

# An Exploration of Rural U.S. Residents' Climate Change Beliefs

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## Introduction

Due to its sensitivity to weather patterns, agriculture is economically susceptible to the impacts of climate change

Rural communities are vulnerable to climate change impacts due to demographics, occupations, and poverty rates

20% of the U.S. reside in a rural area, and 404 rural counties are farming-dependent

Rural residents will experience climate change differently than urban counterparts



## Theoretical Framework

Theory of social norms (Jones et al., 1994)

- Social norms: behaviors, attitudes, and beliefs within a group that shape members' opinions, and actions
- May be both products and processes
- Social norms generate social groups, which may include geographical regions
- Personal climate change norms can influence individuals' selection of their social groups



## Methods

- Researcher-developed quantitative survey instrument to measure U.S. individuals' climate risk perceptions, focusing on rural residents ( $N = 710$ )

- Data collected between November 7 and December 8, 2023 using Qualtrics

- Items assessed on 5-point Likert scale using McCright et al. (2016) ( $1 = \text{strongly disagree}$ ,  $5 = \text{strongly agree}$ )

- **Belief statements:** "The scientific evidence that the climate is changing is very solid."

- **Severity:** perceptions of the threat of climate change to themselves, their local community, the U.S., the world, and nature

- **Policy support:** "Provide tax rebates for people who purchase energy-efficient vehicles or solar panels."

## Data Analysis

- Descriptive statistics for severity, climate change beliefs, and support for policy
- One-way MANOVA to explore differences between the four U.S. regions: Northeast ( $n = 173$ ), Midwest ( $n = 204$ ), South ( $n = 200$ ), and West ( $n = 133$ )



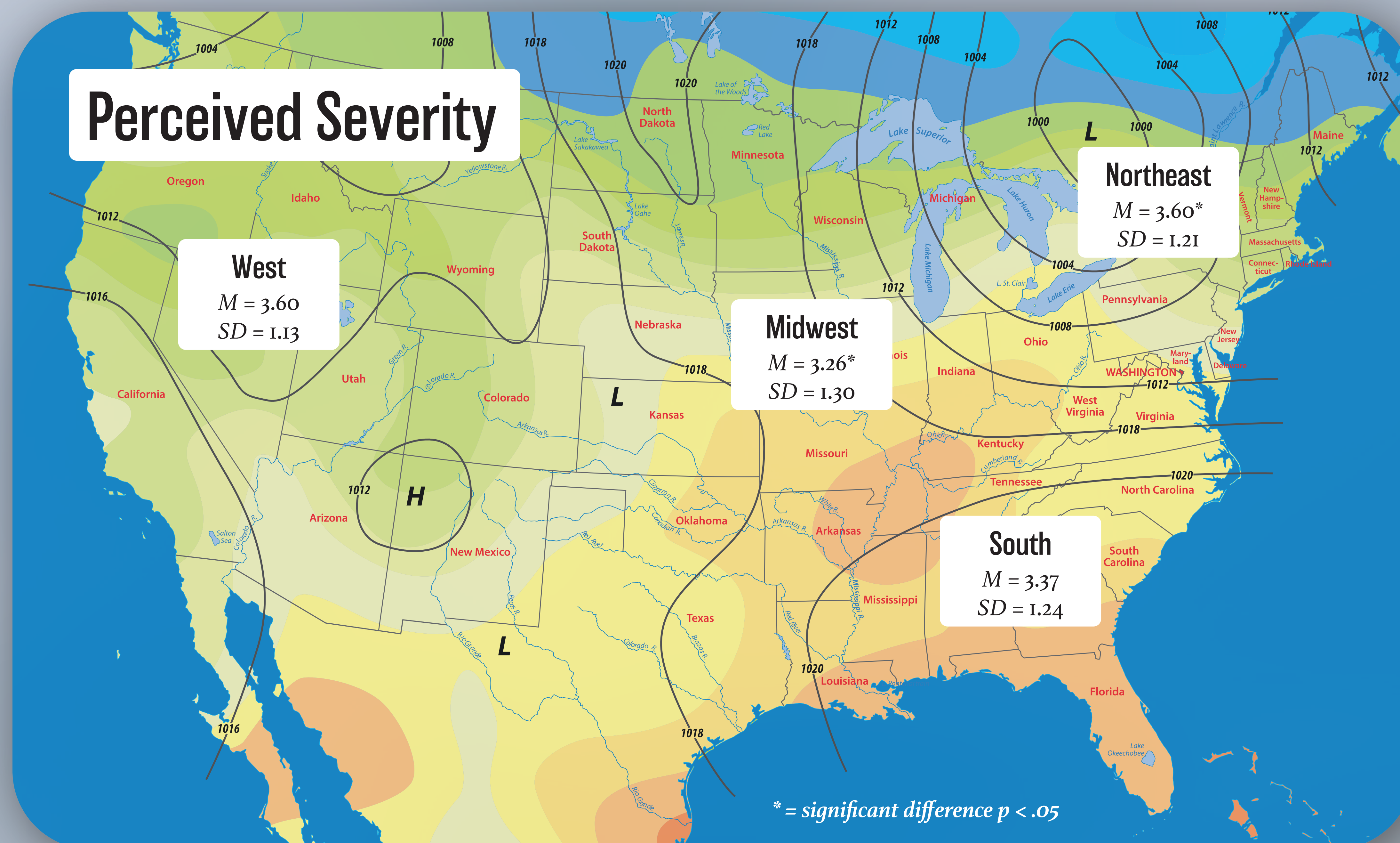
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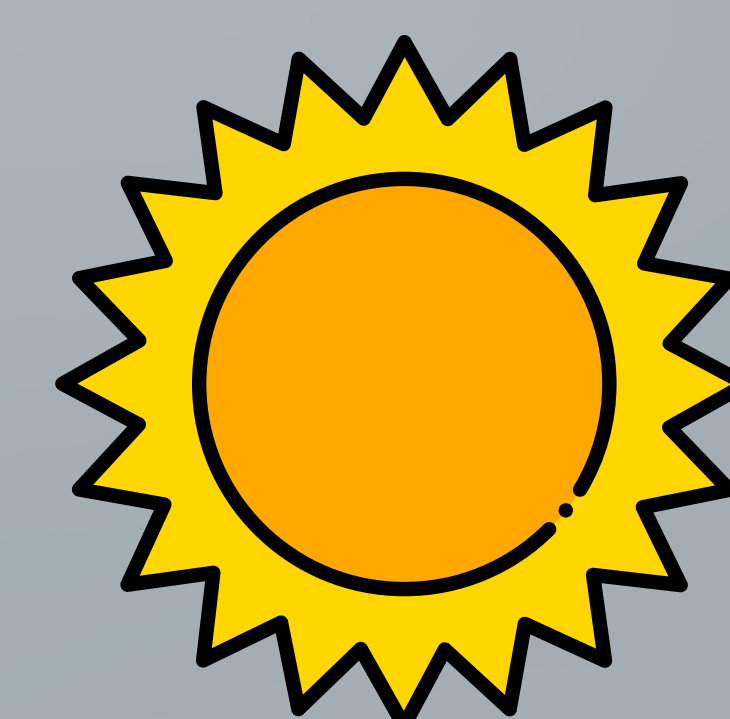
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## Results

- Perceived severity ( $M = 3.44$ ,  $SD = 1.24$ ) rated highest, then support for climate change policy ( $M = 3.38$ ,  $SD = .90$ ) and climate change beliefs ( $M = 3.22$ ,  $SD = .94$ )
- No statistically significant differences in climate change beliefs,  $F(3,706) = 1.95$ ,  $p = .12$ , and support for policy,  $F(3,706) = 1.89$ ,  $p = .13$ , between regions
- Statistically significant difference between regions for perceived severity,  $F(3,706) = 3.48$ ,  $p < .05$ , Largest Root = .02,  $\eta^2 = .02$
- Post hoc analysis using Bonferroni comparison revealed a significant difference ( $p < .05$ ) between the Northeast ( $M = 3.60$ ,  $SD = 1.21$ ) and the Midwest ( $M = 3.26$ ,  $SD = 1.30$ )



## Implications

Rural residents reported neutral beliefs on climate change and near-neutral support for climate change policies, with similarly held beliefs across regions, suggesting consistent social norms across regions.

Higher scores in the Northeast for perceived severity could be influenced by regional social norms that prioritize recognizing the impacts of climate change, potentially an increased focus on sustainability and environmental protection or the recognition of severe weather impacts on agriculturally dependent regions.

## Abstract & References

