

BMF CP52: Water reuse willingness, climate change perception, and awareness of water scarcity

AISDL Team

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“Nightingale feeds himself sumptuously, gets thirsty, then goes inside the cage. Just when he is drinking the water, the door shuts down. A once-free bird is now a prisoner.”

– In “Dream”; [The Kingfisher Story Collection](#) [1].

1. Project description

1.1. Main objectives

The current study has two objectives:

1. To examine whether the residents’ perceived impact of climate change on water supply affects their direct and indirect potable water reuse willingness in Albuquerque, New Mexico.
2. To examine whether the residents’ awareness of water scarcity issues in New Mexico moderates the relationship between the perceived impact of climate change on water supply and potable water reuse willingness.

Findings from this study are expected to contribute to promoting the eco-surplus culture for achieving the environmental [semiconducting principle](#) [2].

1.2. Materials

The mindsponge theory will be used for conceptual development, and Bayesian

Mindsponge Framework (BMF) analytics will be used for statistical analysis on a dataset of [1831 water utility residential account holders](#) in Albuquerque, New Mexico, USA [3]. The *bayesvl* R package, aided by the [Markov chain Monte Carlo](#) (MCMC) algorithm, will be employed for [statistical analyses](#) [2,4]. For more information on BMF analytics, portal users can refer to [2]. Data and code snippets of this initial analysis were deposited at <https://osf.io/2ezxd/>.

1.3. Main findings

The analysis shows that for residents with no or low awareness (i.e., slightly aware of the issue) of the water scarcity issues in New Mexico, the perceived impact of climate change on water supply does not affect or slightly reduce the willingness level to utilize directly and indirectly reused water. On the contrary, residents with high awareness (i.e., moderately, very, or extremely aware of the issue) tend to be more willing to utilize directly and indirectly reused water when they perceive climate change to affect water supply (see, e.g., Fig. 1).

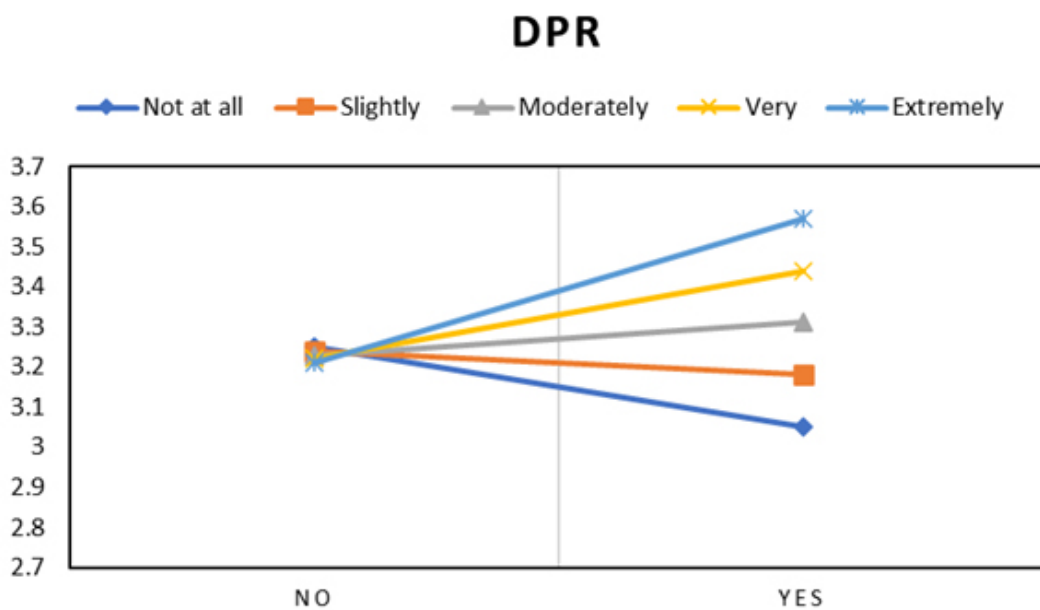


Figure 1. Estimated willingness level to utilize directly reused water

2. Collaboration procedure

Portal users should follow these steps for registering to participate in this research project:

1. Create an account on the website (preferably using an institution email).
2. Comment your name, affiliation, and your desired role in the project below this post.
3. Patiently wait for the formal agreement on the project from the AISDL mentor.

If you have further inquiries, please contact us at aisdl_team@mindsponge.info

If you have been invited to join the project by an AISDL member, you are still encouraged to follow the above formal steps.

All the resources for conducting and writing the research manuscript will be distributed upon project participation.

AISDL mentor for this project: **Minh-Hoang Nguyen**.

AISDL members who have joined this project: Quan-Hoang Vuong.

**Implementation: The research project strictly adheres to scientific integrity standards, including authorship rights and obligations, without incurring an economic burden at participants' expenses.*

References

- [1] Vuong QH. (2022). *The Kingfisher Story Collection*. <https://www.amazon.com/dp/B0BG2NNHY6>
- [2] Nguyen MH, Jones TE. (2022). [Building eco-surplus culture among urban residents as a novel strategy to improve finance for conservation in protected areas](#). *Humanities and Social Sciences Communications*, 9, 426.
- [3] Distler LN, Scruggs CE. (2020). [Survey data on perceptions of water scarcity and potable reuse from water utility customers in Albuquerque, New Mexico](#). *Data in Brief*, 29, 105289.
- [4] La VP, Vuong QH. (2019). [bayesvl: Visually Learning the Graphical Structure of Bayesian Networks and Performing MCMC with 'Stan'](#). *The Comprehensive R Archive Network*.

