Fukushima Effect on Environmental Attitudes

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Contribution

Fukushima's nuclear accident on March 11^{th}, 2011 was the second mayor nuclear accident after the Chernobyl disaster in 1986.

I hypothesize that the accident increased risk perception towards nuclear energy, leading to a long-term change in attitudes towards nuclear energy.

My research addresses three questions:

1. Did the accident increase people's risk perception?
2. What are the main social factors influencing individuals' risk perceptions?
3. Do the same social factors influence risk perception as environmental concern?

Data and Methods

Data: I use data from the International Social Survey Programme (ISSP) 2010, conduced in 32 member countries between 2010 and 2011. The ISSP conducts mostly face-to-face interviews, providing the exact date of each interview.
For the estimation two separate datasets were built: 1) individuals interviewed before the accident and 2) individuals interviewed after the accident.

Method: A fixed effects multi-level model is used to control for unobserved country effects.

Conclusion

Main results:

- There is a **Fukushima-Effect**: the accident changed individuals' risk perception but did not change people's overall environmental concern.
- **Status matters**: Across all countries, highly educated individuals are less likely to express nuclear risk perception but more likely to have higher environmental concern.

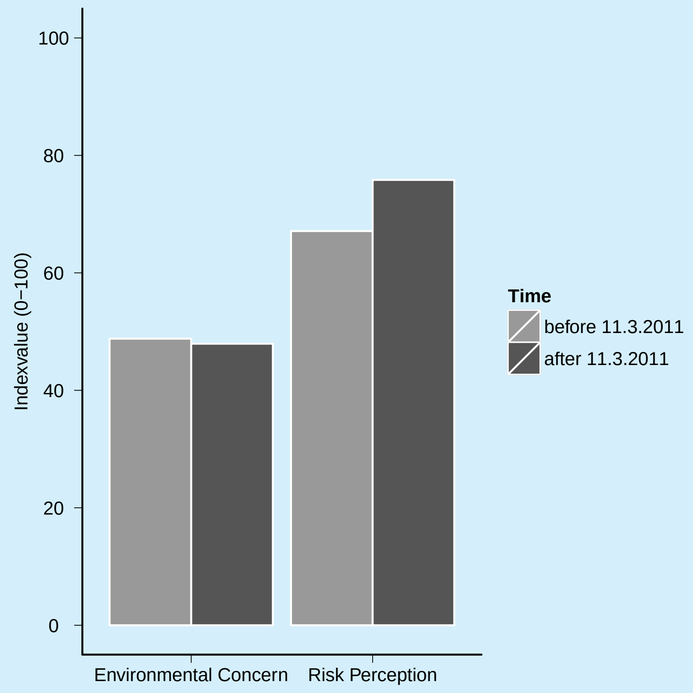
Conclusions:

- Higher economic and social status makes individuals more likely to trust in their own assessment of risk.
- Trust in institutions matters, because in case of a nuclear accident the situation is not personally controllable. Therefore trust in institutions is crucial to trust in high risk technologies.

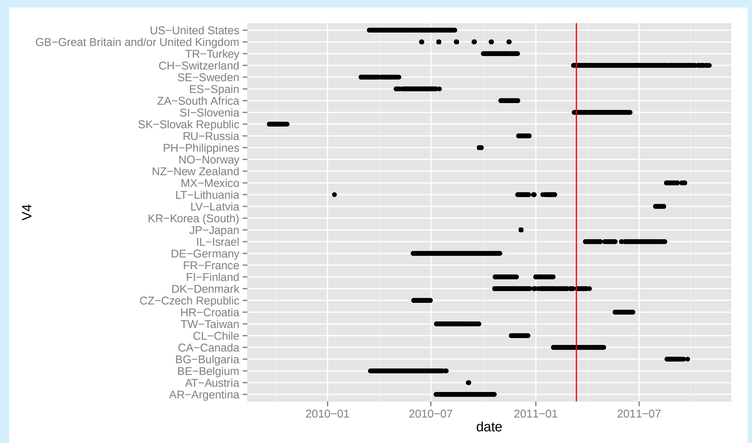
References

• Dominikus Vogl. 2014. The Fukushima-Effect on individuals' risk perception and individuals' environmental concern (forthcoming).
• Pampel, Fred C. 2011. Support for Nuclear Energy in the Context of Climate Change: Evidence From the European Union. Organization Environment 24: 249–268.

Fukushima Effect on Individuals' Attitude



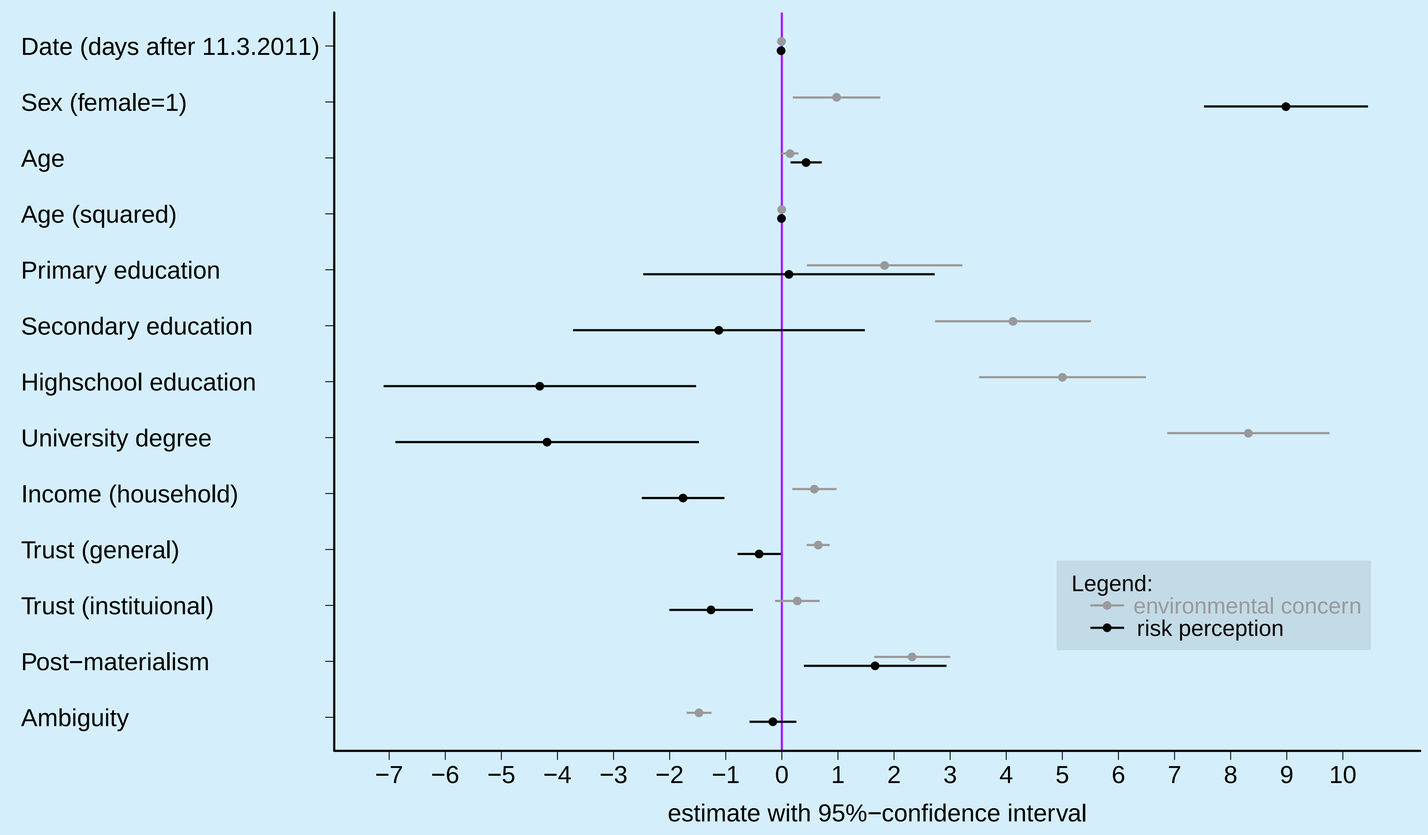
Date of interview (red line date of accident)



- **Results:**
  - Risk perception increased significantly (67 to 76 index points).
  - Environmental concern did not change (49 to 48 index points).

Note: Environmental concern is an index of nine items on a five point Likert scale from *strongly agree / very willing* to *strongly disagree / very unwilling*. Risk perception is a measured asking on a five point Likert scale: "Do you think that nuclear power stations are:" from *extremely dangerous* to *not dangerous at all for the environment?*. All indices are standardized between 0 and 100 index points.

Comparison of Nuclear Risk Perception and Environmental Concern



Results:

- Individuals' risk perception does not decrease after the accident.
- Contradictory effects for social status (education and income):
  - Higher social status results in less risk perception and higher environmental concern.
  - The more people trust, the lower their risk perception and the higher their environmental concern.
- Women have higher environmental concern and risk perception. Age has an inverse u-shaped effect – the positive effect decreases for older people.
- Post-materialistic attitudes have a strong positive influence on risk perception and environmental concern.

Note: Fixed-effects models for all interviews conducted after the Fukushima accident on 11.3.2011. Point estimators with 95 %-confidence intervals for 1) *risk perception* and 2) *environmental concern*.

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