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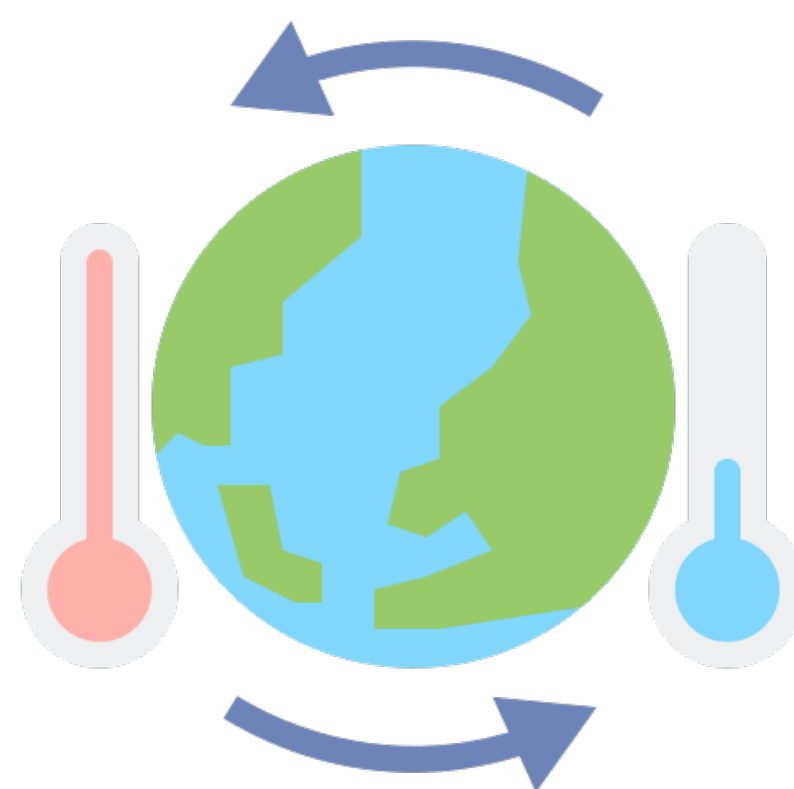
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Introduction

- Reducing the negative impacts of climate change requires rapidly reducing global greenhouse gas emissions. However, even among those in the public who declare to be concerned about climate change, only a fraction engages in meaningful climate-friendly actions (Landry et al. 2018).
- The gap between pro-environmental attitudes and pro-environmental behaviors is well documented (Klöckner, 2013).
- At the same time, it is well known that cognitive dissonance can negatively affect how people feel and view themselves (Harmon-Jones et al., 2015).



Icon made by Flat Icon from Flaticon.com.

- Our objective in this paper is to estimate the toll of the gap between concern and behavior regarding climate change on subjective well-being.**

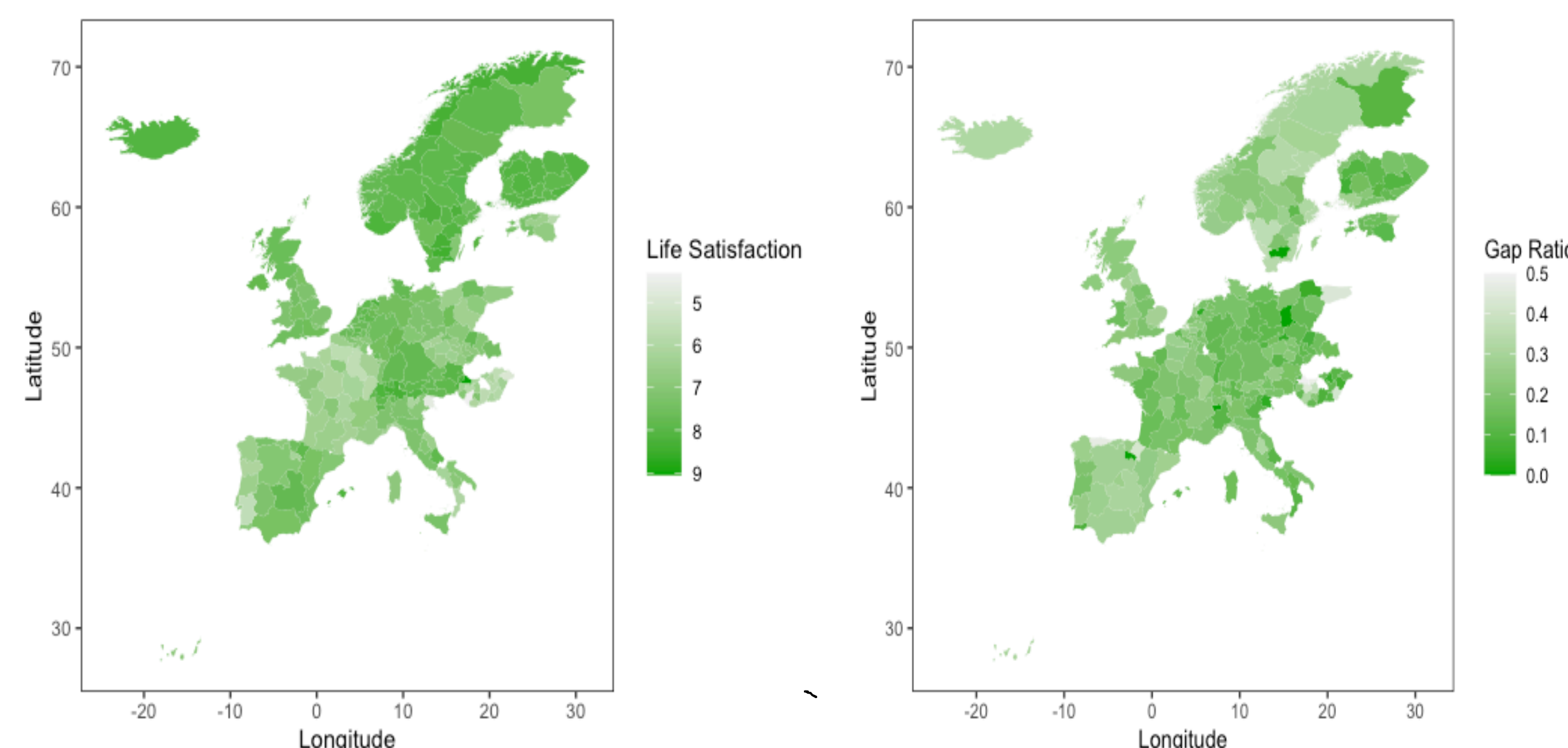


Fig 1. Spatial Distribution of Life Satisfaction (Left) and Environmental Attitude-Behavior Gap Ratio (Right) in Europe

- In the figure above, we observe that,
 - People living in the four northern European countries (Norway, Sweden, Iceland, Finland) and Switzerland have high average life satisfaction.
 - People who act inconsistent with their environmental attitudes are not minority in many countries (e.g., almost 40% people in Iceland have environmental cognitive dissonance).
- We hypothesize that the influence of environmental cognitive dissonance on subjective well-being is large.

Objectives

- Identify whether cognitive dissonance exists in people's pro-environmental behaviors
- Examine the harm of environmental cognitive dissonance, if it exists, on people's subjective well-being.

Data & Methodology

Data Source

- European Social Survey Round 8 (2016): 32,429 observations from 23 countries

Regression Model

- We use OLS model with country and region fixed effect.

$$Y_{ijk} = \alpha_0 + X_{ijk}\beta + \text{region}_k + \text{country}_j + \epsilon_{ijk}$$

$$Y_{ijk}$$
: Level of subjective well-being by individual i
 X_{ijk} : Independent variables as we described below
 ϵ_{ijk} : Error term

Where $k=1,2,...,274$ represents each region, $j=1,2,...,23$ represents each country.

Dependent Variable

- Life satisfaction:**
 "All things considered, how satisfied are you with your life as a whole nowadays?" 0 ("extremely dissatisfied") to 10 ("extremely satisfied")

Independent Variables

- Environmental (Climate Change) Attitude Index:** factor score by responses to
 "Do you think the world's climate is changing?"
 "Do you think that climate change is caused by natural process?"
 "How good or bad do you think the impact of climate change will be on people across the world?"
- Pro-environmental Behavior Index:** factor score by responses to
 "In your daily life, how often do you do things to reduce your energy use?"
 "How likely is it that you would buy one of the most energy efficient large electrical appliance for your home?"
- Environmental Attitude-Behavior Gap:**
 Gap = 1 if Attitude Index – Behavior Index > 1
 Gap = 0 if Attitude Index – Behavior Index <= 1
- We also control for **Age, Gender, Income, Health, Living in Rural Area, Personal Responsibility, Social Activity, Unemployment Status**

Table 1: Descriptive statistics

Variables	Mean	Standard Deviation	Minimum	Maximum
Life Satisfaction	7.22	2.02	0	10
Environmental Attitude-Behavior Gap (0/1)	0.21	0.41	0	1
Environmental Attitude Index	0	1	-4.18	2.04
Pro-environmental Behavior Index	0	1	-3.87	1.54
Health	2.19	0.90	1	5
Rural	0.36	0.48	0	1
Age	49.47	17.90	15	98
Education	4.11	1.84	1	7
Female	0.52	0.50	0	1
Income Decile	5.32	2.71	1	10
Personal Responsibility	5.80	2.64	0	10
Social Activity	4.87	1.52	1	7

Results & Discussion

Table 2: Regression Results

Variables	(1) Model 1	(2) Model 2	(3) Model 3
Environmental Attitude-Behavior Gap	-0.151*** (0.025)	-0.174*** (0.025)	-0.161*** (0.025)
Rural	0.136*** (0.021)	0.092*** (0.021)	0.045** (0.022)
Education Level	-0.001 (0.006)	-0.003 (0.006)	-0.002 (0.006)
Income decile	0.121*** (0.004)	0.125*** (0.004)	0.124*** (0.004)
Female	0.025 (0.021)	0.074*** (0.020)	0.068*** (0.020)
Age	0.012*** (0.001)	0.010*** (0.001)	0.010*** (0.001)
Health Status	0.702*** (0.013)	0.611*** (0.013)	0.602*** (0.013)
Personal Responsibility	0.069*** (0.004)	0.042*** (0.004)	0.042*** (0.004)
Social Activity	0.196*** (0.007)	0.161*** (0.007)	0.160*** (0.007)
Constant	2.623*** (0.072)	3.685*** (0.089)	3.973*** (0.242)
Observations	32,429	32,429	32,429
R-squared	0.187	0.238	0.256
Country Fixed Effect		YES	YES
Region Fixed Effect			YES

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- People who have environmental cognitive dissonance feel less satisfied with life. compared to people who have consistent environmental attitudes and behaviors.**
- Other results consistent with the literature:
 - Unemployment status dramatically decreases individual's subjective well-being.
 - People living in the rural area are happier.
 - Being more involved in social activities and having higher personal responsibility could help people feel better with their lives.
 - Having a good health status makes people happier.

Conclusions

- We provide evidence of a negative relationship between behaviors inconsistent with people's climate-change concern and their subjective well-beings.
- Our findings suggest that stringent national environmental policies might not necessarily reduce people's subjective well-beings.