



A Quantitative Survey Investigating Rural Residents' Trust in Science

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Background

In recent years science has gained greater trust with urban populations while rural counterparts remain skeptical (Krause, 2019). Many crises, such as COVID-19, climate change, water quality, and obesity, not only require scientific knowledge to understand but also affect rural communities disproportionately (Mueller et al., 2021). Trust in science can influence how people respond to and embrace or reject scientific discoveries (Nadelson et al., 2014).

Conceptual Framework

The conceptual framework was trust in science. Nadelson et al. (2014) developed a scale to measure trust in science and scientists in an effort to quantify this construct.

Purpose

This study aimed to develop a better understanding of rural and non-rural Americans related to trust in science during the COVID-19 pandemic.

Reference

Krause, N. M., Brossard, D., Scheufele, D. A., Xenos, M. A., Franke, K. (2019). Trends—Americans' trust in science and scientists. *Public Opinion Quarterly*, 83(4), 817–836, <https://doi.org/10.1093/poq/nfz041>

Mueller, J. T., McConnell, K., Burow, P. B., Pofahl, K., Merdjanoff, A. A., & Farrell, J. (2021). Impacts of the COVID-19 pandemic on rural America. *Proceedings of the National Academy of Sciences*, 118(1) 2019378118; <https://doi.org/10.1073/pnas.2019378118>

Nadelson, Louis & Jorcyk, Cheryl & Yang, Dazhi & Smith, Mary & Matson, Sam & Cornell, Kenneth & Husting, Ginna. (2014). I just don't trust them: The development and validation of an assessment instrument to measure trust in science and scientists. *School Science and Mathematics*. <https://doi.org/10.1111/ssm.12051>

Methods

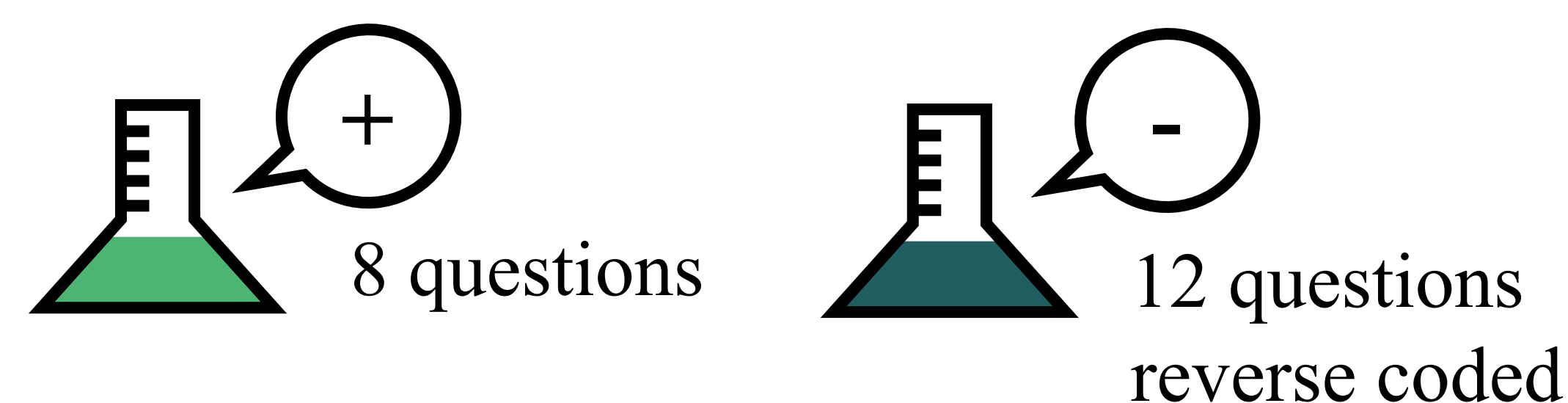
- **Participants:** 1,549 Americans



- **Data collection:** January 8 - 21, 2021

- **Trust scale of Nadelson et al. (2014):**

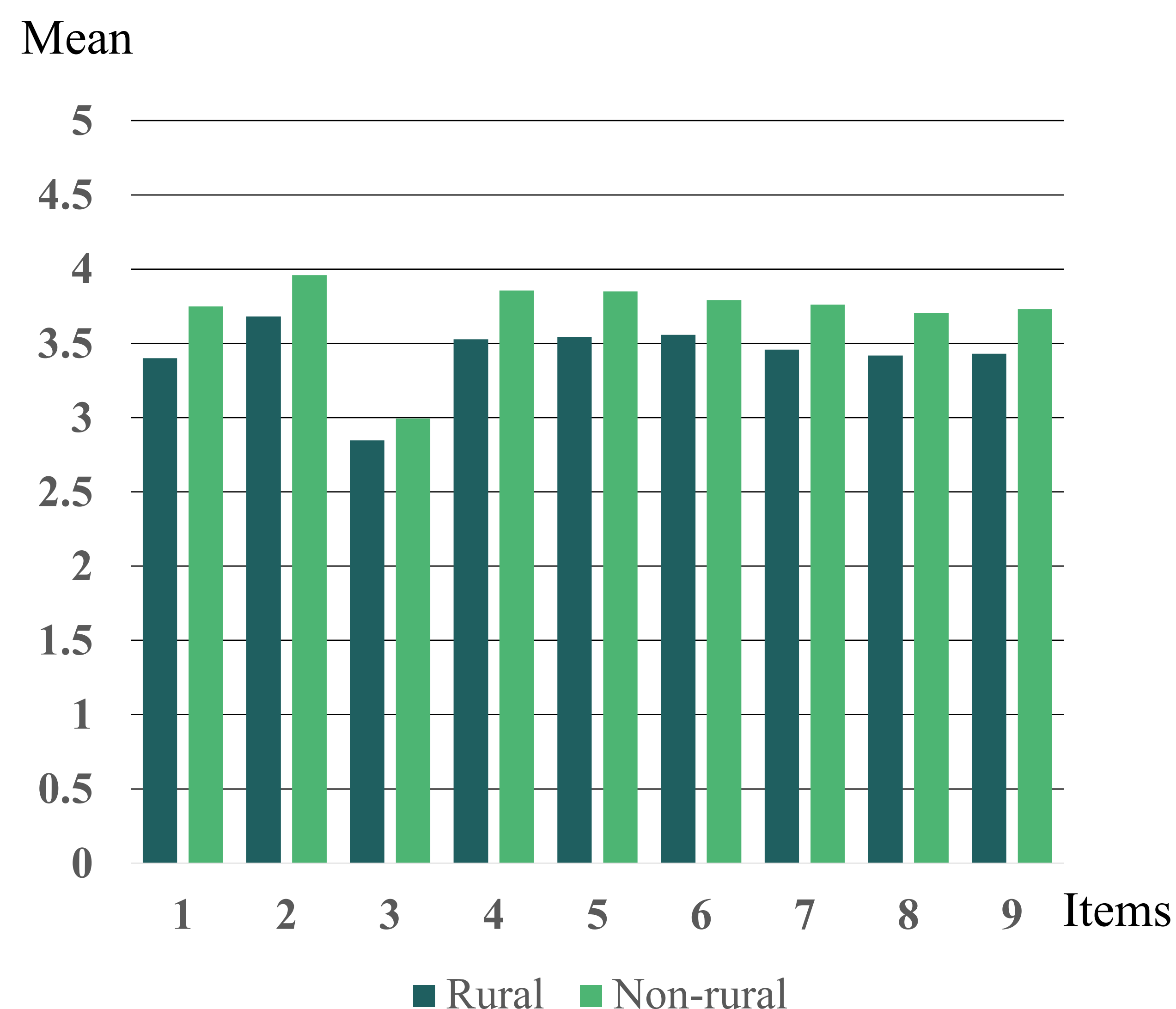
$\alpha = .92, M = 3.34, SD = .72$



- **5-point Likert scale:** Ranging from 1 = strongly disagree to 5 = strongly agree.

Results

Rural Americans tend to have lower trust in science and scientists than non-rural.



Rural and non-rural Americans trust in science scale

	MD	p
1. I trust scientists to share their discoveries even if they do not like their findings.	-.35	.00
2. I trust that the work of scientists makes life better for people.	-.28	.00
3. Scientists do not care if laypersons understand their work.*	-.15	.04
4. I trust the work of scientists.	-.33	.00
5. I trust that scientists are being honest in their work.	-.31	.00
6. I trust that scientists are being ethical in their work.	-.23	.00
7. Scientific theories are trustworthy.	-.30	.00
8. We can trust science to find the answers that explain the natural world.	-.28	.00
9. I trust scientists can find solutions to our major technological problems.	-.30	.00

* = reverse coded item

MD = Mean differences between rural and non-rural residents, calculate with the value after reverse.

Future Development

Exploring how rural Americans' trust in affect their attitudes and behavioral intentions toward vaccination.

