



Public involvement in disaster related EAs

Ryo Tajima, Tomohiro Tasaki, Masahiro Osako
National Institute for Environmental Studies, Japan

Disaster and environmental risks



Goo, Picture gallery (Accessed 2011.4.10)



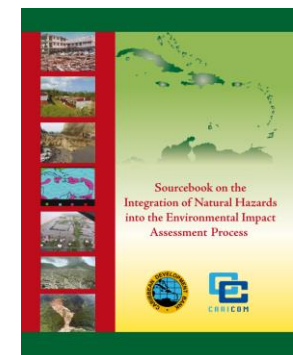
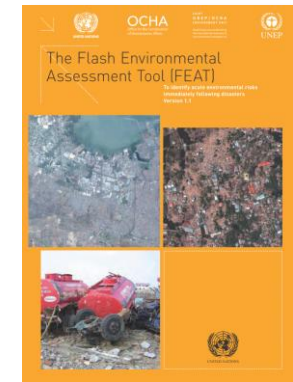
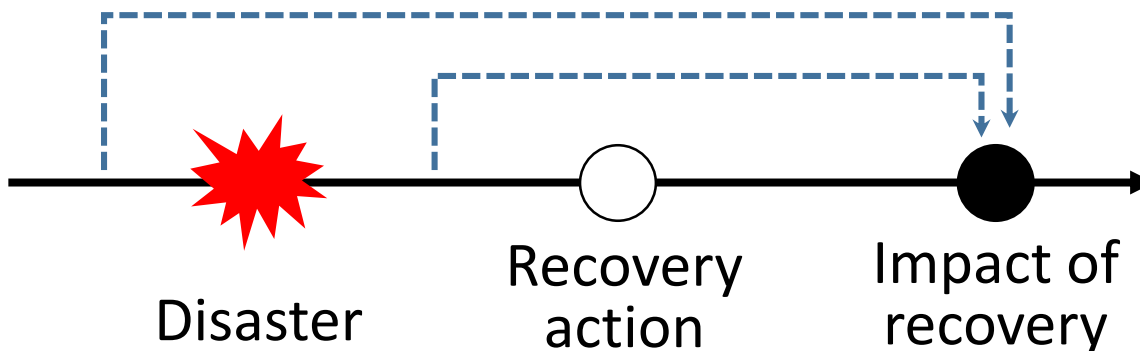
management and material cycles

Disaster and environmental risks



Disaster related EAs

- Various disaster related EAs in theory and practice
- This study focuses on “Assessment of **environmental impacts** caused by **recovery / rehabilitation activities**, undertaken **pre- or post- disaster**”



Public Involvement, or not?

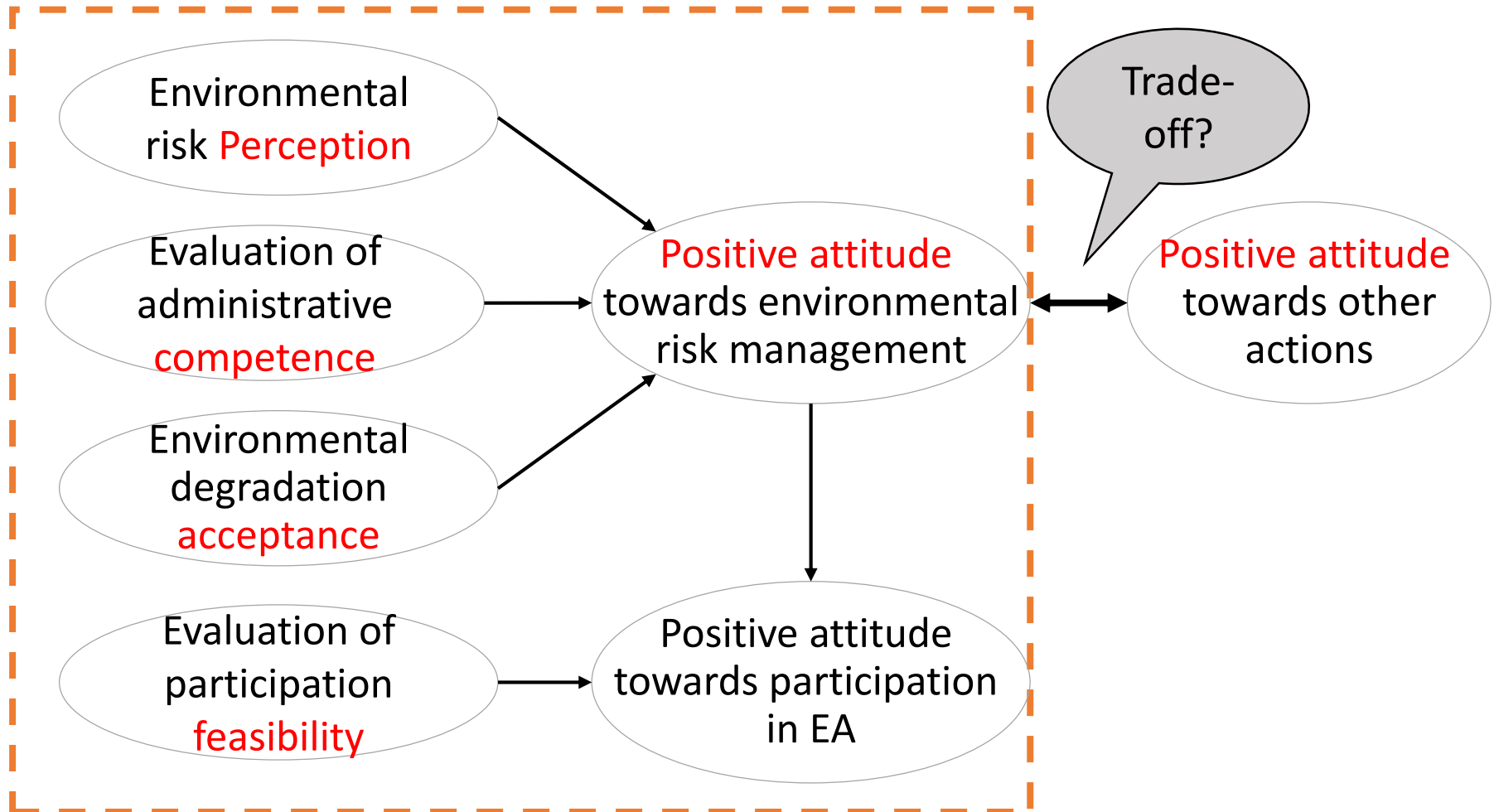
- Reason for public involvement have been extensively discussed*, but less on its public expectation
 - Do people want to be involved?
 - Why?
 - When ?
 - How ?

Aim of this study

- ✓ To clarify the willingness of the public to be involved in disaster related EAs
- ✓ To clarify the reason of willingness towards being involved

* e.g. O'Faircheallaigh, 2010; Glucker et al., 2013; Rega and Baldizzone, 2015; Rowe and Frewer, 2000; Kasperson, 1986

Hypothesis: how people decide to participate



Survey

- Online questionnaire survey
- Sample
 - 1500 Japanese residents who suffered from the Tohoku Earthquake in 2011
 - Survey results are based on disaster experience
- Main survey items
 - Perception of post disaster* environmental risks (4 point Likert scale)
 - Priorities of 23 risk management activities of public administrations (7 point Likert scale)
 - Intention of participate in EA (4 point Likert scale)

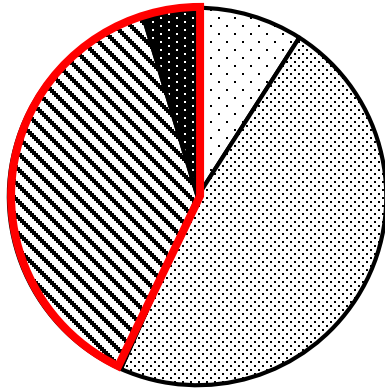


(* “post disaster” in this survey meant “ca. 3 months after a disaster equivalent to the Tohoku Earthquake)

Results:

willingness to be involved in disaster related EA

Post disaster



43%

48%

49%

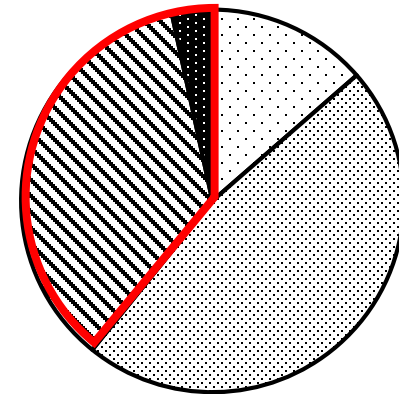
- Strongly unwilling
- ◻ Somewhat unwilling
- ▨ somewhat willing
- Strongly willing

Temp. Housing

Reconstruction Plan

Temp. Storage

Pre disaster



39%

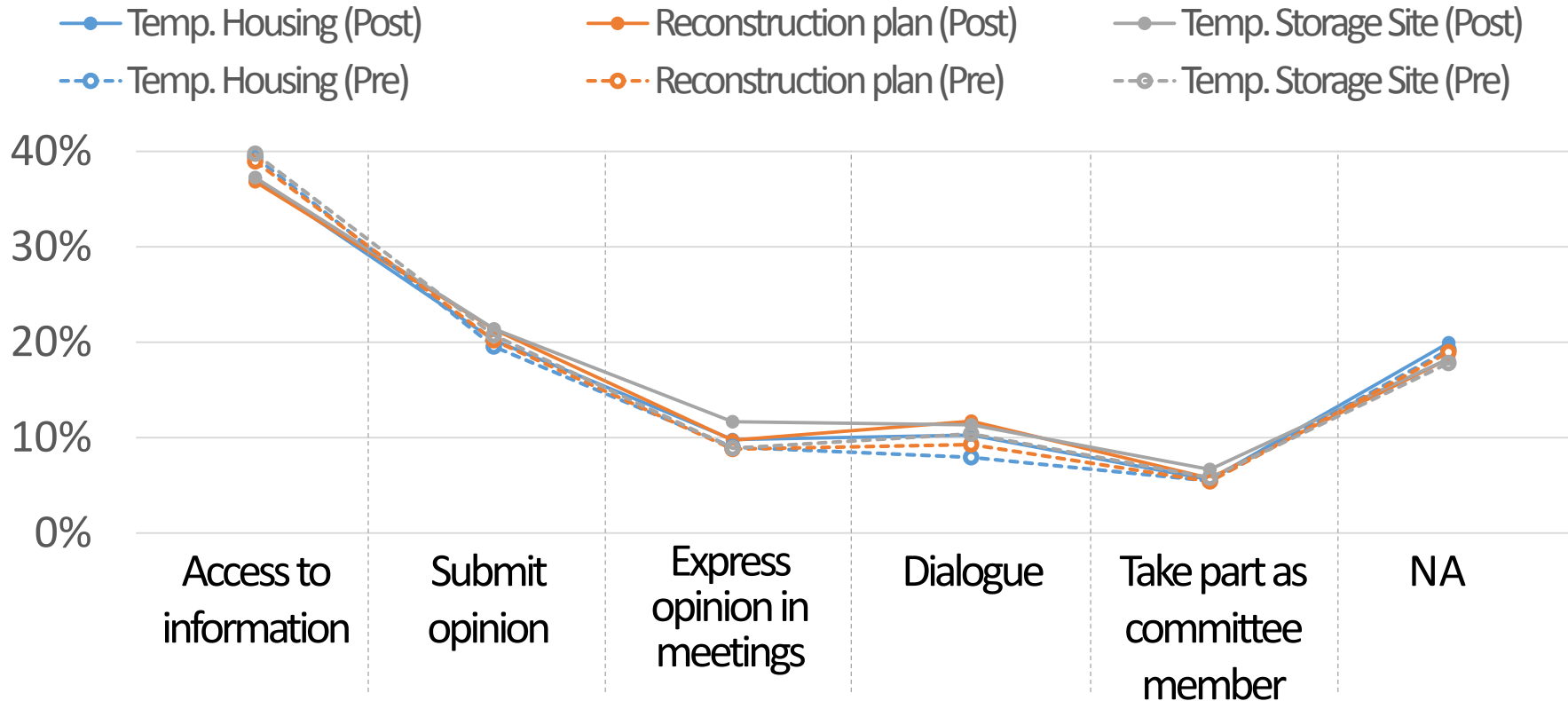
41%

43%

- ✓ Willingness to participate is higher for disaster EAs undertaken post- disaster
- ✓ Yet, willingness of pre disaster is not so low

Results:

Preference of participation method (MA)



- ✓ Demand for relatively intense participation method is higher for post- disaster EA

Results: Perception of post disaster environmental risks

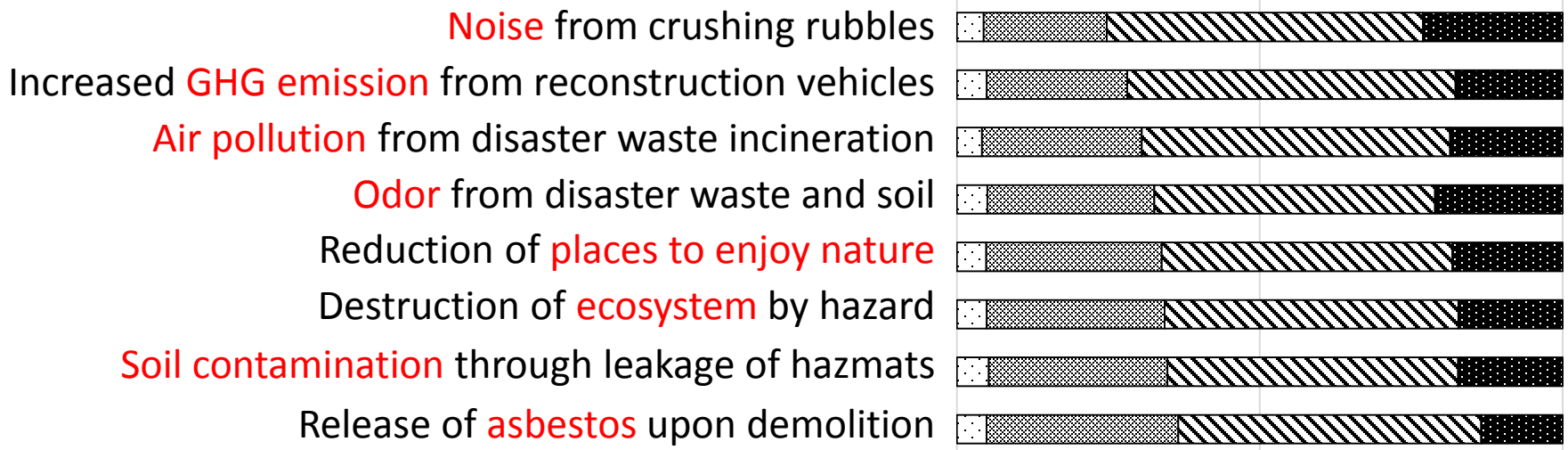
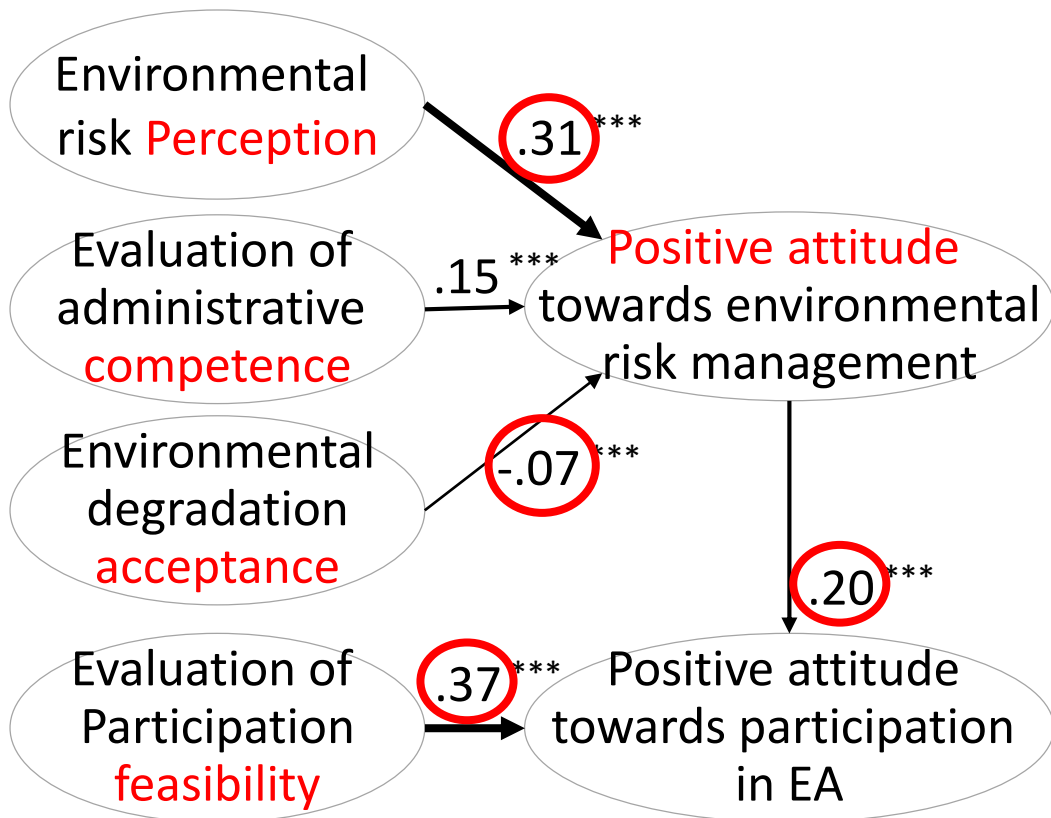


Fig. Response to question “To what extent do you think the following environmental risks exist post disaster?”

- ✓ Respondents perceive various types of environmental risks

Results: why people (don't) participate

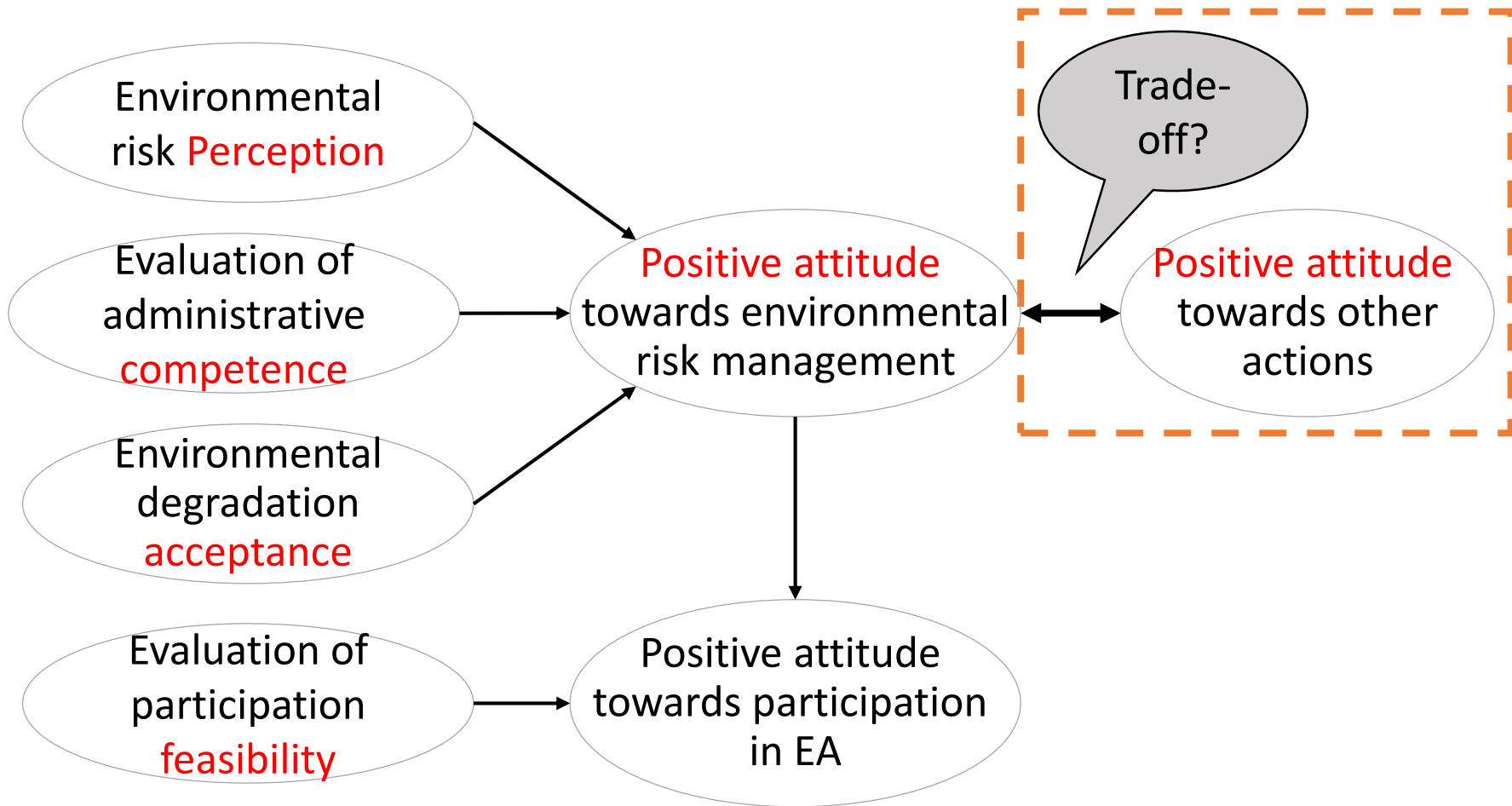


- Perception of risk affects attitude towards environmental risk management action
 - Acceptance has limited effect
- Evaluation of participation feasibility has larger impact than attitude towards action

*** $P < .001$; GFI=.877, AGFI=.855, RMSEA=.028
Error terms and observed variables are abbreviated.

Fig. Result of Structural Equation Modelling

Hypothesis: how people decide to participate



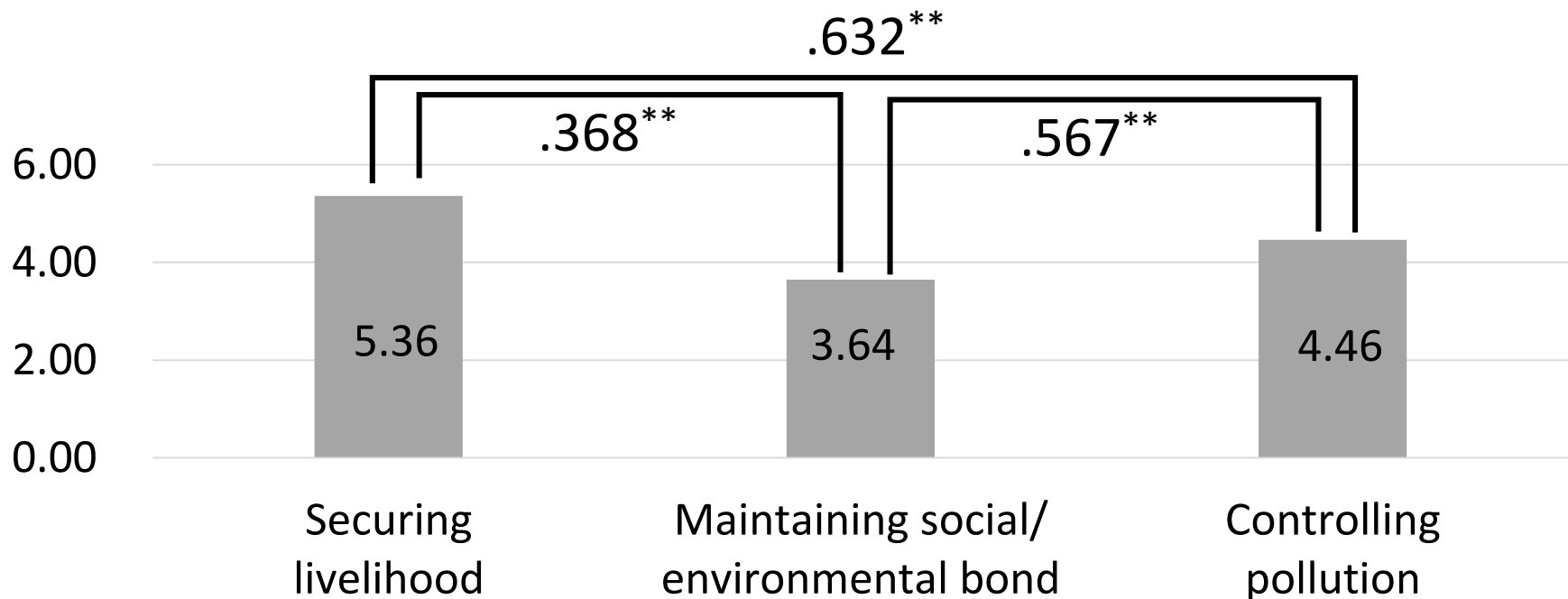


- Provide housings to those suffering
- Provide tax privilege to suffering companies
- Subsidize repair of individual housing
- Provide tax privilege to those suffering (victims)
- Protect lives from disaster risks
- Maintenance of important infrastructures
- Waste disposal
- Support socially vulnerable people
- Cope with human rights and privacy issues
- Creation of jobs
- Control **odor** from wastes
- Control **soil contamination** from hazmats
- Ensure opportunity for education
- Control release of **asbestos** from demolition
- Hold local (economy) revitalization events
- Prevent population outflow from locality
- Control **noise** from rubble crushing
- Control **gas emission** from incinerators
- Preserve and maintain **ecosystem**
- Control **GHG emission** from vehicles
- Hold event/gathering in locality for community networking
- Inexpensive public service
- Secure places for **enjoying nature**

Results:

Priority of post disaster actions

- Three subscales were developed by exploratory factor analysis (EFA)
- Positive correlation between subscales suggest that **people do not consider resource limitation of administrative bodies**



Summary & discussion 1/2

- ✓ Willingness to participate is higher for post-disaster EA (but the difference is not huge)
- ✓ Intense PI methods are preferred for post-disaster EAs (compared with pre-disaster)
- ✓ Feasibility matters
- ✓ Acceptability changes post- disaster, but has limited impact on attitude towards participation

→ Concise form of **face-to-face PI** method should take place **post disaster**, rather than conventional public consultation

Summary & discussion 1/2

- Environmental risks were recognized by disaster victims
- Risk perception matters
- Those who think environmental risk management should take place think the same for other risk management actions

→ **There is a demand for disaster related EAs** (e.g. simple checklist type of **SA**) from participants' perspective



Thank you for your attention!

Ryo Tajima

tajima.ryo@nies.go.jp