



# Science Literacy or Value Predispositions? An Overview of Factors Shaping Public Attitude Towards Nuclear Energy

---

**Dr. Shirley S. Ho**

Associate Professor & Assistant Chair (Faculty)  
Wee Kim Wee School of Communication and Information  
Nanyang Technological University, Singapore

February 15, 2017

**Going Nuclear: Risks, Odds, & Potential  
UH Energy**





# Nuclear Energy Risks & Benefits

International Atomic Energy Agency (IAEA, 2014)

## Proponents

- Low carbon emission
- Secure energy supply



## Opponents

- Proliferation of nuclear weapons
- High capital investment costs
- Nuclear waste contamination







# Recent Major Nuclear Accident

Japan (2011): Fukushima Daiichi Accident





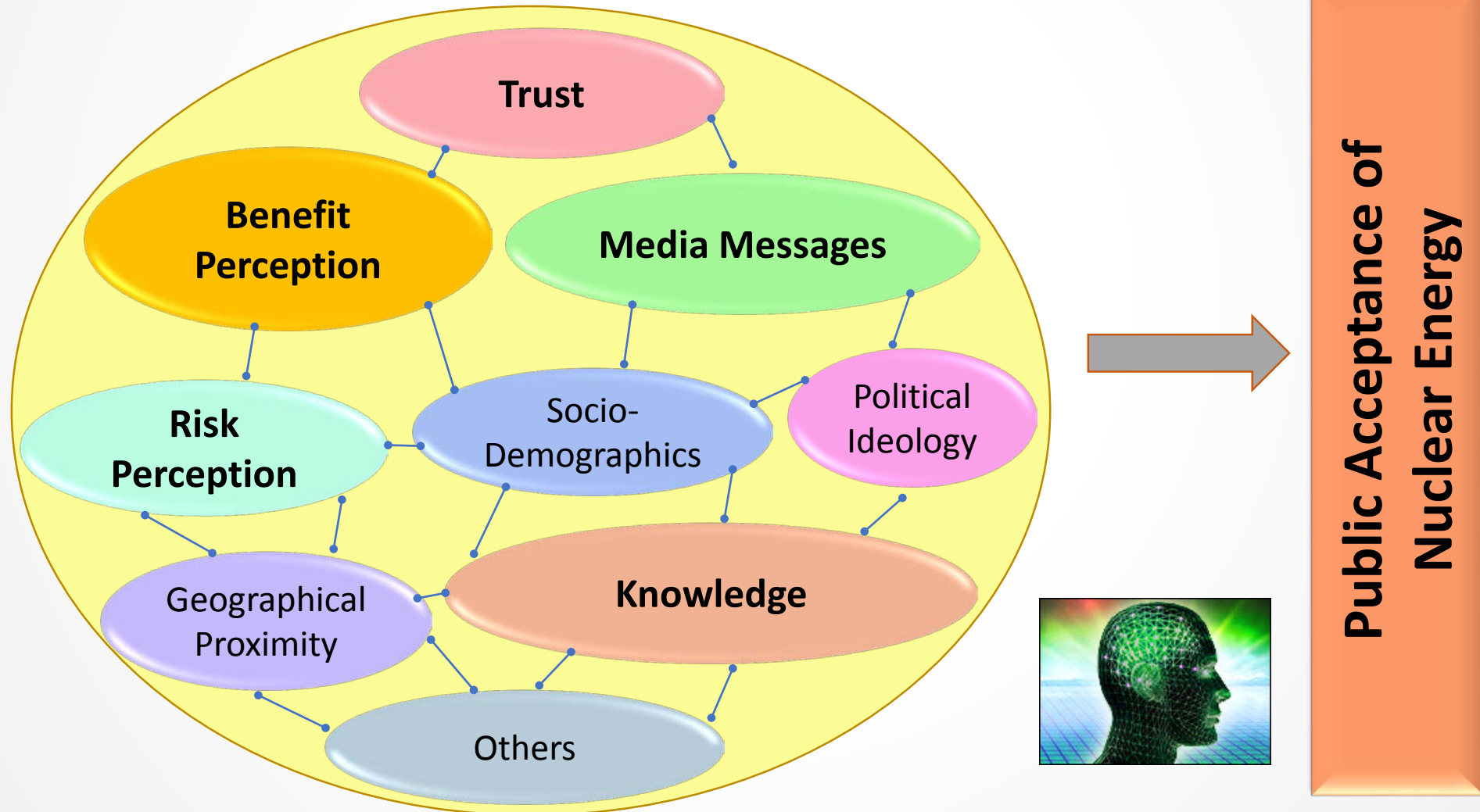
# Scientific Knowledge vs. Value Predispositions



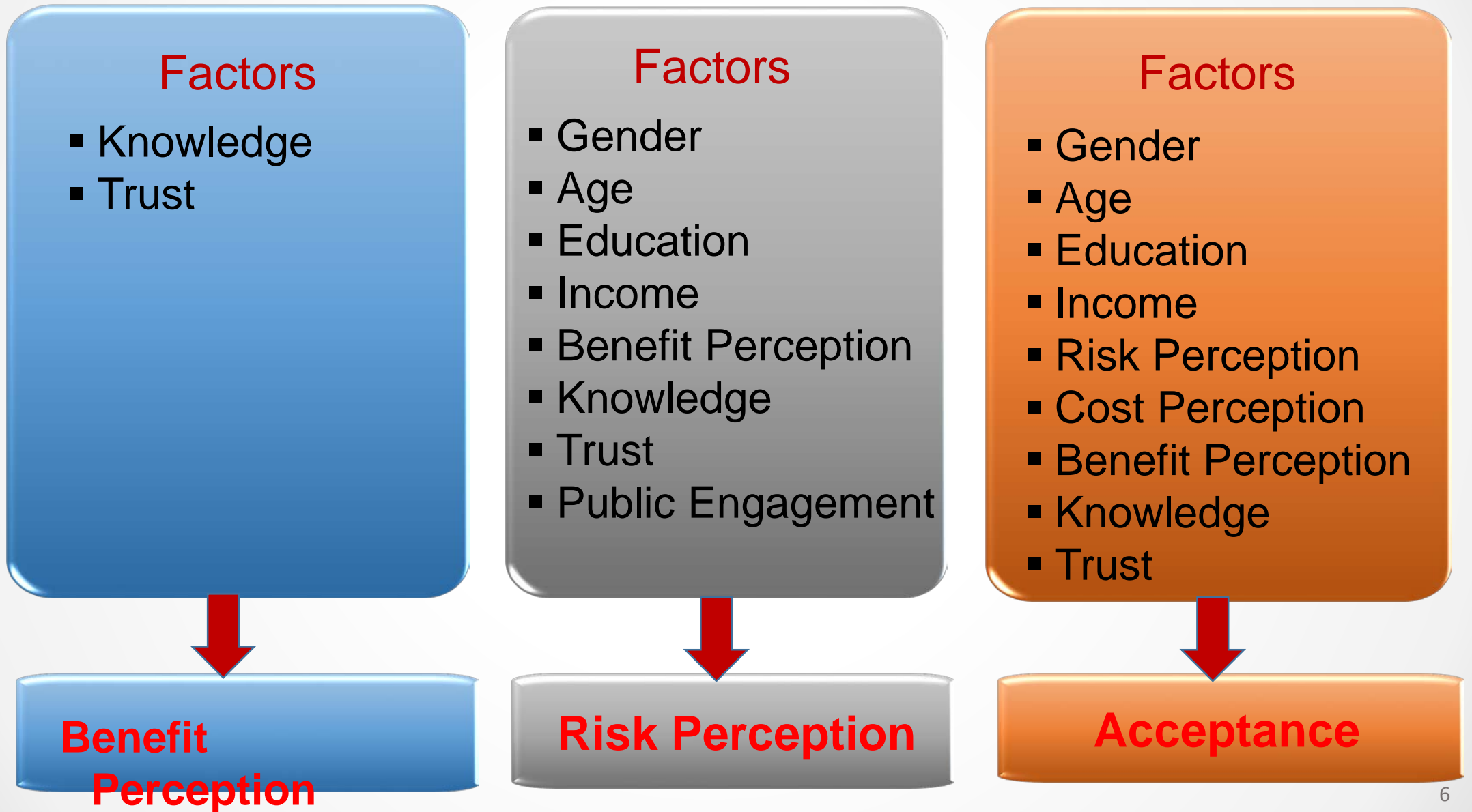




# Factors Shaping Public Opinion of Nuclear Energy



# Study Aims

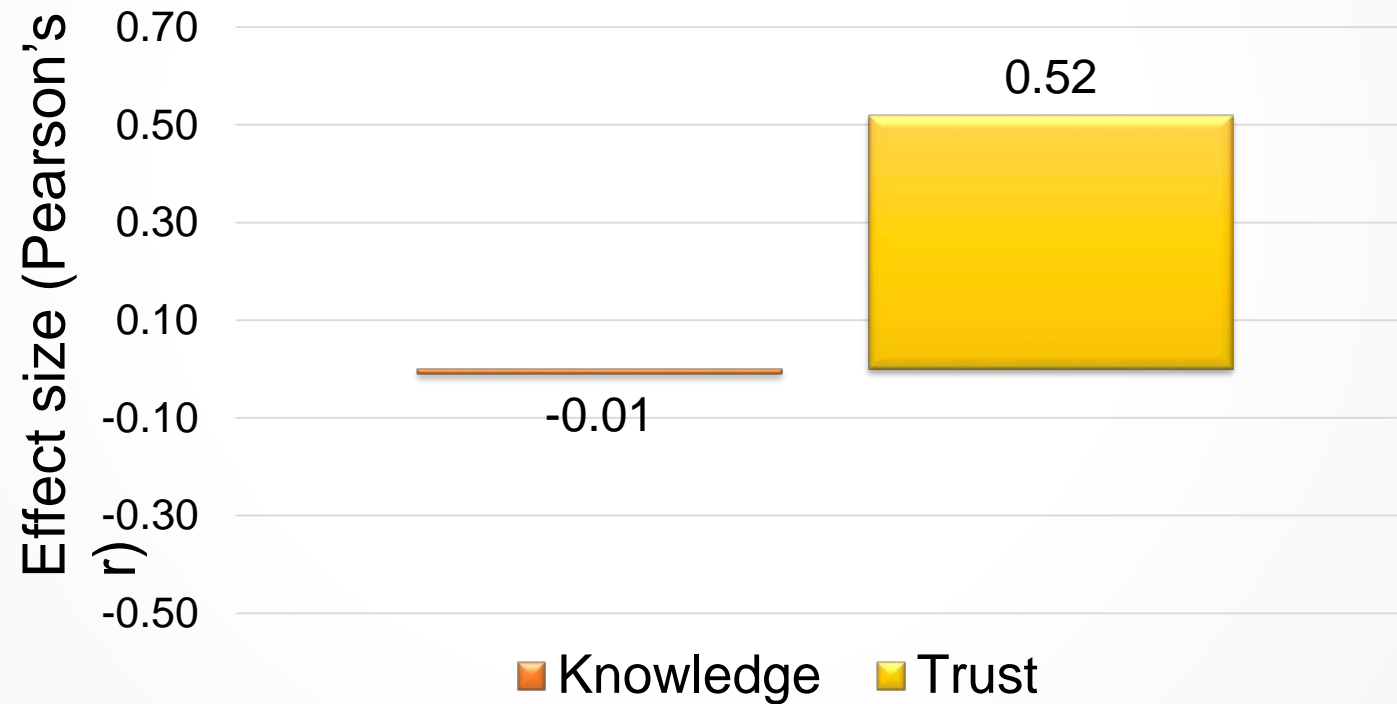


# Description of the Studies

Total selected studies	34 (North America and Europe: 10 studies; European countries, including the United Kingdom, Spain, Italy, Switzerland, and Turkey: 14 studies; East Asia including Japan, South Korea, China, and Taiwan: 10 studies)
Time period of data collection	Before and after the Fukushima nuclear accident (1995-2016)
Geographical continents	North America, Europe, and East Asia
Studies collected before the Fukushima nuclear accident in March 2011	17
Studies collected after the Fukushima nuclear accident	17

# Weighted Correlations

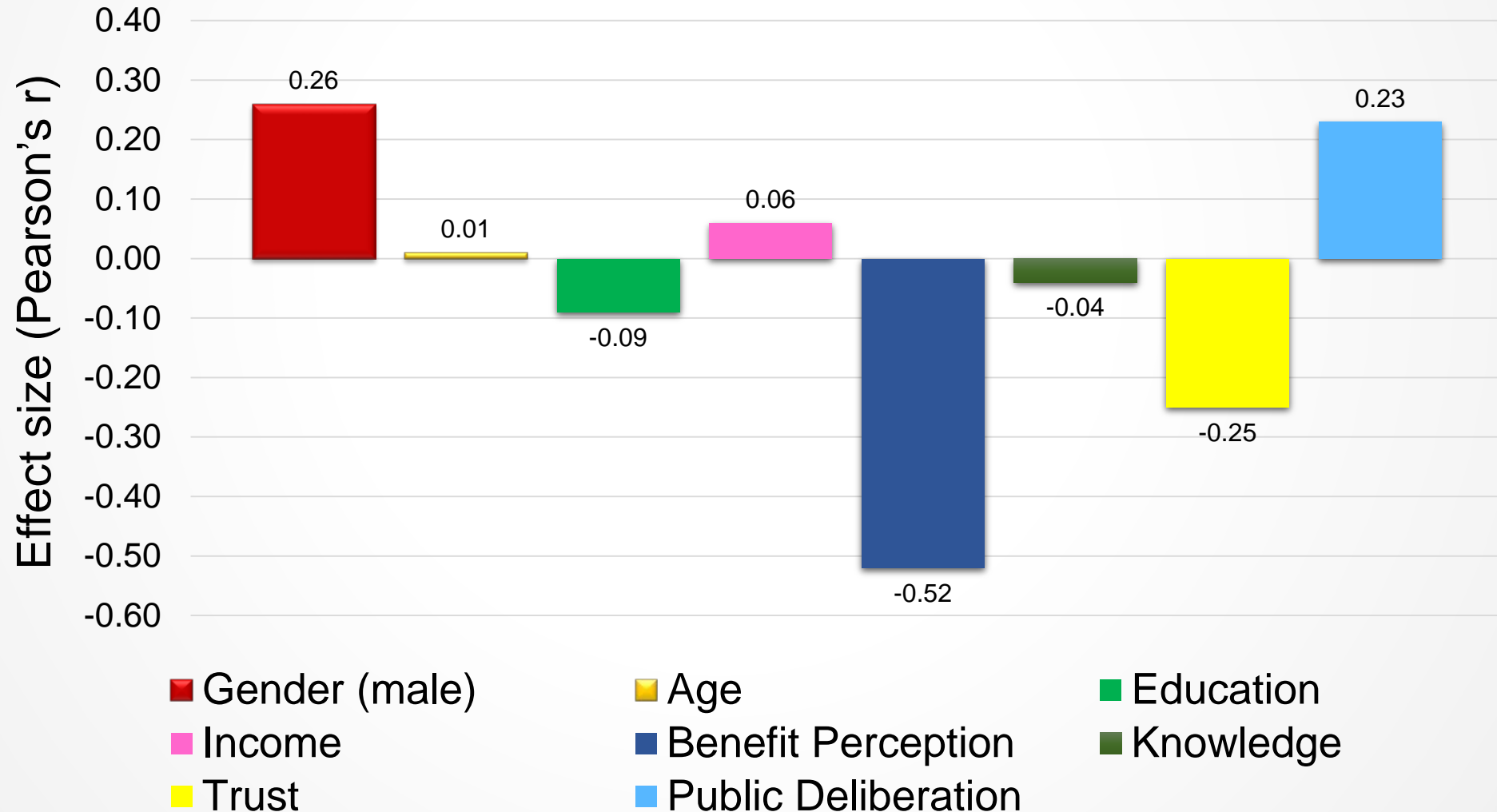
## Benefit Perception of Nuclear Energy





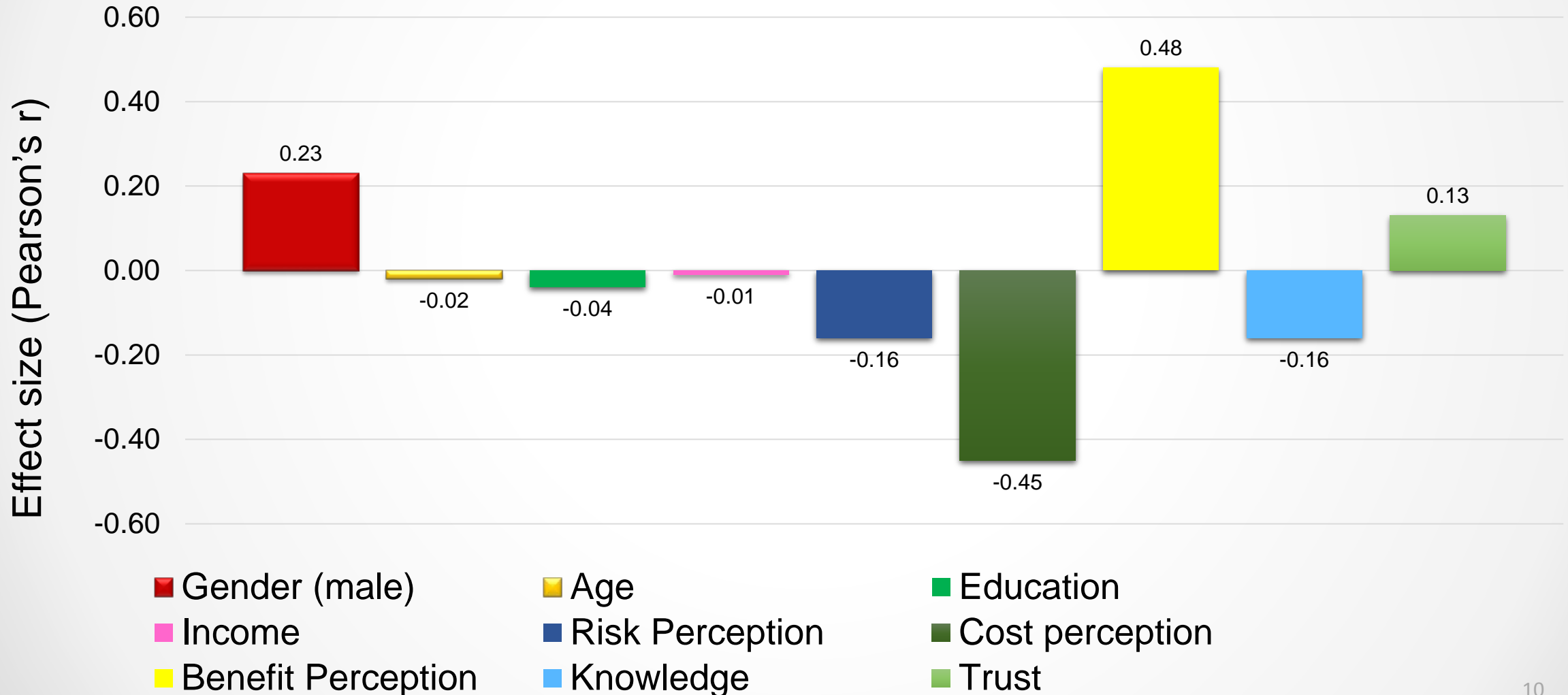
# Weighted Correlations

## Risk Perception of Nuclear Energy



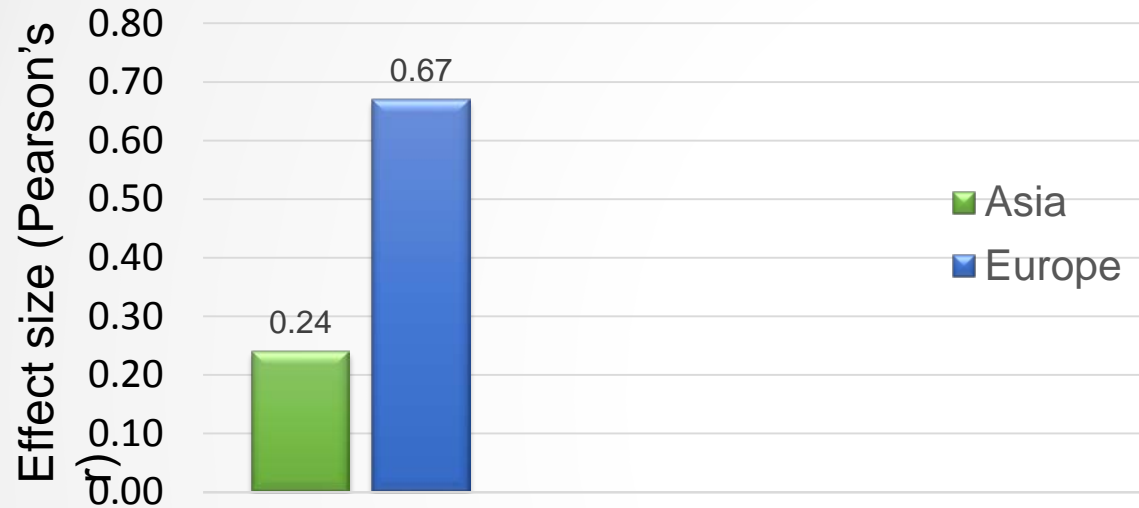
# Weighted Correlations

## Public Acceptance of Nuclear Energy

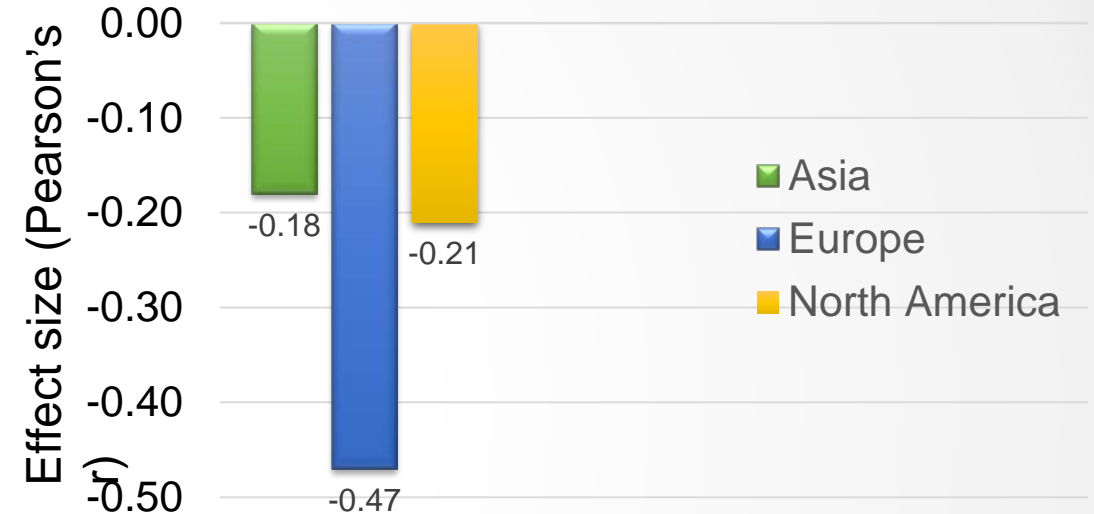


# Moderator Analysis: Country & Trust

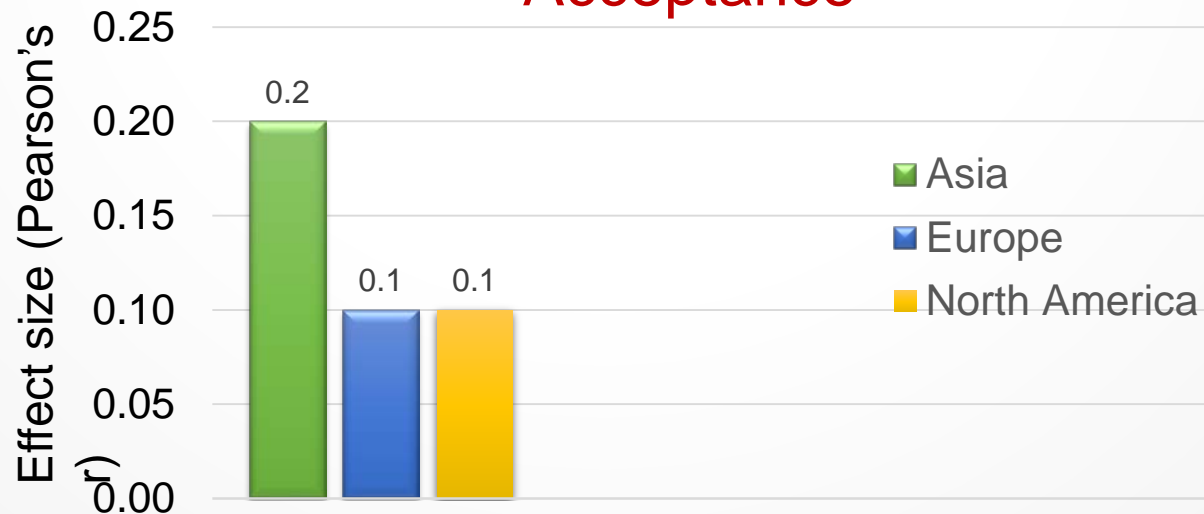
## Benefit Perception



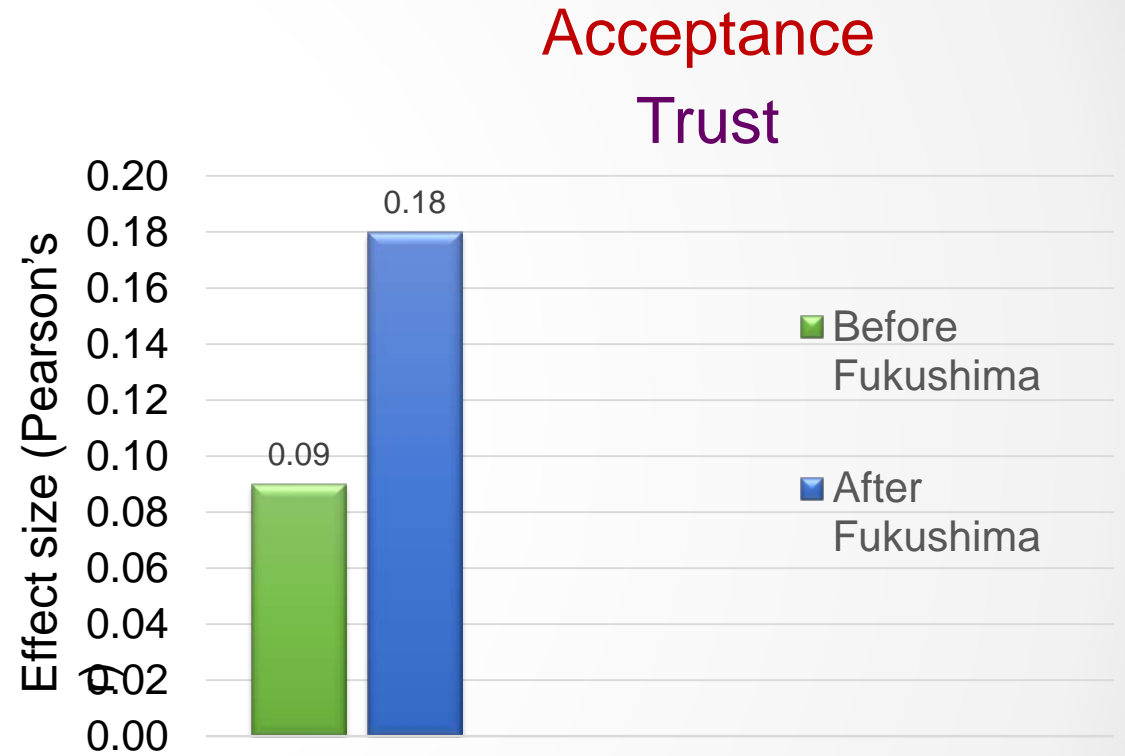
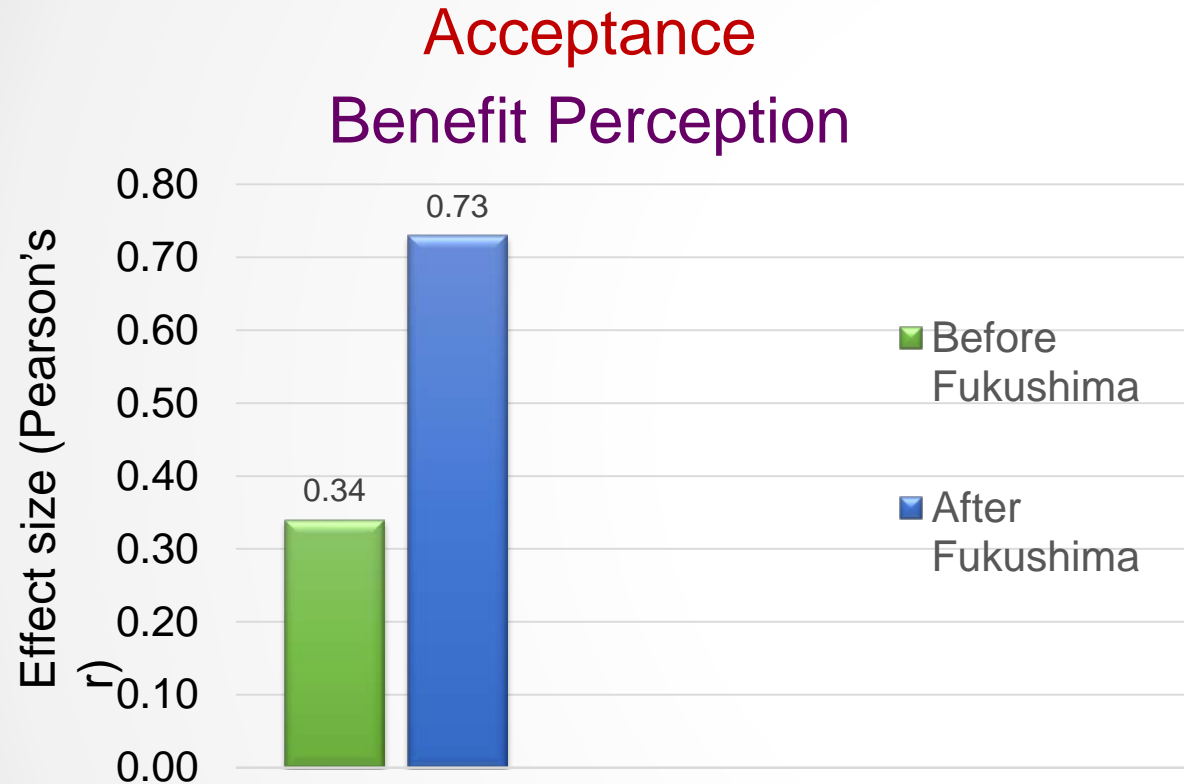
## Risk Perception



## Acceptance



# Moderator Analysis: Time



Note.  $k$  = number of studies;  $N$  = total sample size for all studies combined; effect size is Pearson's  $r$ ; 95% CI= Lower and upper limits of 95% confidence interval for effect size;  $Q$  = Cochran's (1954) measure of homogeneity. \*  $p < .05$ , \*\* $p < .01$ , \*\*\*  $p < .001$



# Implications

---

- Communication strategies should include strategic **media framing** to convey messages about nuclear energy.
  - Simply providing more information about energy policies to raise public awareness of nuclear energy is insufficient.
- Effective **public deliberation** initiatives should be implemented to include the public in the decision-making of nuclear energy.
  - Open and transparent deliberation is key to enhance social trust.



# Thank You

---

Dr. Shirley S. Ho  
Associate Professor & Assistant Chair (Faculty)  
Wee Kim Wee School of Communication and Information  
Nanyang Technological University  
31 Nanyang Link, #03-50, Singapore 637718  
tsyho@ntu.edu.sg  
www.shirleysho.com

**Acknowledgement:** *This material is based on research supported by the Singapore National Research Foundation under NPRP Award No. NRF2014NPR-NPRP001-004. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Singapore National Research Foundation.*