Smoke and people: The implications of beliefs, attitudes, and perceived risk for communication

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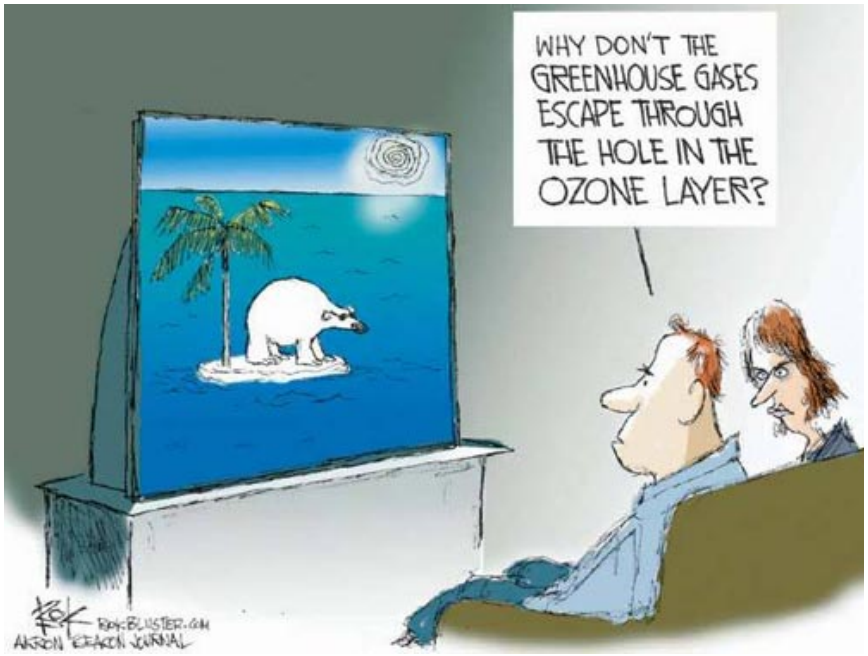
JOINT FIRE SCIENCE PROGRAM

PNW

Risk Information Seeking and Processing (RISP)

- Information Seeking
  - Routine or non-routine sources
- Information Processing
  - Heuristic or systematic
- More effortful seeking and processing
  - Non-routine and systematic

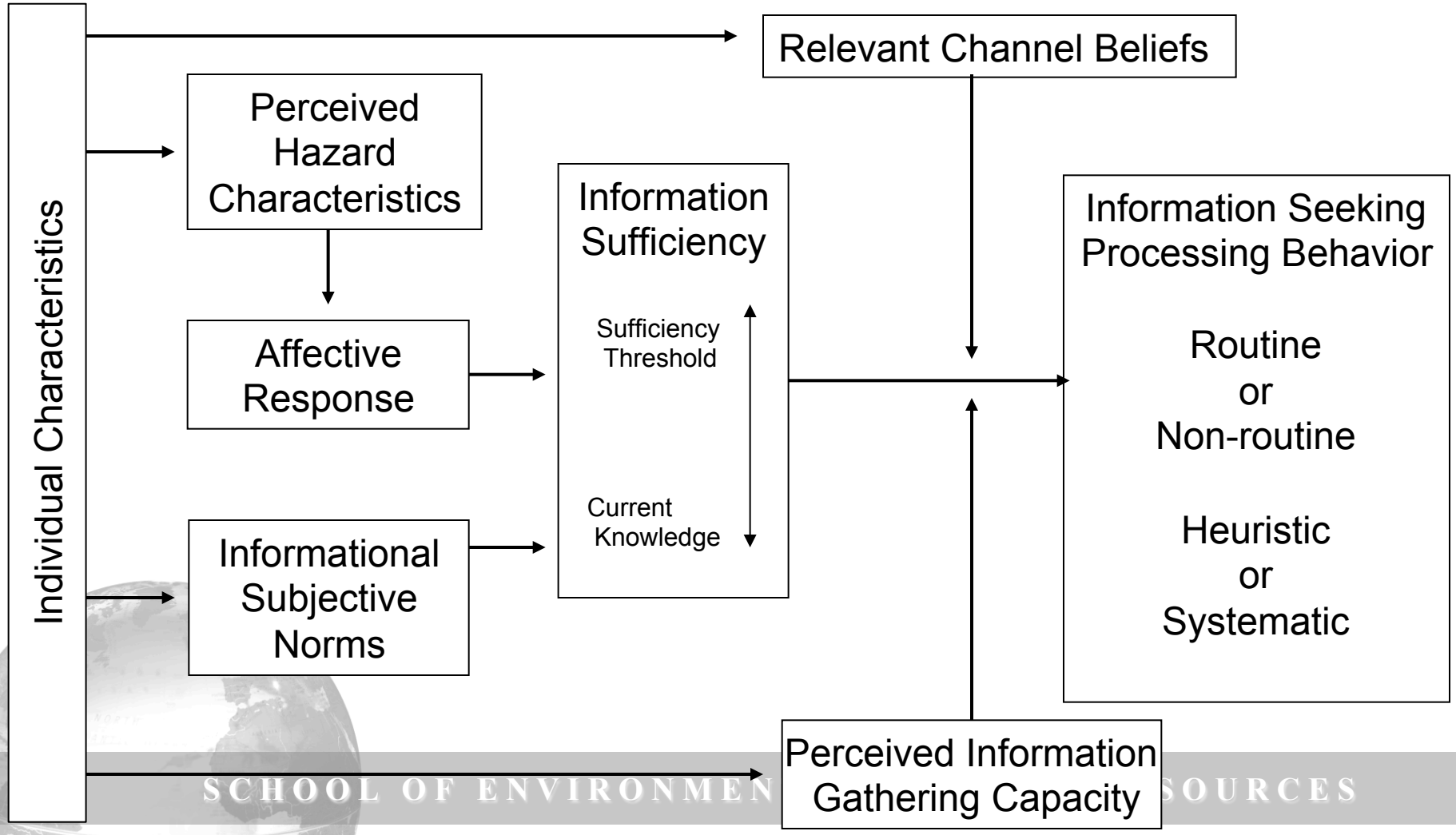
Humans are "Cognitive Misers"



- Desire to simplify complex phenomena to avoid effortful processing
- Use shortcuts to interpret information (heuristics)

Fiske & Taylor. 1991. Social cognition (2nd ed.). New York: McGraw-Hill.

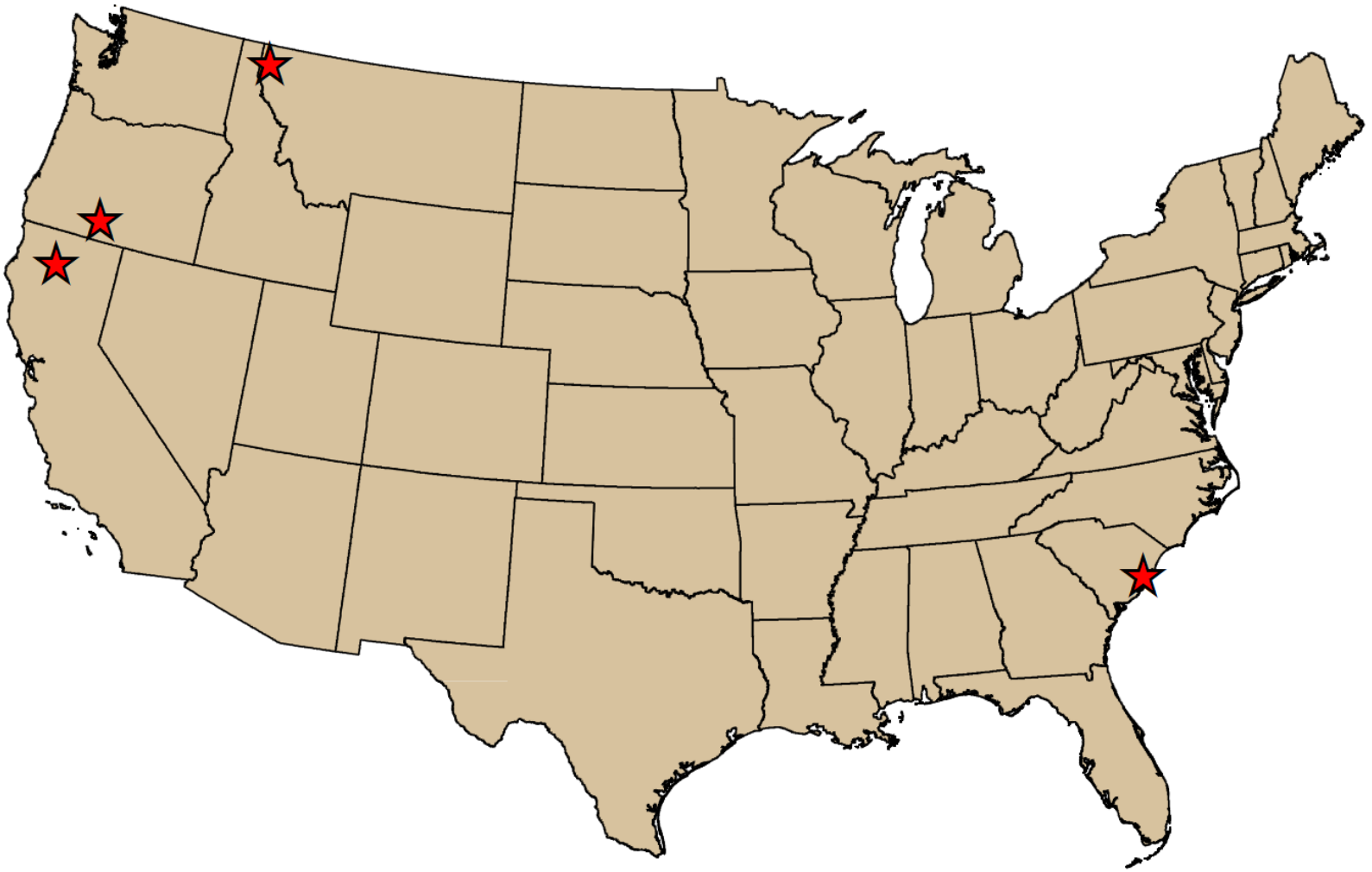
RISP Model
(adapted from Griffin et al. 1999)



Methods

- Phase 2 of 3-phase project
- Phase 1: Interviews
- Phase 2: Mail-back survey
  - RISP: Path Analysis
- Phase 3: Conduct communication experiments

Study Sites



Site	Mailed Questionnaires	Delivered Questionnaires	Completed Questionnaires (n)	Response Rate (%)
California	1200	1072	257	24
Montana	1200	1094	324	30
Oregon	1200	1070	273	26
South Carolina	1200	1089	148	14
Total	4800	4325	1002	23

Respondents

- N = 1002
- 58% Male
- 61 years old (mean)
- 88% white/Caucasian
- 73% attended at least some college
- Average income: $40,000-60,000
- Non-response bias check: no meaningful statistically significant differences

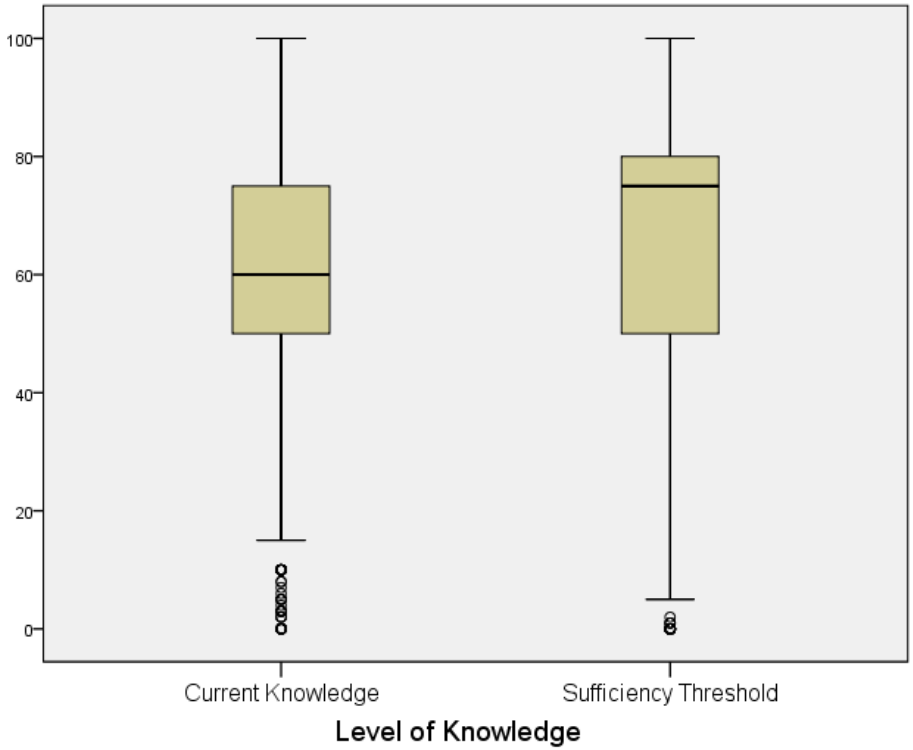
Information Sufficiency

- Self-assessed current knowledge about smoke
- Estimate of preferred level of knowledge to have comfortable understanding
- Scale from 0 (no knowledge) – 100 (complete knowledge)

Information Sufficiency

Location	Current knowledge
CA	58.1
OR	58.7
SC	54.5
MT	61.3
Overall	58.9

Information Sufficiency (0 – 100)



Paired Samples T-Test for Perceived Current Knowledge and Sufficiency Threshold

	Mean (n=925)	Std. Error Mean
Current Knowledge (How much do you feel you know about smoke?)	58.68	.769
Sufficiency Threshold (How much do you feel you would need to know to have a comfortable understanding of smoke in your area?)	66.27	.818

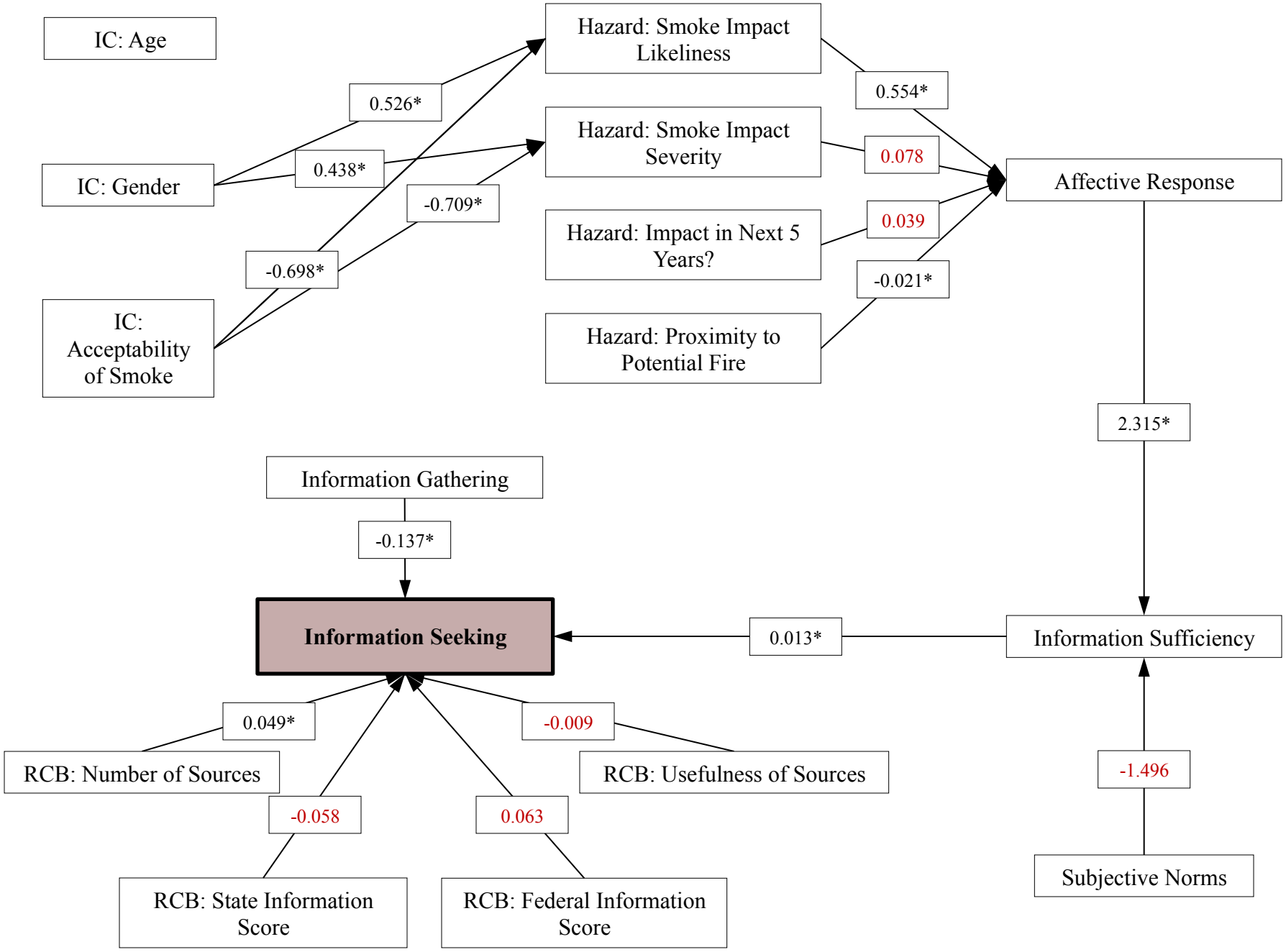
- Significant difference between current knowledge and sufficiency threshold, $t(924) = -7.88$, $p < 0.001$
- Participants believe they need more information

Relevant Channel Beliefs

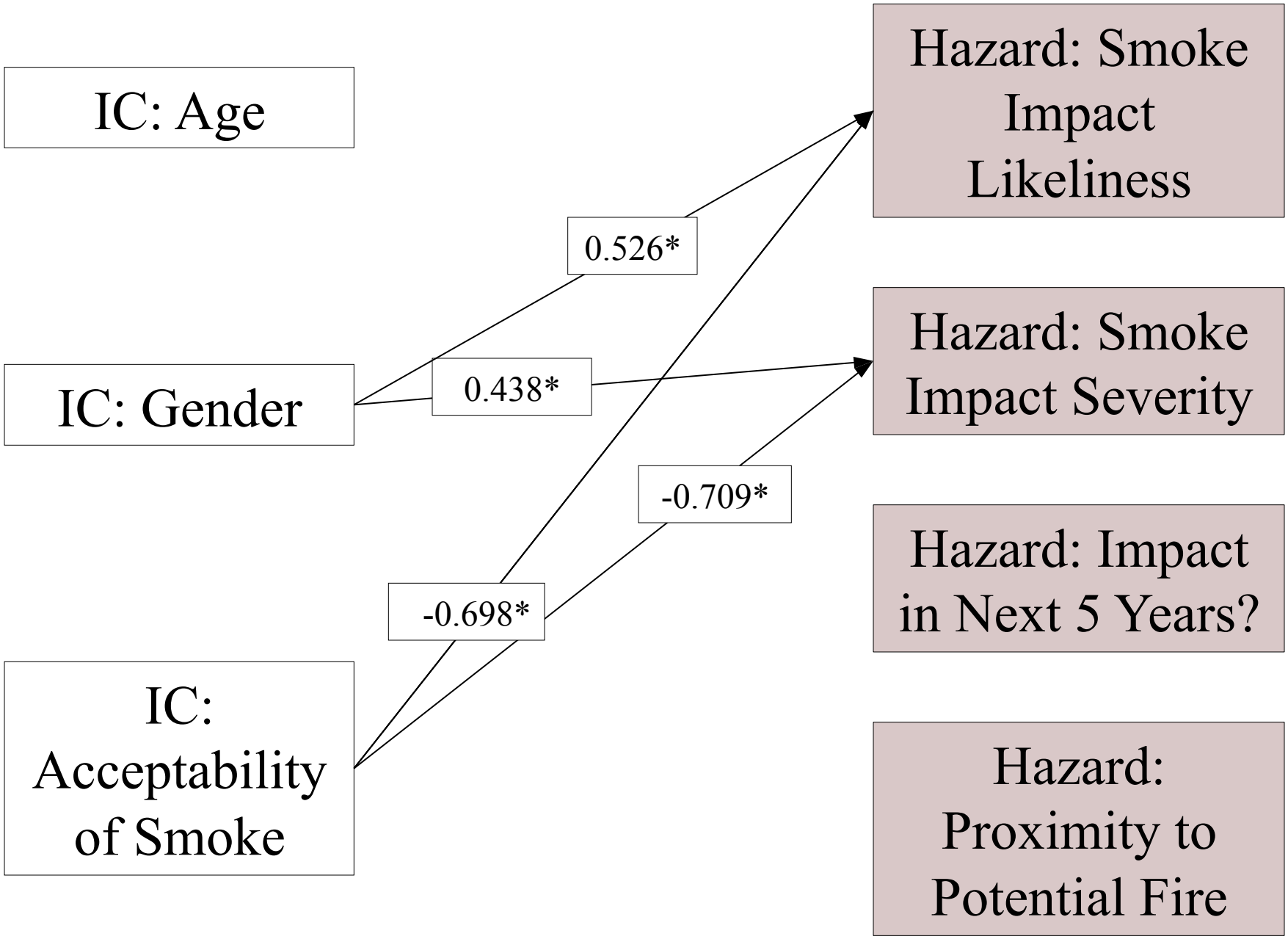
- Number of sources (0 – 16)
  - $M = 4.76$, $SE = 0.115$ (overall average)
- Average usefulness of sources (1 – 5)
  - $M = 3.05$, $SE = 0.035$ (overall average)
- Information provision scores (1 – 7)
  - Federal agencies: $M = 3.72$, $SE = 0.049$ (overall average)
  - State agencies: $M = 3.94$, $SE = 0.049$ (overall average)

Perceived Information Gathering Capacity

- If I wanted to, I could easily locate information about smoke emissions
  - $M = 4.24$, $SE = 0.057$ (1 – 7; overall average)
- It is hard for me to find useful information about smoke emissions (reverse coded)
  - $M = 4.44$, $SE = 0.053$ (1 – 7; overall average)



* Denotes significance at $\alpha = 0.05$ level



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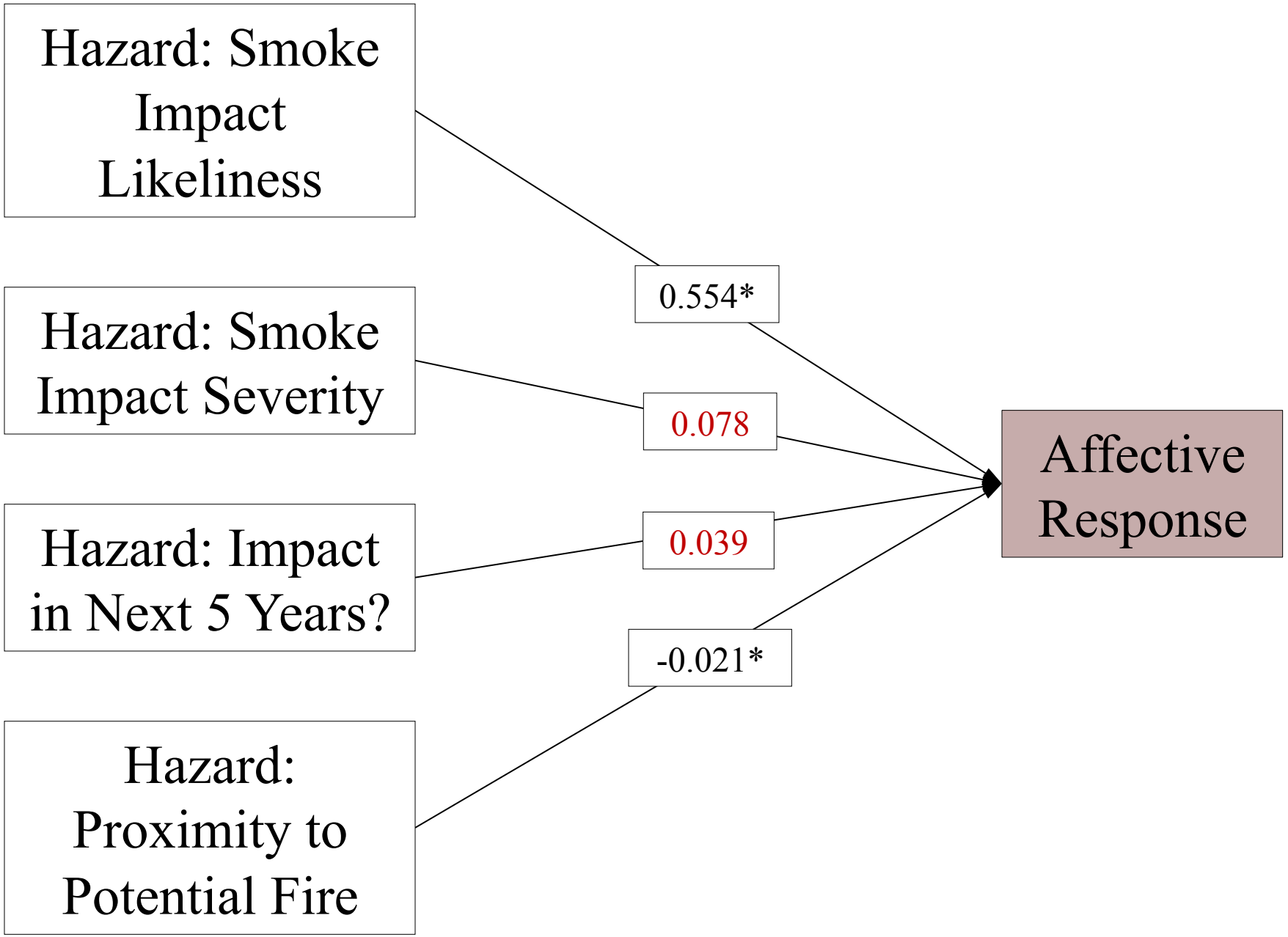

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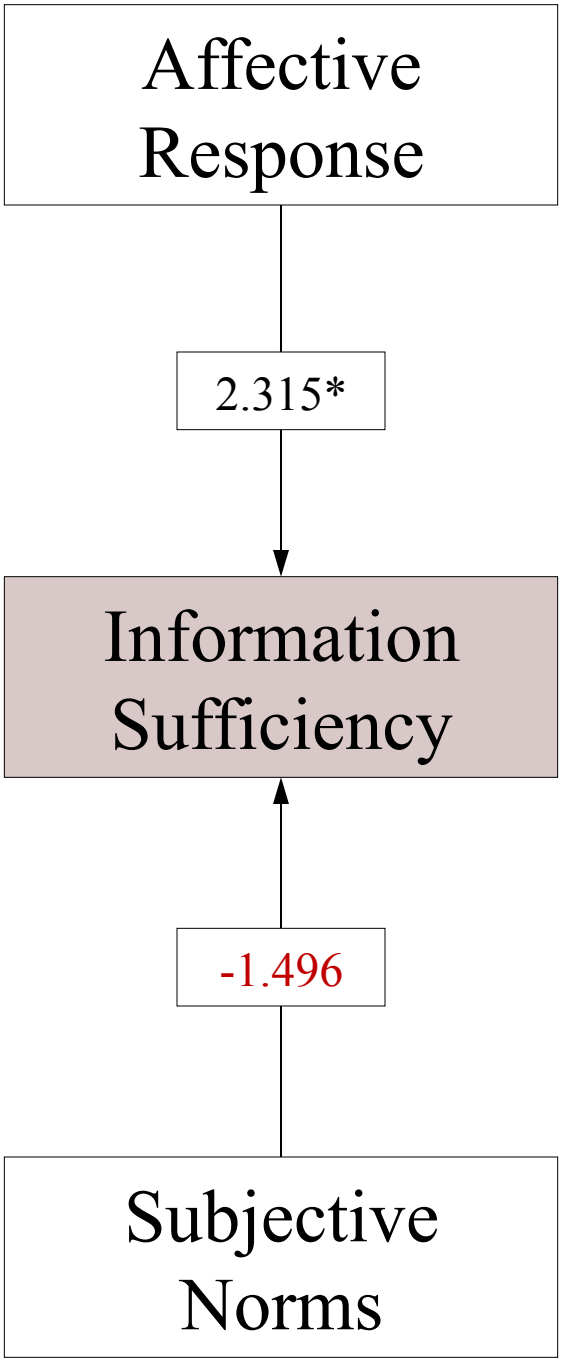

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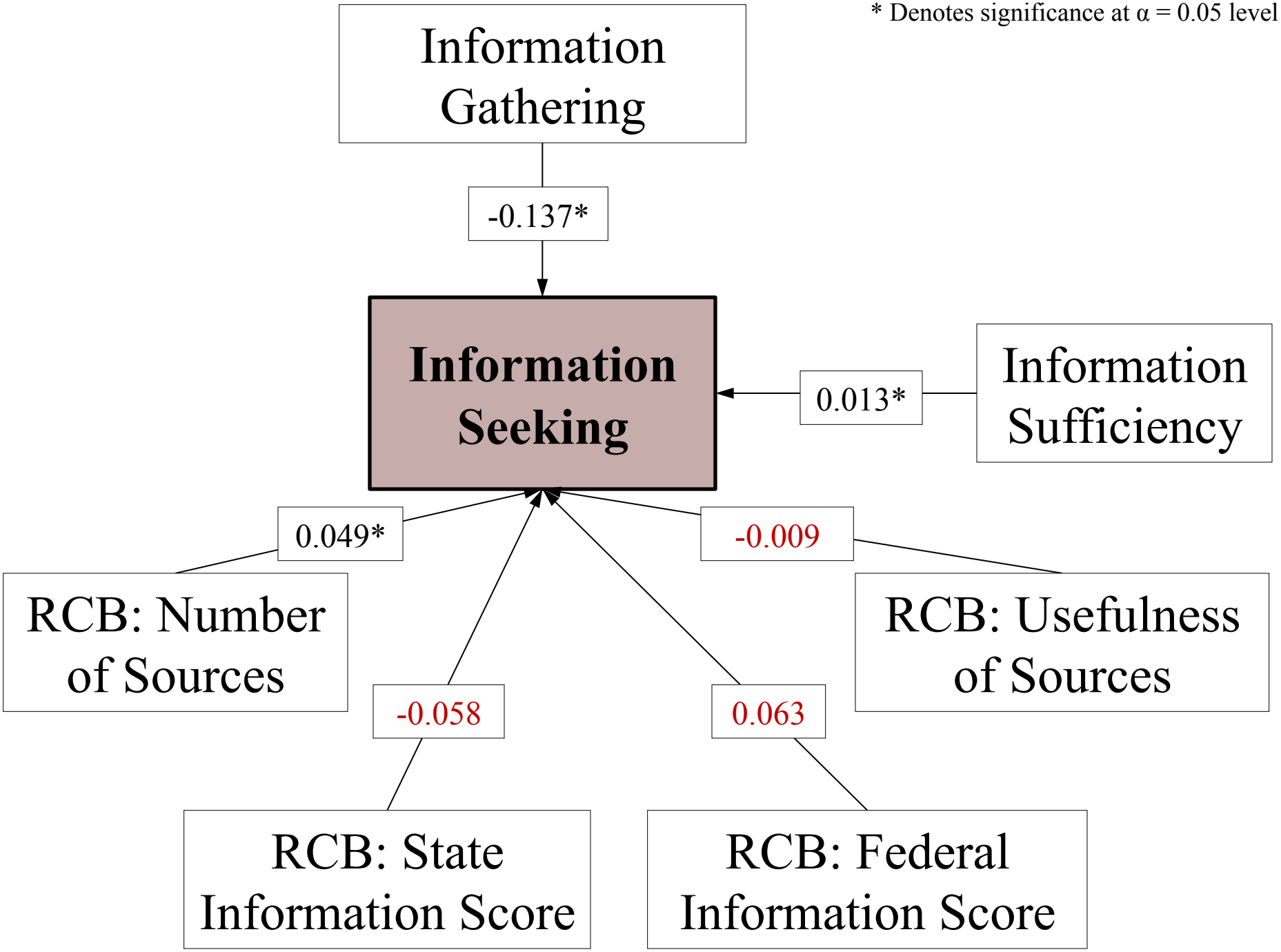
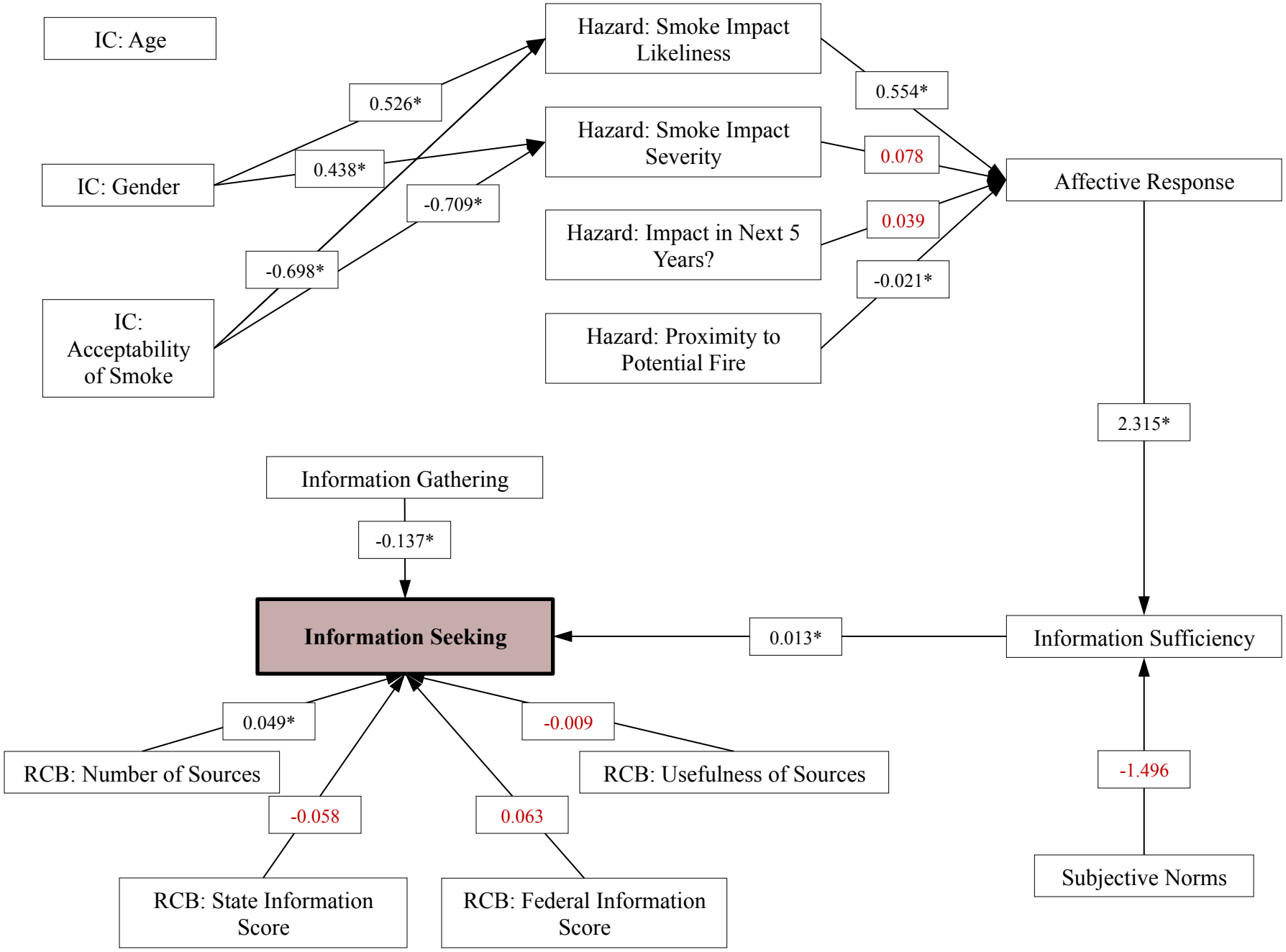

* Denotes significance at α = 0.05 level
Information Gathering
-0.137*
Information Seeking
0.013*
Information Sufficiency
0.049*
-0.009
RCB: Number of Sources
RCB: Usefulness of Sources
-0.058
0.063
RCB: State Information Score
RCB: Federal Information Score



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Conclusion

- Residents generally feel they need more information about smoke
- Information seeking influenced by:
  - Number of information sources (relevant channel belief)
  - Information sufficiency
  - Perceived ease of gathering information
  - Affective response
  - Some perceived hazard characteristics
- RISP model supports the literature

Future Direction

- Smoke communication strategies
  - What encourages information seeking and effortful processing?
  - Examine influence on knowledge, beliefs, and attitudes towards smoke emissions and management
- Influence on acceptability of prescribed burns

Acknowledgements

- Survey respondents and interview participants
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Thank You!

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