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

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

Alejandro López-Feldman

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# Subjective wellbeing

# Subjective wellbeing

- **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**).

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- 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).

# SWB and its determinants

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# SWB and its determinants

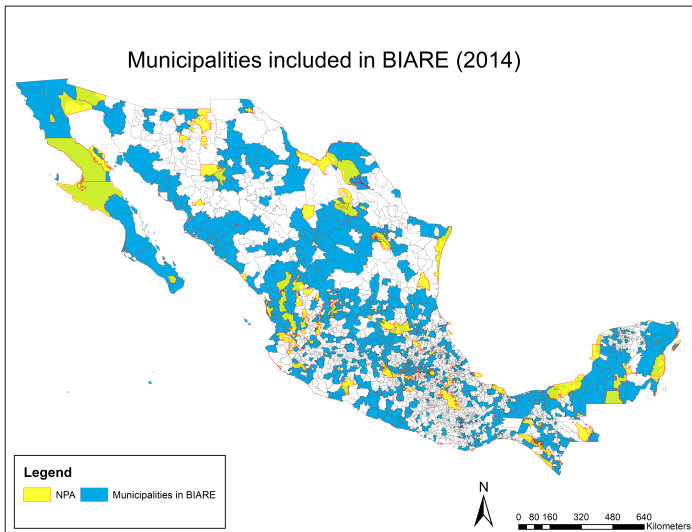
- About 30 to 40% of the variance in individual differences is attributable to genetic effect (Diener, Oishi and Tay, 2018).
- Income and SWB are correlated but not strongly.
- Relative income seems to be more important than absolute income (Ferrer-i-Carbonell, 2002).
- SWB and the environment:
  - Negatively 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).



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- Almost 40,000 observations.
- Data for NPAs and forest cover from CONANP and National Forestry Inventory.

# NPAs and municipalities included in BIARE



# Preliminary results

	SWB	Happy	Tired
NPA	0.047*** [0.025]	0.116*** [0.031]	-0.006 [0.045]
Forest cover	-0.001 [0.001]	-0.0001 [0.001]	-0.002** [0.001]
Parks	0.004*** [0.001]	0.003** [0.001]	-0.010*** [0.002]
Observations	38486	38486	38486

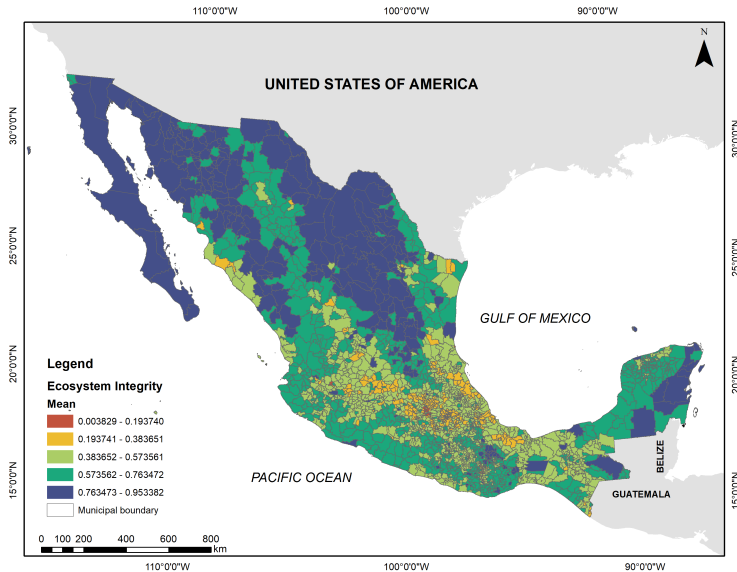
Controls: Income, age, education, gender, marital status, children, social capital and negative shocks

Robust sd in brackets. \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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- Might be more interesting to look at environmental quality and SWB.
- **Ecosystem integrity:** measured by how different an ecosystem is from some original and desired condition.
- El 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).

# Ecosystem Integrity 2014



# Forest cover change and infectious diseases in Mexico



# Forest cover change and infectious diseases in Mexico

- 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.

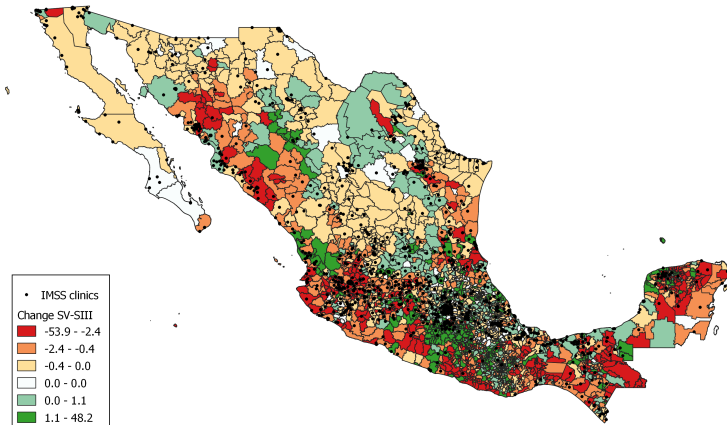
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  - 1404 clinics distributed all over the country (total is 1790).
  - Panel by clinic and by individual.
  - More than 130 million observations (clinic visits) from approximately 18 million patients.
  - Caveats:
    - Rural population might be underrepresented by clinic in the sample.
    - Data is not publicly available.

# Location of IMSS clinics in the sample



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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!