differentiated impact of volunteers on the implementation of the [sustainable development goals] is documented.”⁴ It also advances objectives of the Global Research Agenda on Volunteering for Peace and Development,⁵ which aims to further theoretical and empirical research on volunteering. The research agenda sees volunteering as a strategy to help achieve the ambitions of Agenda 2030, a global commitment to

eradicate poverty by 2030, and to ensure that no one is left behind in pursuit of sustainable development.⁶

Methods

The correlation analyses reported here treated volunteering as the dependent variable. Volunteering is disaggregated by informal and formal volunteering.⁷ Volunteering statistics represent national percentages of full-time-equivalent workers participating in volunteering and were generated by the Johns Hopkins Center for Civil Society Studies.⁸ Various indicators of human development assessed in this study were extracted from the latest human development indices collected as background data for the 2018 *Human Development Report* by the United Nations Development Programme.⁹ Because previous studies documented statistically significant relationships between volunteering and gender,¹⁰ these analyses disaggregated indices where possible to assess differences by gender.

To begin, the correlation analyses merged the dependent variable data set (i.e., volunteering) with 37 separate data sets measuring indices of human development (See the Appendix for a list of variables and data sources). These indices were used as independent variables. The data sets containing these indices were extracted as separate files from the Human Development Data website and were merged country by country to allow direct comparisons across countries.¹¹ The analyses then accounted for variations in country names and matched countries, giving primacy to the United Nations Development Programme designations. Matching between several small regions failed, and the regions were systematically excluded from the analyses.¹² The independent variables and total n -size for each correlation analysis are specified in Table 1.



Table 1: Correlations Between Standard Human Development Indicators and National Percentages of Full-Time-Equivalent (FTE) Workers Participating in Volunteering (Formal and Informal)

National Measure	Formal Volunteering (% FTE / Population)			Informal Volunteering (% FTE / Population)		
	<i>R</i>	<i>p</i>	<i>N</i>	<i>R</i>	<i>p</i>	<i>N</i>
<i>Human Development</i>						
Human Development Index (HDI) ^a	.490***	.000	174	.104	.173	173
HDI, female	.527***	.000	159	.138	.083	158
HDI, male	.548***	.000	159	.104	.194	158
Inequality-adjusted HDI	.537***	.000	144	.166*	.047	143
<i>Income</i>						
Gross domestic product (GDP)	.139	.069	173	-.046	.548	172
GDP per capita	.467***	.000	173	.037	.627	172
Gross national income (GNI) per capita	.452***	.000	176	.027	.724	175
Estimated GNI per capita, male	.460***	.000	167	.026	.735	166
Estimated GNI per capita, female	.531***	.000	167	.019	.804	166
<i>Poverty</i>						
Multidimensional Poverty Index ^b	-.408***	.000	97	-.129	.209	97
Working poor (\$3.10 PPP/day; % employment)	-.339***	.000	123	-.097	.284	123
<i>Human Inequality</i>						
Coefficient of human inequality ^c	-.420***	.000	144	-.166*	.047	143
Inequality in education (%)	-.390***	.000	160	-.253**	.001	159
Inequality in life expectancy (%)	-.417***	.000	170	-.088	.255	169
Inequality in income (%)	-.091	.274	147	.039	.642	146
Volunteering by women only	-.042	.610	147	.197*	.017	146
Volunteering by men only	-.137	.097	147	-.165*	.046	146
Income inequality, Gini coefficient	-.159	.056	145	-.113	.179	144
Income inequality, Palma ratio	-.156	.061	145	-.105	.210	144
<i>Gender Development and Gender Inequality</i>						
Gender Development Index (GDI) ^d	.247**	.002	159	.162*	.042	158
GDI, volunteering by women only	.236**	.003	159	.190*	.017	158
GDI, volunteering by men only	.242**	.002	159	.094	.242	158
Gender Inequality Index (GII) ^e	-.488***	.000	154	-.178*	.027	153
GII, volunteering by women only	-.451***	.000	154	-.106	.192	153
GII, volunteering by men only	-.493***	.000	154	-.224**	.005	153
<i>Employment and Labor-Force Participation</i>						
Labor-force participation rate (ages 15+)	-.018	.820	167	-.101	.196	166
Labor-force participation (ages 15+), male	-.094	.226	167	-.201**	.009	166
Labor-force participation (volunteering by men only)	-.135	.083	167	-.258**	.001	166
Labor-force participation (ages 15+), female	.032	.679	167	-.022	.779	166
Labor-force participation (volunteering by women only)	.083	.287	167	-.016	.842	166
Total unemployment (% of labor force)	-.058	.457	167	.197*	.011	166
Unemployment rate (female-to-male ratio)	-.048	.538	167	.011	.885	166
Youth unemployment (ages 15–24)	-.033	.677	167	.145	.063	166
Youth unemployed rate (female-to-male ratio)	-.102	.191	167	-.009	.904	166

Table 1 (continued)

National Measure	Formal Volunteering (% FTE / Population)			Informal Volunteering (% FTE / Population)		
	R	p	N	R	p	N
<i>Education and Schooling</i>						
Education Index ^f	.446***	.000	174	.167 [*]	.028	173
Government expenditure on education (% of GDP)	.361***	.000	132	.228**	.009	131
Mean years of schooling	.416***	.000	174	.196 [*]	.010	173
Mean years of schooling, male	.431***	.000	164	.200 [*]	.011	163
Mean years of schooling, female	.457***	.000	164	.232**	.003	163

^a Reflects three dimensions of human development: a long and healthy life, access to knowledge, and a decent standard of living.

^b An alternative indicator to income, this measure poverty across three dimensions of health, education, and standard of living. Ten indicators are used in this measure (including assets); however, income is not included (see Alkire & Jahan, 2018).

^c An unweighted average of inequalities in health, education, and income.

^d Measures gender inequalities in health, education, and command over economic resources, as a ratio of female to male HDI.

^e Measures gender-based disadvantage across reproductive health, empowerment, and the labor market.

^f Calculated using a mean years of schooling ratio plus the expected years of schooling ratio.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Next, correlation analyses produced a scatterplot showing the dependent variable and each of the separate independent variables. This enabled assessment of assumptions of normality, homoscedasticity, linearity, and relative absence of outliers. Pearson correlation coefficients were then computed to assess the strength of each bivariate correlation and to test for statistical significance. Although the bivariate relationships were not always clearly linear, no gross violations were evident for statistically significant correlations.

Findings

Correlations report the relationship between volunteering (formal and informal) and seven categories of human development: (1) overall human development, (2) income, (3) poverty, (4) human inequality, (5) gender development and gender inequality, (6) employment and labor-force participation, and (7) education. A summary of findings from the correlation analyses is presented in Table 1.

Overall human development

Human development was assessed by the most widely accepted measure of this construct, the Human Development Index (HDI).¹³ The HDI seeks to measure a country's social and economic

achievements over time but does not measure *conditions* for human development (see Figure 1).

Correlation analyses indicated that a country's level of human development has a moderate-to-strong, positive, and statistically significant association with the proportion of full-time-equivalent workers engaged in *formal volunteering* ($r = .49, p < .001$) but no apparent association with people's participation in *informal volunteering* ($r = .10, p = .17$), and this is generally consistent across countries.

Income

The overall size of a country's economy (measured as gross domestic product, GDP) did not appear to be correlated with rates of informal or formal volunteering in the country ($p > .05$). However, when the size of the country's economy was averaged across its citizens, that average was positively and statistically significantly associated with formal volunteering. Two standard-of-living measures, GDP per capita and gross national income per capita, were both moderately and positively correlated with rates of participation in formal volunteering: $r = .47$ ($p < .001$) for GDP per capita, and $r = .45$ ($p < .001$) for gross national income per capita. This is consistent with other research assessing within-country samples.¹⁴ In contrast, neither standard-of-living

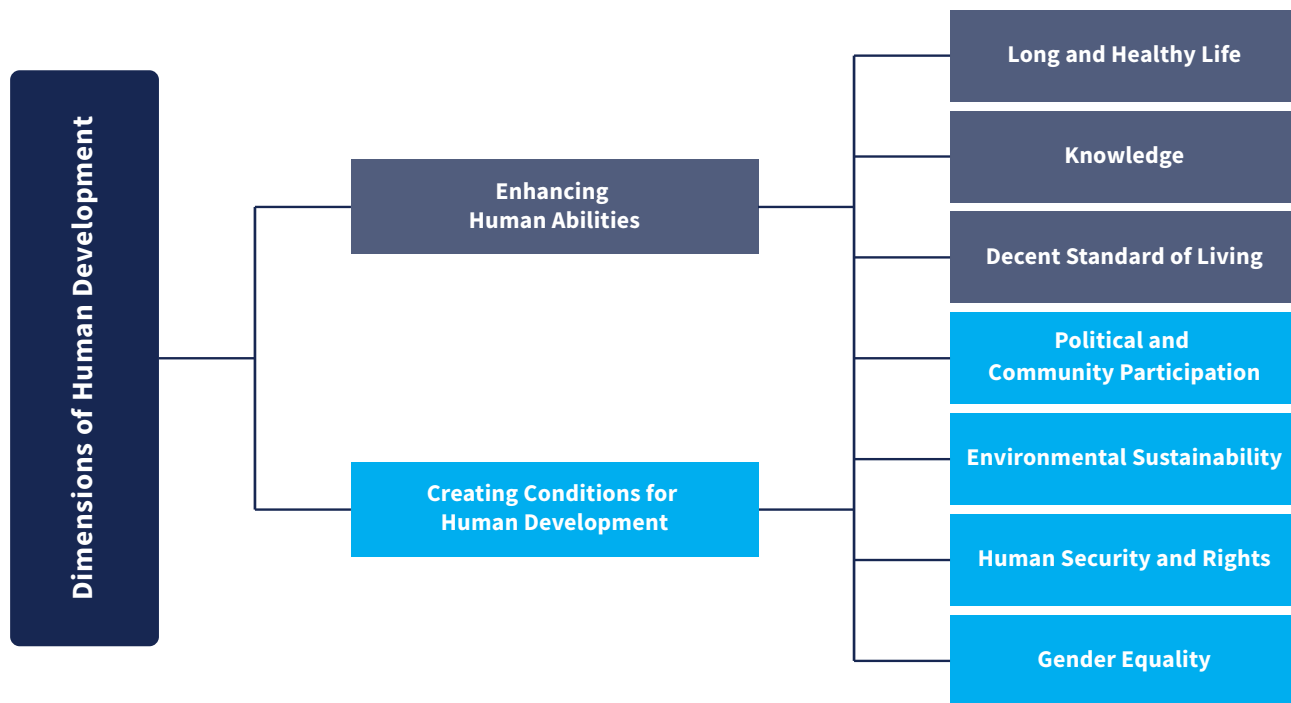


Figure 1. Dimensions of human development

Adapted from “What Is Human Development?” by Human Development Report Office Outreach, <http://hdr.undp.org/en/content/what-human-development>. Copyright 2015. Licensed under a [Creative Commons Attribution 3.0 IGO license](https://creativecommons.org/licenses/by/3.0/).

measure was statistically significantly associated with informal volunteering ($p > .05$). This finding is consistent with prior research, which reported that resources and status were positively associated with formal volunteering but that the respective associations with informal volunteering were weaker or statistically nonsignificant.¹⁵

Poverty

Consistent with results for the standard-of-living measures, the results for poverty indicate statistically significant relationships with formal volunteering. The two indicators of a country’s poverty rate, the Multidimensional Poverty Index and the proportion of employed people living on less than \$3.10 a day (purchasing power parity), were moderately and negatively correlated with rates of formal volunteering ($r = -.41, p < .001$; $r = -.34, p < .001$).¹⁶ In contrast, the results for informal volunteering show no evidence of responsiveness to poverty rates *across countries* ($p > .05$). These findings do not speak to the effects of relative poverty *within a country*; those effects are more evident from measures of human inequality.

Human Inequality

The Coefficient of Human Inequality, a composite measure, was moderately and negatively correlated with formal volunteering ($r = -.42, p < .001$) and weakly and negatively correlated with informal volunteering ($r = -.17, p < .05$). Human inequality is a multidimensional construct that can best be understood by disaggregating its component parts, particularly as volunteering is known to have a highly statistically significant relationship with educational achievement.¹⁷ Disaggregated findings indicate that national inequalities in life expectancy (distribution of the expected length of life) and education (distribution of years of schooling) were negatively associated with formal volunteering ($r = -.42, p < .001$; $r = -.39, p < .001$), while the indicators of income inequality (measured with the Gini coefficient and Palma ratio) were not statistically significantly associated with rates of formal volunteering ($p > .05$). Because these indicators measure income variations *within* a country’s population, they are measures of relative poverty. Thus, real

differences in income, education, and health appear to enhance opportunities and access to formal volunteering, but the relative perception of income seems to matter less.

The relationships between informal volunteering and inequality showed contrasting patterns. The only dimension of inequality that appeared to affect rates of informal volunteering for both genders was education; higher inequality in the distribution of years of schooling was weakly and negatively associated with rates of informal volunteering ($r = -.25, p = .001$). Although income inequality was significantly associated with informal volunteering only when disaggregated by gender, it did appear to affect men and women differently; it was significantly associated with higher rates of informal volunteering by women ($r = .20, p < .05$) and lower rates of informal volunteering by men ($r = -.17, p < .05$), although these correlations were comparatively weak.

Gender development and gender inequality

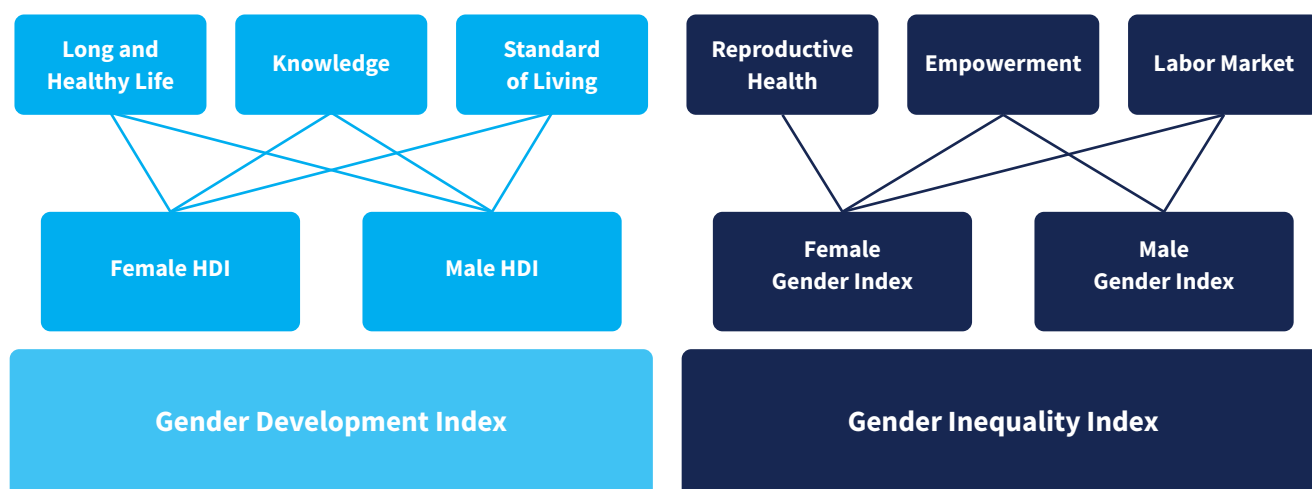
Countries with fewer gaps in women’s development (measured by the Gender Development Index) were significantly correlated with higher rates of formal volunteering ($r = .25, p < .01$).¹⁸ In other words, a positive association with the Gender Development Index indicates that countries where women lag behind men in their health, knowledge, and standard of living/control

over resources had lower rates of formal volunteering by both men and women. Likewise, countries with higher rates of gender-based disadvantage by women or men (measured by the Gender Inequality Index) had lower rates of formal volunteering by both men and women ($r = -.49, p < .001$).¹⁹ According to these findings, the effect of gender inequality was more strongly correlated with rates of formal volunteering than were gaps in women’s development. Differences between these indices are simplified in Figure 2 and described in greater detail in the statistical update.²⁰

Patterns of informal volunteering also differ by gender development and gender inequality, though in more nuanced ways. Countries where gaps in women’s development were smaller also had significantly higher rates of informal volunteering, but the correlation is weak and observed only among women ($r = .19, p < .05$). Countries with higher rates of gender-based disadvantage (across reproductive health, empowerment, and the labor market measures in the Gender Inequality Index) showed lower rates of informal volunteering by men but not by women ($r = -.22, p < .01$). Therefore, greater equality in women’s development was associated with higher rates of informal volunteering by women, though their informal volunteering appeared unresponsive to rates of gender inequality, and men’s informal participation declined as gender inequality grew.

Figure 2. Components of Gender Development and Inequality Indices

Adapted from *Human Development Indices and Indicators: 2018 Statistical Update*, by United Nations Development Programme (2018).



Employment and labor-force participation

Across countries, rates of employment and labor-force participation had no evident association with rates of formal volunteering ($p > .05$). However, a high rate of labor-force participation by men (i.e., a high supply of men's labor in a country) was negatively associated with men's participation in informal volunteering ($r = -.26, p < .001$). Labor-force participation was not associated with formal or informal volunteering by women. This is consistent with some previous research, which found that employment may *discourage* men from participating in formal volunteering but that it tends to *deter* men from engaging in informal volunteering.²¹ In contrast to the result for men, a high rate of labor-force participation by women was not significantly associated with men's or women's participation in informal volunteering ($p < .05$). Overall employment rates in countries provide context for this finding. A higher rate of unemployment (among those available and actively seeking work) was not statistically significantly correlated with formal volunteering ($p < .05$) but was weakly correlated with higher participation in informal volunteering ($r = -.20, p < .05$). There was no evident difference by gender.

Education

Across all measures, education and schooling were moderately correlated with higher rates of both formal and informal volunteering. This is consistent with previous research, which has found a moderate-to-strong correlation between education and each type of volunteering. The correlation with formal volunteering was stronger.²²

Conclusion

These analyses indicate statistically significant correlations between expressions of volunteering and multiple dimensions of human development. At the most basic level, rates of participation in volunteering were influenced by human inequalities in income, gender, access to education, and labor-force participation. Clear differences were also evident by type of volunteering, with the strongest correlations observed between formal participation and most measures of human development. These differences suggest that people are more likely to

participate in formal, organization-based volunteering in countries where the standard of living and national expenditures on education are higher, rates of poverty are lower, and there is greater equality in health, education, and gender relations.

The associations between informal volunteering and these varied dimensions of human development were less evident. Equality of educational opportunity and schooling had the most distinct influence on whether people helped others outside of an organizational setting. Informal volunteering also appeared to be more markedly gendered than was formal volunteering. When income inequality was high, women were more likely than men to help others. In fact, men helped others less often under these same conditions. One explanation may be found in the significant association between high labor-force participation and low rates of informal volunteering among men. Previous studies suggest that a "role substitution" effect may occur between various productive activities, including employment and volunteering.²³ Role substitution theory predicts that when people stop performing a role that had previously contributed to their identity and purpose (e.g., paid labor), they will seek alternative roles to serve this purpose (e.g., volunteering). While the findings imply support for this hypothesis, they also indicate that people tend to help people more when unemployment is high (no difference by gender). This suggests that volunteering's relationships with unemployment, labor-force participation, and gender reflect more than mere role substitution—they are more complex and nuanced. Additional research can further inform these dynamics.

Findings from these analyses are tempered by an ongoing challenge to adequately capture the variety and extent of people's participation in informal volunteering, which is persistently underestimated.²⁴ This is particularly true of estimates from the Global South.²⁵ The findings also prompt acknowledgement of the virtuous circle between volunteering and resources—whereby pathways of causation between volunteering and human development are knowingly muddled.²⁶ In addition, bivariate correlations with imperfect assumptions of linearity and normality are limited in their statistical power. More complex and

multivariate analyses can provide greater insight into the connection between human development and inclusive opportunities for volunteering at the national level. Additional research in these areas can inform discussions about the connections between volunteer infrastructure, cultures of participation, and sustainable peace and development.²⁷

Appendix Data Sources

Variable or Index	Data Source
Dependent Variable	
Volunteering (formal and informal)	Based on data generated by the Johns Hopkins Center for Civil Society Studies and published as Salamon, Sokolowski, and Haddock (2018).
Independent variables^a	
Gross domestic product (GDP) per capita (2011 PPP dollars)	World Bank (n.d.); United Nations Department of Economic and Social Affairs (2017).
Gross national income per capita (2011 PPP dollars)	World Bank (n.d.); International Monetary Fund (2018); 2018 data were compiled from multiple sources of the United Nations Department of Economic and Social Affairs, Statistics Division (2018, n.d.).
Multidimensional Poverty Index	Human Development Report Office calculations based on data on household deprivations in health, education, and standard of living from various household surveys (United Nations Development Programme, 2018c).
Working poor at PPP \$3.10 a day (% of total employment)	International Labour Organization (n.d.).
Labor-force participation rate (ages 15+)	
Unemployment, total (% of labor force); youth; gender	
Coefficient of human inequality ^b	Calculated by the Human Development Report Office: Arithmetic mean of the values in indices of inequality in life expectancy, inequality in education and inequality in income (United Nations Development Programme, 2018c).
Inequality in education (%)	Calculated by the Human Development Report Office based on data from the Luxembourg Income Study database; Eurostat's European Union statistics on income and living conditions; the World Bank's International Income Distribution Database; the Center for Distributive, Labor and Social Studies, and the World Bank's Socio-Economic Database for Latin America and the Caribbean; ICF's Macro Demographic and Health Surveys; and United Nations Children's Fund Multiple Indicator Cluster Survey (United Nations Development Programme, 2018c, p. 4).
Inequality in income (%)	
Inequality in life expectancy (%)	Calculated by Human Development Report Office from abridged life tables of the United Nations Department of Economic and Social Affairs (2017).

Variable or Index	Data Source
Income inequality, Gini coefficient Government expenditure on education (% of GDP)	World Bank (n.d.).
Income inequality, Palma ratio	Human Development Report Office calculations based on data from World Bank (n.d.).
Gender Inequality Index (GII)	Human Development Report Office calculations based on data from maternal mortality ratio, adolescent birth rate, share of seats in parliament held by each sex, population with at least some secondary education, and labor-force participation rate (United Nations Development Programme, 2018c).
Human Development Index (HDI) Gender Development Index (GDI)	Human Development Report Office calculations based on data from United Nations Department of Economic and Social Affairs (2017), the United Nations Educational, Scientific and Cultural Organization, Institute for Statistics (2018), 2018 United Nations Statistics Division data, 2018 World Bank data, 2016 Barro-Lee Educational Attainment Dataset projections, and 2018 IMF data. See International Monetary Fund (n.d., 2019) and United Nations Development Programme (n.d., 2018c).
Inequality-adjusted HDI	Calculated by the Human Development Report Office as the geometric mean of the values in Inequality-Adjusted Life Expectancy Index, Inequality-Adjusted Education Index, and Inequality-Adjusted Income Index (Alkire & Foster, 2010).
Education Index	Human Development Report Office calculations “based on expected years of schooling” and “mean years of schooling” (United Nations Development Programme, 2018c, p. 2) from the United Nations Educational, Scientific and Cultural Organization, Institute for Statistics (2018) and other sources.
Mean and expected years of schooling (years)	Compiled from multiple sources, based on 2018 UNESCO Institute for Statistics (2018), ICF Macro Demographic and Health Surveys, and 2017 UNICEF Multiple Indicator Cluster Surveys and OECD. See United Nations Development Programme (n.d.).

^a All independent variable measures were extracted prior to aggregation from United Nations Development Programme (2018).

Notes

- ¹ Aked (2015); Burns et al. (2015); Lough, Carroll, Bannister, Borromeo, and Mukwashi (2018).
- ² Salamon, Sokolowski, and Haddock (2018).
- ³ Lough, Carroll, et al. (2018).
- ⁴ G.A. Res. 70/129, para. 15 (Dec. 17, 2015).
- ⁵ Lough, Allum, Devereux, and Tiessen (2018).
- ⁶ U.N. Secretary General (2018).
- ⁷ *Informal volunteering* is defined as voluntary action performed “for households other than the household of the volunteer worker or of related family members” outside of organizations. *Formal volunteering* is defined as voluntary activities performed “through or for organizations comprising market or non-market units, including through or for self-help, mutual aid or

community-based groups of which the volunteer is a member” (Salamon et al., 2018, p. 14). Formal volunteering is more collective, structured, public, extrinsically motivated, and visible; informal volunteering is more individualized, personal, private, intrinsically motivated, and unseen (Van Tienen, Scheepers, Reitsma, & Schilderman, 2011; Wilson & Musick, 1997).

- ⁸ Salamon et al. (2018).
- ⁹ United Nations Development Programme (2018a).
- ¹⁰ Lough, Carroll, et al. (2018).
- ¹¹ United Nations Development Programme (2018a). All data sets were aggregated using IBM SPSS Statistics 24 data merge syntax.
- ¹² Statistics for the United Nations Development Programme’s *Human Development Report* are based

on grouping from 189 countries. Volunteering statistics compiled by Johns Hopkins Center for Civil Society used slightly different regional boundaries ($n = 208$). As a result, there was minor misalignment in regions across these data sources. Therefore, the analyses excluded 14 small countries identified in the *Human Development Report* data sets and 27 countries (mostly small islands) identified in the Johns Hopkins Center for Civil Society data set.

- ¹³ As defined by the United Nations Development Programme (2018c, p. 2), “The Human Development Index (HDI) is a summary measure of achievements in three key dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.”
- ¹⁴ Lee and Brudney (2012); McBride, Greenfield, Morrow-Howell, Lee, and McCrary (2012); Mitani (2014); Williams (2004).
- ¹⁵ Wilson and Musick (1997); Henriksen, Koch-Nielsen, and Rosdahl (2008).
- ¹⁶ National poverty was measured with two indicators: The Multidimensional Poverty Index and the proportion of employed people living on less than \$3.10 a day (purchasing power parity).
- ¹⁷ Bekkers and Wiepking (2011).
- ¹⁸ The Gender Development Index is a computed ratio of female to male human development in the areas of health, education, and control over resources.
- ¹⁹ The Gender Inequality Index measures inequalities in achievement between women and men in reproductive health, empowerment, and the labor market. It is computed as a harmonic mean across genders and ranges from 0 (where women and men are equal) to 1 (where one gender is poor in all dimensions; United Nations Development Programme, 2018c, p. 7).
- ²⁰ United Nations Development Programme (2018b).
- ²¹ Choi, Burr, Mutchler, and Caro (2007).
- ²² Taniguchi (2012); Gesthuizen, Van der Meer, and Scheepers (2008).
- ²³ Choi et al. (2007, p. 100); see also Chambré (1984, p. 293).
- ²⁴ Einolf, Prouteau, Nezhina, and Ibrayeva (2016); Salamon et al. (2018).
- ²⁵ Roitter (2017).
- ²⁶ Wilson and Musick (1998).
- ²⁷ Grandi, Lough, and Bannister (2018).

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For more information about this study, and to access the data that informed this analysis, please contact CSD Faculty Director Benjamin Lough, University of Illinois at Urbana-Champaign, USA (bjlough@illinois.edu).

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