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The cost of informal care in Europe: New estimates based on the well-being valuation method

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1. Background and Research Question
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4. Model & variables
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1. Background and Research Question

- Costs and benefits of informal care to carers are often neglected in long-term care policy.
- Focus of economic research: opportunity cost of informal care and contingent valuation.
- Most existing studies cover only certain types of costs, and ignore possible utility from providing informal care.
- Using SHARE data, and the subjective well-being valuation method, we attempt a comprehensive estimate of the net cost of informal care:

  *What are the net shadow costs for an elderly caregiver to provide informal care?*
2. Subjective Well-Being Valuation Method (1/3)

- monetary value/cost derived from the effect of the variable of interest on life satisfaction

2. Subjective Well-Being Valuation Method (2/3)

Two Crucial Assumptions:

1. Respondents’ stated life satisfaction accurately reflects overall experienced utility.
2. Life satisfaction is systematically increasing in income.

- Some support for both in the literature; Easterlin paradox a concern.
2. Subjective Well-Being Valuation Method (3/3)

\[ W_{ij} = \alpha + \beta_1 X_{ij} + \beta_2 y_{ij} + \beta_3 c_{ij} + \beta_4 D_j + \varepsilon_{ij} \]

- \( W_{ij} \): subjective well-being of individual \( i \) in country \( j \)
- \( X_{ij} \): vector of individual characteristics
- \( y_{ij} \): household income
- \( c_{ij} \): informal care provided
- \( D_j \): country dummies

The net cost of an hour of care is the marginal rate of substitution between informal care and income implied by the estimation, that is \( \beta_3 / \beta_2 \).
3. Data

- Data from the second wave of the Survey of Health, Ageing and Retirement in Europe (SHARE), 13 countries

- Study sample of 29,543 respondents. 80% are between 57 and 80 years old.

- Carers in our sample defined as providing help to someone outside the household daily or weekly
Estimate an ordered probit model, to avoid assuming cardinality

Variables:

• Life satisfaction (see below)
• Carehours provided (see below)
• Household income: in natural log form. Given unfortunate prevalence of missing values, use imputations of Christelis (2011)
• Several measures for health in dataset. Use grip strength measurements as a summary measure, (see Andersen-Ranberg, K., I. Petersen, et al. (2009) )
• Carer’s age, marital status and employment status
Model (2/4) - Dependent Variable

How satisfied are you with your life, on a scale from 0-10?

![Bar chart showing the distribution of life satisfaction scores from 0 to 10. The majority of responses are clustered around the 8 mark.]
Model (3/4) - Informal Care Variables

Capture non-linear effect in three groups of care hours:

- weekly average provided in last year, *additionally*
- medium care hours (between 10 and 30/week) and
- high care hours: over 30/week

- additional binary variable indicating generation the carer and care recipient belong to
- most common are children caring for their parents (over 30% of regular carers)
# Model (4/4) - Summary Statistics

<table>
<thead>
<tr>
<th></th>
<th>carers</th>
<th>non-carers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
</tr>
<tr>
<td><strong>Yearly net HH-income in Euros</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16,975</td>
<td>31,375</td>
</tr>
<tr>
<td><strong>Mean (sd)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>grip strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>health status proxy</td>
<td>34.9 (11.1)</td>
<td>1</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1=female)</td>
<td>0.64</td>
<td>0</td>
</tr>
<tr>
<td>N</td>
<td>5,288</td>
<td></td>
</tr>
</tbody>
</table>
5. Results (1/4) – whole sample

Dependent Variable: Life Satisfaction

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carehours</td>
<td>0.044**</td>
</tr>
<tr>
<td>Carehours (10-30)</td>
<td>-0.034**</td>
</tr>
<tr>
<td>Carehours (&gt;30)</td>
<td>-0.044**</td>
</tr>
<tr>
<td>Health</td>
<td>0.014***</td>
</tr>
<tr>
<td>Carehours*Health</td>
<td>-0.001**</td>
</tr>
<tr>
<td>Carehours (10-30) *Health</td>
<td>0.0009***</td>
</tr>
<tr>
<td>Carehours (&gt;30) *Health</td>
<td>0.001**</td>
</tr>
<tr>
<td>Log income</td>
<td>0.112***</td>
</tr>
</tbody>
</table>

Note:
Other sign. regressors include:
- female***
- unemployed***, disabled***
  (ref. category: employed)
- married***, divorced***,
  widowed*** (ref. category: single)

Coefficients are positive/negative and significant at 10% level*, 5% level**, 1% level***

n=29.471
5. (2/4) Results – carers only

Dependent Variable: Life Satisfaction

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carehours</td>
<td>0.003</td>
</tr>
<tr>
<td>Carehours (10-30)</td>
<td>-0.002</td>
</tr>
<tr>
<td>Carehours (&gt;30)</td>
<td>-0.003</td>
</tr>
<tr>
<td>Health</td>
<td>0.012***</td>
</tr>
<tr>
<td>Log income</td>
<td>0.136***</td>
</tr>
<tr>
<td>Care recipient younger</td>
<td>-0.053*</td>
</tr>
<tr>
<td>Care recipient from same generation</td>
<td>-0.069***</td>
</tr>
</tbody>
</table>

Note:
Other regressors include:
- female***
- unemployed***, disabled*** (ref. category: employed)
- married***, divorced***, widowed*** (ref. category: single)

Coefficients are positive/negative and significant at 10% level*, 5% level**, 1% level***

n=5,288
5. Results (3/4) – Shadow cost calculations

- Median low-intensity carer: values care at €2.60/hour (€137 for an extra hour each week over a year)

- Similar carer with three units lower grip strength is expected to derive an additional €1/hour

- For median carer providing 25 hours a week care is valued at about €1.50 / hour
5. Results (4/4) – Shadow cost calculations

Examining **carers only** ...

- implied shadow values are smaller, but still positive;
- care (for someone providing less than ten hours a week) valued at about €1.20/hour
- Relative to caring for someone older (e.g. a parent) carers in the same generation as care recipients have much lower life satisfaction - about €1.600/year
6. Discussion

• Strong indication of net benefits of providing informal care to many in this group of out-of-home carers
• In the model for the carer subsample, carehours show a tendency to significance; no change in the patterns observed for the full sample.
• Health status may interact with care-giving in complex ways. Certainly an issue for further study.

• Crucial limitation: no data on care recipient characteristics (especially health status)
• issue of missings in income
• issue of intra-household carers to complete the picture
Thanks for listening!

If you have further questions, please contact

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