Forests and Health in Mexico: Preliminary and Pre-Preliminary Work - June 2019

Alejandro López-Feldman
*Cen*tró*de Investigación y Docencia Económicas*

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Forests and health in Mexico: Preliminary and pre-preliminary work

Alejandro López-Feldman

Forest Collaborative
EfD
Subjective wellbeing:
The evaluation that an individual makes of the quality of his/her life. It is measured by asking the individual to evaluate:
- the quality of his/her daily experiences (emotional wellbeing), or
- to perform a global assessment of satisfaction with his/her life in general (life satisfaction).

Increasing research on subjective wellbeing as a complement to objective measures. The claim is not that other approaches are incorrect but that people's own evaluations of their lives are important and should be considered. A person's wellbeing is essentially subjective, therefore, the individual is the best authority to evaluate it (Rojas, 2007).
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SWB and the environment:
- Negatively correlated with environmental degradation (SOx emissions) (Di Tella and MacCulloch, 2008).
- Renewable natural capital (biocapacity) has a positive impact (Zhang, Shi and Cheng, 2017).
- Access to natural environments can decrease negative emotions (anger and sadness) (Bower et al, 2010).
Is there a relationship between natural capital and SWB in Mexico?

**BIARE, 2014.** Nationally representative survey, designed and implemented by Mexico’s National Institute of Statistics (INEGI).

Almost 40,000 observations.
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Data for NPAs and forest cover from CONANP and National Forestry Inventory.
NPAs and municipalities included in BIARE

Municipalities included in BIARE (2014)

Legend
- Yellow: NPA
- Blue: Municipalities in BIARE

0 80 160 320 480 640 Kilometers

N
### Preliminary results

<table>
<thead>
<tr>
<th></th>
<th>SWB</th>
<th>Happy</th>
<th>Tired</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPA</td>
<td>0.047***</td>
<td>0.116***</td>
<td>-0.006</td>
</tr>
<tr>
<td></td>
<td>[0.025]</td>
<td>[0.031]</td>
<td>[0.045]</td>
</tr>
<tr>
<td>Forest cover</td>
<td>-0.001</td>
<td>-0.0001</td>
<td>-0.002**</td>
</tr>
<tr>
<td></td>
<td>[0.001]</td>
<td>[0.001]</td>
<td>[0.001]</td>
</tr>
<tr>
<td>Parks</td>
<td>0.004***</td>
<td>0.003**</td>
<td>-0.010***</td>
</tr>
<tr>
<td></td>
<td>[0.001]</td>
<td>[0.001]</td>
<td>[0.002]</td>
</tr>
<tr>
<td>Observations</td>
<td>38486</td>
<td>38486</td>
<td>38486</td>
</tr>
</tbody>
</table>

Controls: Income, age, education, gender, marital status, children, social capital and negative shocks

Robust sd in brackets. ** $p < 0.05$, *** $p < 0.01$
Might be more interesting to look at environmental quality and SWB.
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**Ecosystem integrity:** measured by how different an ecosystem is from some original and desired condition.

EI index, is the result of a complex data analysis that takes into account: fauna and invasive species composition (camera traps and bioacoustic analysis), vegetation (National Forestry Inventory) and sample site condition (Garcia-Alaniz et al., 2017).
Very rich data set from Mexico's Social Security System (IMSS):
Individuals 0-25 years old.
Weight, height, clinical diagnostic (ICD-10).
Information from late 2011 to 2017.
1404 clinics distributed all over the country (total is 1790).
Panel by clinic and by individual.
More than 130 million observations (clinic visits) from approximately 18 million patients.

Caveats:
Rural population might be underrepresented by clinic in the sample.
Data is not publicly available.
Forest cover change and infectious diseases in Mexico

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Location of IMSS clinics in the sample

- IMSS clinics
- Change SV-SIII
  - -53.9 to -2.4
  - -2.4 to -0.4
  - -0.4 to 0.0
  - 0.0 to 0.0
  - 0.0 to 1.1
  - 1.1 to 48.2
To do

- **SWB**: Improve econometric analysis, work with ecosystem integrity data...
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- **SWB:** Improve econometric analysis, work with ecosystem integrity data...
- **IMSS data:** Pretty much everything, ...
- There are other potential data sources for health and forests in Mexico but first want to look at IMSS data.
- Survey to look at NTFPs, nutrition and health.
Thanks!