Measure for Measure: Capturing Generosity in Volunteering

By Rich Steinberg, Barbara Duffy, Ruth Hansen, and Yuan Tian

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Generosity as Relative Sacrifice

- Freely given (not taxes)
- In support of something external to oneself
- Doesn’t matter whether some benefits accrue to oneself (?)
- Doesn’t matter whether recipient benefits from the donor sacrifice
- Donations of time and money count as (gross) generosity.
- Consistent with Abrahamic religious texts
  - Tithing
  - Parable of the widow’s mite

Descriptive Measures of Generosity

- Designed to measure
  - Personal generosity: whether individual generosity varies over time
  - Interpersonal generosity: whether one person is more generous than another
  - For gifts of money generosity is usually defined as donations/income
  - Lots of studies (including by us) on whether generosity is U-shaped in income
  - For gifts of volunteer time to formal organizations
    - We believe we are the first

Generosity in Volunteering to Formal Organizations

- Leaves out informal volunteering, stipended volunteering, labor donation (working for less than the market rate to support a cause)
- Leaves out those who want to volunteer but are rejected or otherwise lack the opportunity
- May include a bit of court-ordered or otherwise “involuntary” volunteering

Desirable Qualities for a Measure of Generosity in Volunteering

- Increasing in hours volunteered
- Decreasing in time available
- Decreasing in nonlabor income

Desirable Qualities for a Measure of Generosity in Volunteering

- Increasing in hours volunteered
- Decreasing in time available
  - Available time is that not required for other activities.
    - It is difficult to clearly distinguish time required from time devoted
    - The distinction is a judgment made by the researcher, not an aspect of choice
    - Treatment of medical conditions
    - Pre-committed time
  - Decreasing in nonlabor income
### Desirable Qualities for a Measure of Generosity in Volunteering

- Increasing in hours volunteered
- Decreasing in time available
- Decreasing in nonlabor income
  - Nonlabor income makes more time available by reducing paid hours required for subsistence.
  - A simplification due to the way we treat labor income
  - Pre-committed income

### Measure 1: Time Only

\[ T = \frac{V}{A} \times 100 \]

- \( V \): hours volunteered
- \( A \): hours available
- Units: percent
- Obeys the first two principles, but not the third.

### Measure 2: Valued Time

\[ VT = \frac{wV}{wA + N} \times 100 \]

- \( w \): wage rate (or shadow wage rate for those not working or not in the labor force)
- \( N \): nonlabor income
- \( wA + N \): potential income

- Potential Income = amount a person with wage \( w \) could earn if she worked every available hour + nonlabor income.
  - Units are dollars
  - Actual hours worked is not used because it is a mixture of required and optional
  - \( VT \) is identical to \( T \) when nonlabor income is zero.

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### Theory Confronts Reality

"An economist is someone who sees something work in practice and wonders if it would work in theory."

--Ronald Reagan
Data

• 2005 wave of the PSID and appended PPS
  • We used 3,207 single-headed households who answered the volunteering question (with a sane answer)
  • 804 households reported volunteering some time
• Volunteering: unpaid work through organizations.
  • Many questions. Some answered with hours, some answered in unfolding time brackets.
  • We used the cleaned PPS extract (cleaning explained in Wilhelm 2006)

Available Time

• Crudely measured, given the data and the fact that this is the first attempt to measure this
  \[ A = 168 - \text{required sleep} - \text{required child time} - \text{required health time} \]
  • A is weekly hours
  • Sleep
    • 56 hours for those aged 18-64
    • 52.5 hours for those 65 and older

Available Time (continued)

• Child time
  • First child = 7 hours
  • Each additional child = 3.5 hours
  • Add 14 hours if the youngest is younger than 5 years old
  • Don’t forget child time is often multi-tasked
• Health
  • If health status = poor or fair, 7 hours

Wages

• PSID imputes wage rates for those who work
• For those who do not have paid jobs, we estimate “wage offers”
• We use 2-step Heckit to impute wage offers.
  • First, the selection equation estimates the probability that each household is employed for pay
  • Second, the wage equation
  • Fitted values for those not employed (estimated wage offers)

Nonlabor Income

• PSID reports total taxable income
  • From which we subtract total labor income
  • And add nontaxable nonlabor income, which is the sum of social security and other transfer income

Table 1. Comparison of PSID/PPS Sample with Current Population Survey Supplement on Volunteering

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Population</th>
<th>Annual Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single, never married</td>
<td>PSID 28.3%</td>
<td>57</td>
</tr>
<tr>
<td>Other marital status</td>
<td>CPS 23.0%</td>
<td>40</td>
</tr>
<tr>
<td>Married</td>
<td>25.4%</td>
<td>104</td>
</tr>
<tr>
<td>CPS</td>
<td>25.9%</td>
<td>52</td>
</tr>
</tbody>
</table>

1 For those reporting annual hours
2 Includes divorced, separated, and widowed persons
Table 2a: Descriptive Statistics for Variables Used to Construct Generosity Indices

<table>
<thead>
<tr>
<th></th>
<th>Full Sample (n=3207)</th>
<th>Volunteers Only (n=804)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>Total volunteering (weekly)</td>
<td>0.9</td>
<td>0</td>
</tr>
<tr>
<td>Available hours (weekly)</td>
<td>108.64</td>
<td>112.00</td>
</tr>
<tr>
<td>Required sleep time</td>
<td>55.18</td>
<td>56.00</td>
</tr>
<tr>
<td>Required child time</td>
<td>2.46</td>
<td>0</td>
</tr>
<tr>
<td>Required health time</td>
<td>1.52</td>
<td>0</td>
</tr>
<tr>
<td>Hourly Wage</td>
<td>17.43</td>
<td>14.46</td>
</tr>
<tr>
<td>Nonlabor income (weekly)</td>
<td>1083</td>
<td>252</td>
</tr>
</tbody>
</table>

Table 2b: Distribution of Observations for Generosity Indices (n=804)

<table>
<thead>
<tr>
<th></th>
<th>Time Only</th>
<th>Valued Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>1.54</td>
<td>1.3</td>
</tr>
<tr>
<td>Mean</td>
<td>3.18</td>
<td>2.81</td>
</tr>
<tr>
<td>Variance</td>
<td>27.13</td>
<td>23.11</td>
</tr>
<tr>
<td>Min</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Max</td>
<td>60</td>
<td>54.18</td>
</tr>
<tr>
<td>Skewness</td>
<td>4.49</td>
<td>4.83</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>30.74</td>
<td>35.67</td>
</tr>
</tbody>
</table>

Distributional Plots

The Plot Thickens

Pearson (Rank order) Correlations between Indexes (Volunteers Subsample)

<table>
<thead>
<tr>
<th></th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time only vs. Valued Time</td>
<td>0.99</td>
</tr>
<tr>
<td>Time only vs. Money</td>
<td>0.31</td>
</tr>
<tr>
<td>Valued Time vs. Money</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Table 4: Volunteer Generosity Sample Splits (Volunteers Only)

<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Valued Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N Mean</td>
<td>% SD/SE</td>
</tr>
<tr>
<td>Full Sample</td>
<td>3207</td>
<td>0.83 3.01</td>
</tr>
<tr>
<td>Volunteers Only</td>
<td>804</td>
<td>3.16 5.21</td>
</tr>
<tr>
<td>African American</td>
<td>347</td>
<td>4.31 0.47</td>
</tr>
<tr>
<td>Low Income</td>
<td>146</td>
<td>4.59 0.75</td>
</tr>
<tr>
<td>Attend Services &gt; Weekly</td>
<td>139</td>
<td>4.98 0.52</td>
</tr>
<tr>
<td>Black Protestant vs. Evangelical</td>
<td>197</td>
<td>4.59 0.53</td>
</tr>
</tbody>
</table>
Table 5: Differences in Components of Generosity indices

<table>
<thead>
<tr>
<th></th>
<th>Low Income vs. Other Income Levels</th>
<th>African American vs. Non-African American</th>
<th>Black Protestant vs. All Others</th>
<th>Weekly Attendance vs. &lt;= Weekly Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs.</td>
<td>146/658</td>
<td>347/457</td>
<td>197/607</td>
<td>138/685</td>
</tr>
<tr>
<td>Volunteer hours</td>
<td>+ **</td>
<td>+ ***</td>
<td>+ ***</td>
<td>+ ***</td>
</tr>
<tr>
<td>Available hours</td>
<td>- ***</td>
<td>- ***</td>
<td>- ***</td>
<td>- ***</td>
</tr>
<tr>
<td>Nonlabor income</td>
<td>- ***</td>
<td>- ***</td>
<td>- ***</td>
<td>- ***</td>
</tr>
<tr>
<td>Hourly wage</td>
<td>- ***</td>
<td>- ***</td>
<td>- ***</td>
<td>- ***</td>
</tr>
</tbody>
</table>

Discussion 1: Poverty and Generosity

- **Is the time required for other activities higher for the poor?**
  - e.g., Transportation
  - How to solve?
- **Do we accurately measure VT generosity across people when nonlabor income (including income-based transfer payments) is a large fraction of total income?**

Discussion 1: Poverty and Generosity (continued)

- **Example 1:**
  - Gen volunteers 10 hours, has 100 hours of time available, a wage rate of $100/hr, and $1,000/week of nonlabor income
  - Sting has the same except his wage is $10/hr, so nonlabor income is a larger share of total income for any given number of hours worked.
  - Gen is labeled more generous (VT=9.1%) than Sting (VT=5%)

Discussion 1: Poverty and Generosity (continued)

- **Example 1 (continued):**
  - Suppose subsistence income for both is $1100/week
  - Sting has to work 10 hours to get there, Gen has to work 1 hour
  - So Sting has less time available and “ought” to be regarded as more generous.

Discussion 2: Is Dividing Generosity into Categories a Good Idea?

- Additional generosity indexes are possible for
  - Informal volunteering and helping
  - Tissue and organ donation
  - Spirit
  - Generosity on the (paid) job
  - Emotional availability
- Is the concept of relative sacrifice appropriate for each?
- Combine indexes into a single generosity index?

Discussion 3: What’s an Index Good for?

- Pointing out how complex and nuanced a relative sacrifice measure of generosity is.
- As a dependent variable – what explains variation in each index?
- In a panel setting – how does generosity change over the life course? Is generosity transmitted to descendants?
- Why are some people generous in volunteering but not money donations? Generous in both? Etc.
Discussion 4: Lessons for New Researchers

- Riskiness of agreeing to a special issue publication with a short deadline
- Recovery from dead ends
  - Initial measure suggested doesn’t work
  - Meeting obligations
  - Will there be more surprises?
- This is a good time for the coauthors to take risks, but if we were on a tenure clock …
- The difference between a new topic and n+1