Linking Administrative Data for Research

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Administrative data is great, because it

• Measures things we care about
  • Employment, earnings
  • Health, criminal behavior, etc.

• Is precise, and cheap
  • “How much did you earn during the last 12 months?”
  • It’s there

• Can be linked
  • Several domains
  • Program substitution

• Is administrative
  • Same information as those who run the program
Maternity Leave in Switzerland
Why Study Maternity Leave?

- Birth of child
  - mother and child need rest and care
  - employer not willing to provide this

- Maternity leave aims to
  - provide time to care for child
  - guarantee to return to job

- Swiss reform
  - ML of 14 paid weeks introduced in 2005

- Economic effects
  - Does ML affect earnings around birth?
  - (Note earnings = 0 if do not work)
Possible Effects on Earnings

- Mothers keep job until birth
- Mothers return more quickly

Before

After

birth
ML Linkage Project

- People
  - Lena Hassani Nezhad, PhD Royal Holloway
  - Esther Mirjam Girsberger Seelaus, Post Doc LIVES

- Data
  - Social security data (ZAS)
  - Families in 2010 (STATPOP)
  - Marriage, Divorce, etc. (BEVNAT)

- Federal Office of Statistics
  - Supported us in understanding the data
  - Set up a data protection agreement
  - Provided data in a linkeable form
Data

• STATPOP
  • Children born between 2003 and 2007, their siblings and parents who lived in Switzerland on December 31, 2010.
  • Social security number (AHV Number)

• ZAS
  • Social security number

• BEVNAT
  • After 2010: social security numbers
  • Before 2010: construct identifiers, match about 80%
Income Profile Relative to First Birth (Fathers)

Real Income from Employment

Months Relative to Birth

-60 -48 -36 -24 -12 -7 0 4 12 24 36 48 60

Income Profile Relative to First Birth (Fathers)

-60 -48 -36 -24 -12 -7 0 4 12 24 36 48 60

After Reform (real)  Before Reform (real)
Main challenges

• Tower of Babel
  • Different government agencies maintain data
  • Common data protection agreement: essential but challenging
  • Since 2014, Swiss FSO provides service, slow initially, but very faster now

• Information
  • Linking data requires that people know about other people’s data
  • Description and documentation of data

• Providing access is not free
  • Handle data
  • Data protection
  • Follow up

• “Better Research for Better Societies”
  • Network of Swiss Scientists, funding agencies, research programs
  • Support FSO in setting up data access platform
Thank you
With Extended Benefits = Shaded
Without Extended Benefits = White
Discontinuity at threshold = 109.645; with std. err. = 4.927.
Linkage - Identifiers

• Bevnat – Live Births: Match children (in Statpop) with their Live birth information (in Bevnat)
  
  Identifier: dateofbirthmom + dateofbirthchild (in statpop and bevnat)

• Bevnat – marriage: Match married fathers and mothers (in Statpop) with their corresponding marriage event (in Bevnat)
  
  Identifier: dateofbirthMother + dateofbirthfather + dateofmarriage (in statpop)
  
  dateofbirthWife + dateofbirthHusband + dateofmarriage (in bevnat-marriage)

• Bevnat – divorce: Match divorced fathers/mothers (in Statpop) with their corresponding divorce events (in Bevnat)
  
  Identifier: dateofbirthFather + dateofdivorce (in statpop)
  
  dateofbirthhusband + dateofdivorce (in bevnat-divorce)
## Overview, linkage (Marriage)

### Marital Status in Statpop in 2010

<table>
<thead>
<tr>
<th>Mother/Father</th>
<th>Marital Status</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fathers</td>
<td>Married</td>
<td>231,361</td>
<td>88.4%</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>342</td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>11,331</td>
<td>4.3%</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>18,755</td>
<td>7.2%</td>
</tr>
<tr>
<td></td>
<td>unmarried</td>
<td>6</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>in a registered partnership</td>
<td>12</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>no indication</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>261,808</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

| Mothers       | Married              | 232,364| 86.5% |
|               | Widowed              | 1,042  | 0.4%  |
|               | Divorced             | 12,945 | 4.8%  |
|               | Single               | 22,317 | 8.3%  |
|               | unmarried            | 19     | 0.0%  |
|               | in a registered partnership | 27 | 0.0% |
|               | no indication        | 3      | 0.0%  |
|               | Total                | 268,717| 100.0%|

### Linking Statpop with Bevnat-marriage

<table>
<thead>
<tr>
<th></th>
<th>No. of matched couples in Statpop whose marriage date is between 1987-2010</th>
<th>No. of uniques matches with Bevnat marriage using dateofbirthmom + dateofbirthfather + dateofmarriage</th>
<th>Share of unique matches in total matched couples</th>
<th>Share of unique matches in total married women in statpop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>225,024</td>
<td>179,708</td>
<td>80%</td>
<td>77%</td>
</tr>
</tbody>
</table>
# Overview Linkage (Divorce)

<table>
<thead>
<tr>
<th>Father/Mother</th>
<th>No. of divorcees in 2010</th>
<th>No. of linked marriage events who had a divorce in their history</th>
<th>Total</th>
<th>No. of unique matches with Bevnat - divorce using (dateofbirth + dateofdivorce)</th>
<th>Proportion of unique matches to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fathers</td>
<td>11,331</td>
<td>18,502</td>
<td>29,833</td>
<td>24,051</td>
<td>81%</td>
</tr>
<tr>
<td>Mothers</td>
<td>12,945</td>
<td>14,660</td>
<td>27,605</td>
<td>21,277</td>
<td>77%</td>
</tr>
</tbody>
</table>