savin_2021_free_associations_of_citizens_and_scientists_with_economic_and_green_growth_a_computational_linguistics_analysis

Year

2021

Author(s)

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Title

Free associations of citizens and scientists with economic and green growth: A computational-linguistics analysis

Venue

Ecological Economics

Topic labeling

Manual

Focus

Secondary

Type of contribution

Established approach

Underlying technique

Manual labeling assisted by associated documents

Topic labeling parameters

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Label generation

Labels for each topic are suggested qualitatively on the basis of the content of the terms and associated survey responses.

Economic growth:

Table 1
Most discriminating words by topic among scientists for the theme economic growth.

Topic	Most discriminating terms (frequency and exclusivity)	Topic label	Topic prevalence	Topic sentiment
1	Money, welfar, unsustain, environment, citi, inequ, poverti, destruct, problem, graph	Social and environmental problems	23.4%	−0.182
2	Develop, incom, industri, sustain, increas, factori, live, pollut, emiss, standard	Industry and progress	24.9%	0.024
3	Prosper, growth, wealth, product, limit, good, materi, exponenti, paradigm, qualiti	Material wealth	24.5%	0.312
4	Gdp, capit, consumpt, expans, human, job, econom, resourc, employ, measur	GDP	27.2%	0.003

Green growth:

Table 2
Most discriminating words by topic among scientists for the theme green growth.

Topic	Most discriminating terms (frequency and exclusivity)	Topic label	Topic prevalence	Topic sentiment
1	Green, oxymoron, forest, greenwash, wind, industri, carbon, possibl, defin, prosper	Green ambiguity	23.6%	0.133
2	Tree, solar, pollut, technolog, good, panel, environment, limit, growth, extern	Green technologies	27.2%	0.044
3	Sustain, ecolog, windmil, imposs, natur, economi, effici, paradox, gdp, illus	(Non-) Sustainability	26.0%	0.187
4	Environ, energi, renew, climat, chang, develop, better, live, econom, power	Environment and energy	23.2%	0.167

Motivation

Topic modeling

STM

Topic modeling parameters

Nr of topics: 3 to 13

Nr. of topics

8 (4 per model: "economic growth" 4, "green growth" 4)

Label

Label selection

Label quality evaluation

Assessors

Domain

Paper: Economics
Dataset: Economics

Problem statement

Here we analyze open-ended textual responses of citizens and scientists concerning their associations with the terms "economic growth" and "green growth".
We derive from the responses a number of topics and examine how associations differ across distinct opinion segments of people, namely supporters of Green growth, Agrowth and Degrowth.

Corpus

Dataset 1
Origin: Various scientists
Nr. of documents: 671
Details:
- survey among scientists from a variety of academic backgrounds
- respondents were categorized into one of seven groups: economists working specifically on economic growth (*GrowEc*), economists working on growth*environment (GrowEnv), other economists (OthEc), environmental economists (EnvEc), ecological economists (EcoEc), environmental social scientists (EnvSoc), and environmental scientists (EnvSci/)*
- Data collection was achieved by inviting researchers to express their views on economic growth and the environment in an online English-language survey between March and May 2015.

Dataset 2
Origin: Netquest
Nr. of documents: 1008
Details:

- public opinion survey undertaken in July 2014 in Spain

Document

Dataset 1

Textual response to the questions:

1. "Before we ask you more specific questions, we would like to know what is the first word, image or thought that comes spontaneously to your mind when you think of 'economic growth'?"
2. "And when you think of 'green growth'?".

Dataset 2

Textual response to the question:

1. "Economic growth receives much attention from the media and politics. Could you briefly mention which topics go through your mind when you hear about 'economic growth'?"

Pre-processing

- Deleting stop words and numbers, words of length less than 3 letters
- setting everything to lower case
- stemming words

- We use membership of respondents of opinion clusters in the growth-vs-environment debate as a categorical variable with 1 = Green growth, 2 = Agrowth and 3 = Degrowth. We identify these three clusters as having shares of 31%, 44% and 25% in the sample of surveyed scientists, and 32%, 48% and 20% in the sample of Spanish citizens

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@article{savin_2021_free_associations_of_citizens_and_scientists_with_economic_
and_green_growth_a_computational_linguistics_analysis,
   abstract = {The debate about the relationship between economic growth and
environmental sustainability triggers a range of associations. Here we analyze
open-ended textual responses of citizens and scientists concerning their
associations with the terms ``economic growth'' and ``green growth''. We derive
from the responses a number of topics and examine how associations differ
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across distinct opinion segments of people, namely supporters of Green growth, Agrowth and Degrowth. The results indicate that the general public is more critical of the notion of economic growth than academic researchers. Citizens stress problems of corruption, social inequality, unemployment and poverty, with less variation among the three opinion segments compared to scientists. The latter more strongly emphasize the environmental consequences of economic growth. Concerning associations of scientists with the term ``green growth'', we find topics questioning its feasibility to be more likely expressed by Degrowth supporters, while topics stressing the possibility of sustainable economic growth by Green growth supporters. We find that topic polarization is stronger for scientists than citizens. Our results provide further validation for opinion clusters identified in previous studies and uncover additional insights about related views on growth and sustainability.},

#Thesis/Papers/BS