

Common arguments on CCS based on focus groups and public survey

Workshop on Confidence Building in the long-term effectiveness of CO2
Capture and Geologic Storage in Tokyo, Japan

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Building confidence for...

- Implementing CCS as a part of climate policy portfolio.
- Long-term effectiveness of containment of CO₂ in storage formation.
- Implementing CCS in specific storage sites.

Common factors influence perception of CCS

- Factor 1: risks and leakage
(respondents' concern about environmental impacts and risks caused by injection of CO₂ and possibility of leakage)
- Factor 2: effectiveness of CCS
(respondents' understanding of effectiveness of CCS as a mitigation option for climate change)
- Factor 3: responsibility
(respondent awareness of societal responsibility for mitigation of CO₂)
- Factor 4: fossil fuel use
(respondent concern that CCS would allow continuation of current usage levels of fossil fuels)

Common arguments influenced by factor 1

- Risk and leakage

- Concern about environmental impacts and risks and possibility of leakage.

- CCS would create risks of impacts on human health and ecosystem.
- CCS would leave risks to the future generation.
- CCS would give impacts on underground organism.

Common arguments influenced by factor 2

- Effectiveness

- Understanding of effectiveness of CCS as one of mitigation options of the climate change.

- CCS is a realistic option to achieve a large emission reduction with moderate cost.
- CCS would help sustainable development of developing countries.
- Possible leakage from reservoir weaken the effectiveness of CCS.

Common arguments influenced by factor 3

- Responsibility

- Awareness of responsibility for mitigation of CO₂ emission

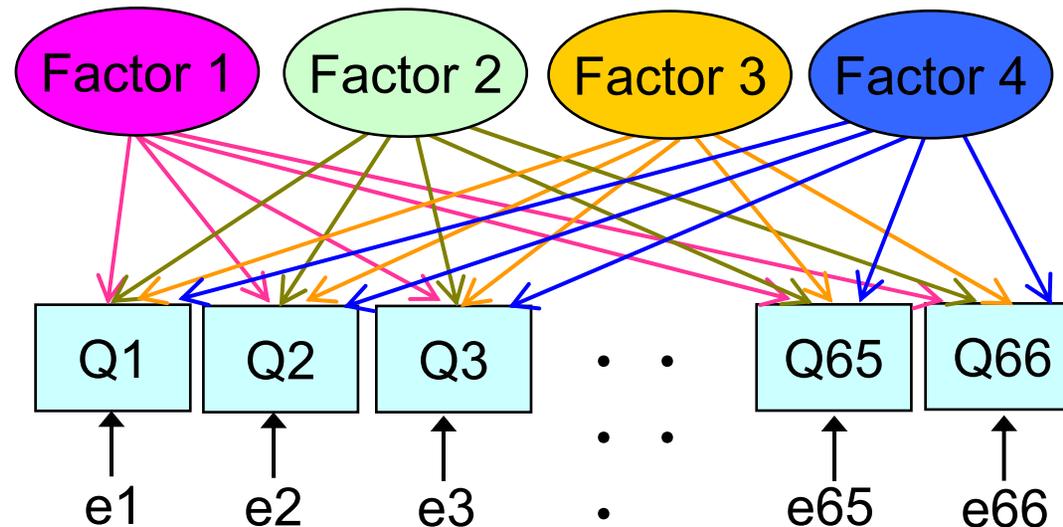
- Not implementing effective measures of CO₂ emission reduction means that we leave the burden to the future.
- We need to pay costs of climate mitigation measures because we are responsible for consequence of climate change.

Common arguments influenced by factor 4

- Use of fossil fuel
 - Concern that CCS would allow us to keep using fossil fuel
- CCS would allow us keep using fossil fuel and lead to earlier depletion of fossil fuel resources.
- CCS discourage development and deployment of renewable energy.

Theory of exploratory factor analysis

- To explore the underlying structure of a collection of observed variables.



$$x_i = \mu + A \cdot f_i + e_i \quad (i = 1, 2, \dots, n)$$

i : Respondent number

x_i : Answers of questions

μ : Mean vector

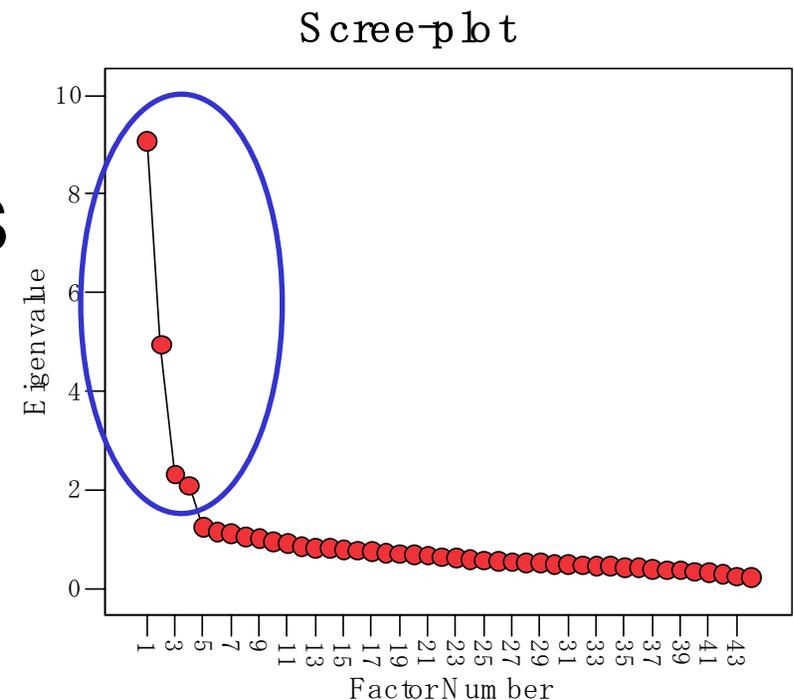
A : Factor loading matrix

f_i : Factor score vector

e_i : Unique factor vector

Influential factors on understanding CCS

- Factor 1: Risks and leakage
- Factor 2: Effectiveness of CCS
- Factor 3: Responsibility
- Factor 4: Use of fossil fuel



Estimation method: Varimax rotation, maximum likelihood solution