

# The effect of communication on environmental behaviors: Comparing Germany, Japan and China

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# Research question

- Does mass media and personal communication affect environmental attitudes and behaviors?
- Which is more powerful?
- Does the effect differ between countries?

# The effect of mass media

- Some studies shows that mass media can affect environmental behaviors
  - Syme et al. (1987) TV commercial message had effects to promote energy saving driving.
  - Sampei & Aoyagi-Usui (2009) Mass media coverage of climate change had impact on public concern on the issue.
- Other studies show that the effect of mass media is limited.
  - Pope (1982) The cost of a campaign to promote house insulation exceeded the actual cost to adopt insulation for the targeted households.
  - Stern (1999) Information can affect only low cost behaviors.

# Personal communication

- Personal communication can affect environmental behaviors
  - The number of acquaintances who purchased the photovoltaic generations affect the intention to buy those systems. (Leonard-Barton, 1981)
- Costanzo et al. (1986)
  - Information through personal channel are more favorably evaluated, well understood, and memorized.
- Personal communication affect social norm
  - Nonami et al (1997) Personal communication affected behavior directly and through social norm.

Personal communication deliver not only information, but also normative influences from one's reference group



We predict that personal communication can have stronger impact on environmental attitudes and behaviors than mass media.



# Cultural differences

- Markus & Kitayama (1991) Important values differ among cultures
  - Western countries (e.g. Europe and North America): independence and individual values.
  - Asian countries: interdependence, relationship with others
- Personal communication would have stronger effect in Asian countries than in Western country
  - <- social norm of the reference group is more important in Asian countries.

# Hypothesis

1. Personal communication have stronger effect on environmental attitudes and behaviors than mass media
2. Personal communication have larger effects in Japan and China than in Germany

Method 



## ● Procedures

- We distributed questionnaires to undergraduate students in Germany, Japan and China at university classrooms.

## ● Respondents

- Germany: 308 responses (296 valid answers), Japan: 662 responses (611 valid answers), China: 195 responses (184 valid answers).

# Questionnaires

- Behavior (1 item)

- Avoid using heating (or air conditioning) too much

- Intention (1 item)

- Intention to avoid using heating or air conditioning too much in the next couple of months

- Personal communication

- Communication regarding saving electricity with university friends and family were asked ( 2 items)

- Mass media

- Getting information about electricity saving from newspaper/TV were asked (1 item)

- Other variables

- Personal norm and Subjective norm were measured by two items. Perceived behavioral control was measured by 1 tem. We asked efficacy and seriousness as antecedents of personal norm.

# Results

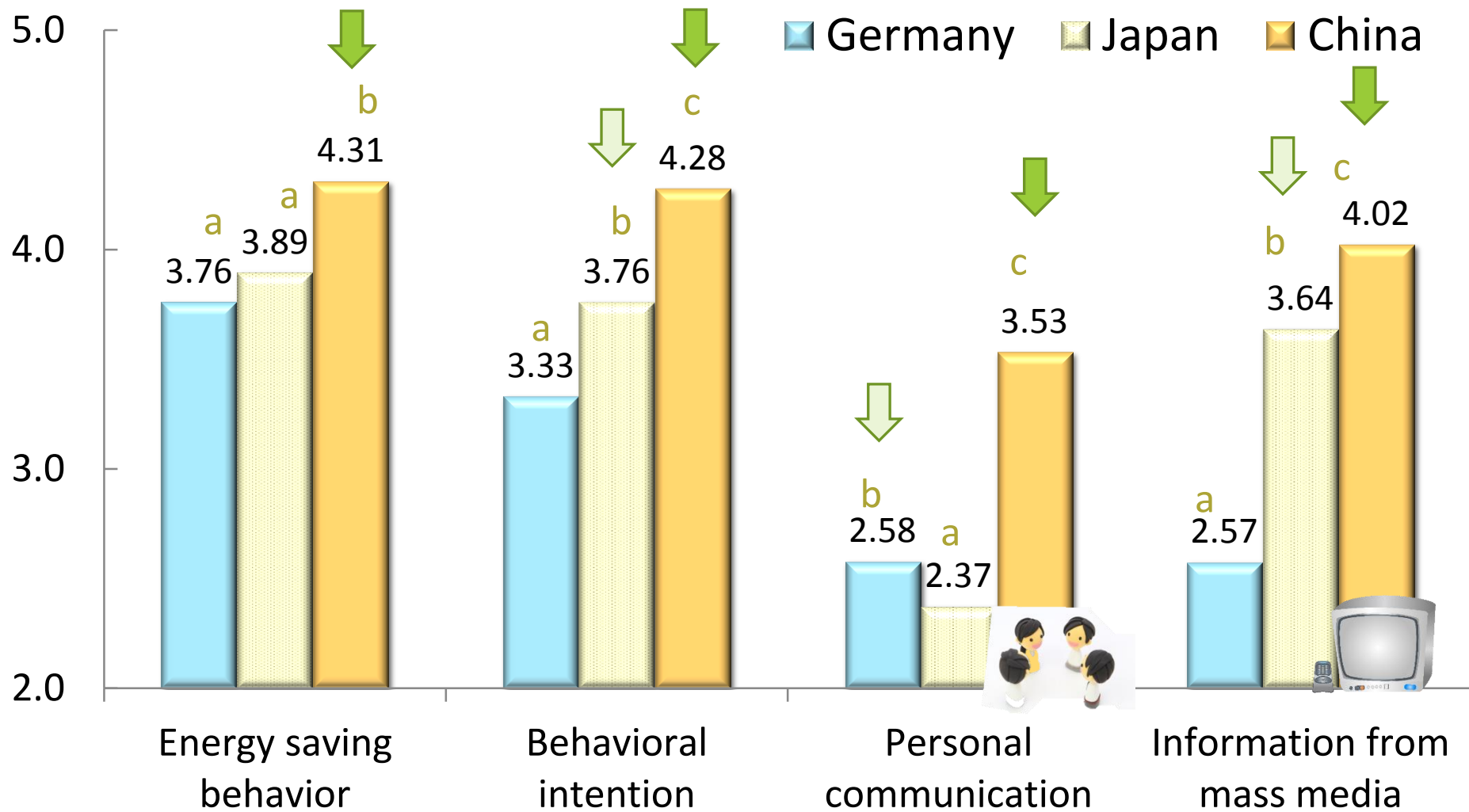


Fig. 1 Means of the variables by country (1)

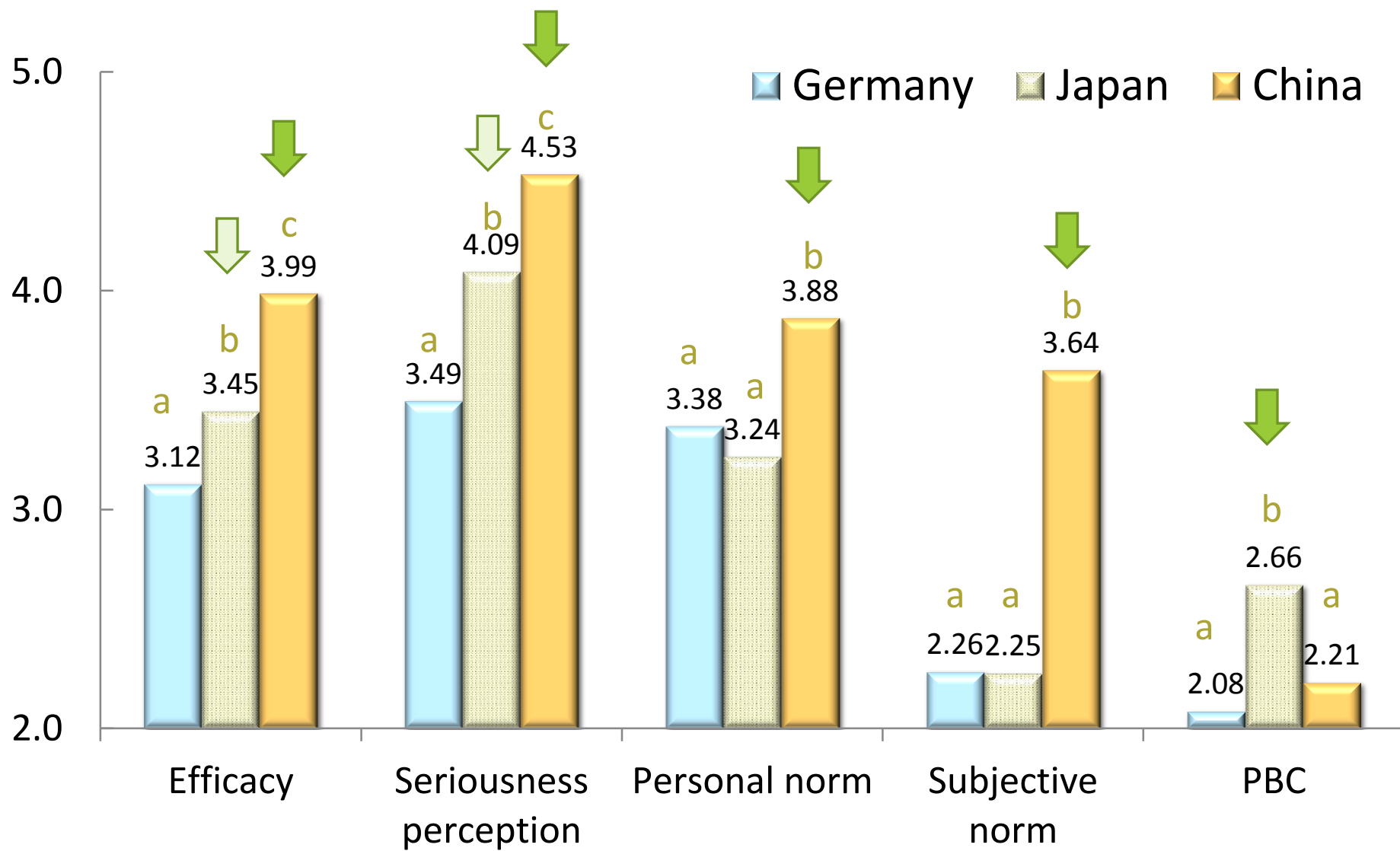


Fig. 2 Means of the variables by country (2)

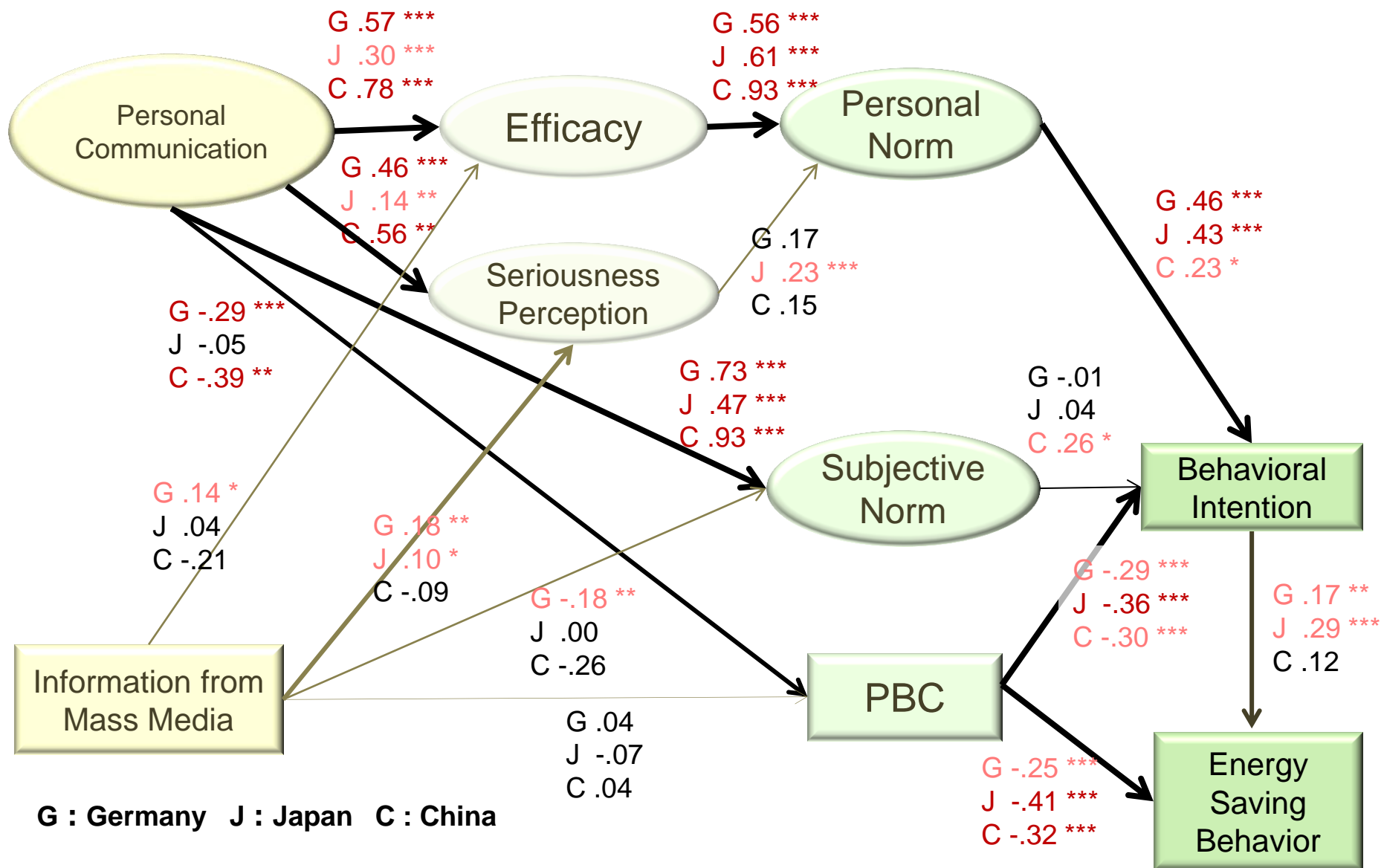


Fig. 3 The result of SEM for multiple groups

Model fit:  $CMIN = 610.38$ ,  $df = 191$ ,  $CFI = .914$ ,  $RMSEA = .045$

# Discussion



# Personal communication vs. mass media

- Personal communication had effect on subjective norm, efficacy, seriousness and PBC. The effect of mass media on these variables were smaller.
- Hypothesis 1 (personal communication > mass media) was supported.



# Cultural differences

- Personal communication had consistent effect in three countries
  - Hypothesis 2 (Japan, China > German) was not supported.
- Personal communication has **universal role** regardless of the country.

Affect broader  
number of people  
at the same time

Attempts to increase  
environmental  
communication  
would be needed

Target is not specified  
One-way  
communication



Mutual  
communication within  
ingroup  
It conveys group norm

Mass media

Personal communication





Thank you very much for your attention!

