

BMF Collaborative Project 7: Investigation into the non-linear effects of threat perception and trust behind recycled water acceptance

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Highlight:

- The AISDL team discloses the pre-peer-reviewed results of a research project exploring the non-linear effects of threat perception and trust on recycled water acceptance.
- The research project was contributed by six authors.
- The project's outcome has been sent to the academic journal for peer review.
- The preprint of the research outcome can be found at the following URL: <https://osf.io/rcdy5>

More details of collaborative projects are available here: <https://mindsponge.info/posts/39>

1. Project description

1.1. Background

The water scarcity crisis is increasingly severe globally due to more frequent prolonged and extended droughts induced by climate change, unprecedented population growth, and rapid economic development resulting in increased water supply needs. Human anthropogenic activities, such as deforestation and depletion of environmental resources,

have seriously reduced the quantity and quality of naturally available water sources.

The use of recycled water is real and present in many parts of our planet. It raises extensive concern from multiple stakeholders, especially the public community – the end user of water [1], indicating an urgent need for alternative water sources. This issue leads to existing local, national and international calls for effective measures to reduce pressure on water demand (e.g., daily water consumption) and water suppliers. Out of potential alternative water sources, e.g., stormwater, greywater, seawater and wastewater, recycling wastewater seems to be a cost-effective and environmentally friendly solution, thanks to scientific and technological development [2,3].

Despite recycled wastewater's feasibility and positive effects, its acceptance by the public community is still limited because the public queries about the health-related quality of reclaimed water and trusts in the clarity of information related to water recycling. Previous studies suggest threat perception and trust towards provided information have positive linear relationships with recycled water acceptance.

1.2. Project objectives

From the psychological perspective, recycled water acceptance can be deemed an outcome of a mental process in which trust plays as a “gatekeeper” that allows the absorption of trusted information related to recycled water and exclude distrusted information [4-6]. Therefore, the effects of perceptions of recycled water, including the threat perception, on recycled water acceptance are conditional on the trust status. Due to this property of the trust, we argue that the effects of threat perception of water shortage and trust in the provided information may have non-linear relationships with recycled water acceptance.

The current research project aims to employ the mindsponge theory to rationalize the argument and Bayesian inference to validate it empirically [7-9].

1.3. Materials and Methods

The research project employed a dataset of 726 residents in two Spanish regions with opposite levels of water scarcity: Galicia and Murcia [10]. The dataset was collected through email between October 2 and 23, 2019, by a market research firm and employed by Vila-Tojo et al. [11] to examine the reasons for public acceptance or rejection of recycled water using a perceptive-axiological model.

The research project followed the Bayesian Mindsponge Framework (BMF) [12,13]. For more information on BMF analytics, portal users can refer to the following book [9]. The bayesvl R

package will be employed for statistical analyses [14,15].

1.4. Main findings

Figure 1 presents the residents' recycled water usage acceptance level concerning the concern of water shortage and trust towards recycled water. More details of the results are available at the following URL: <https://osf.io/rcdy5>

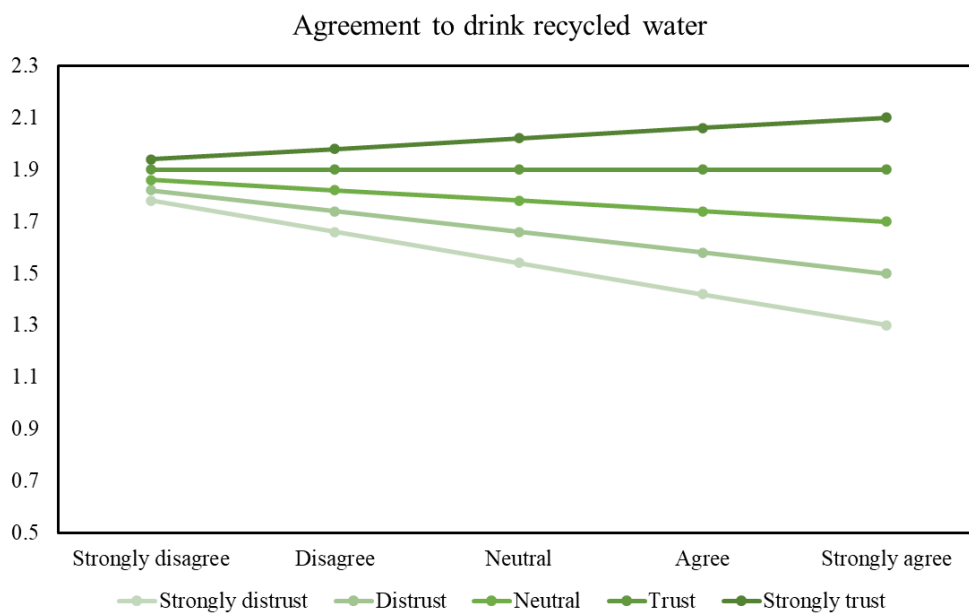


Figure 1. Recycled water usage acceptance concerning the concern of water shortage and trust towards the recycled water

Figure 1's results show that threat perception due to water shortage positively impacts the recycled water acceptance for drinking only in scenarios where the residents trust the safety and quality of water. If the residents have low trust in the water safety and quality, the threat perception adversely affects the recycled water acceptance.

2. Collaboration Details

2.1. Current Collaboration Stage: Finalizing and submission stage

2.2. Registration Period: Closed

2.3. Registration Guidelines: Portal users should follow these steps to register to participate in this research project:

1. Create an account on the website (preferably using an institution email)
2. Read carefully and select the author order that you want to become. Each project

consists of a certain number of authors, and each author order in the manuscript corresponds to specific tasks of which the participant will be in charge.

3. Comment your desired author order and your current affiliation in the collaborative project post.
4. Patiently wait for the formal agreement on the project from the AISDL mentor.

All the resources for conducting and writing the research manuscript will be distributed after the registration stage ends.

2.4. Number of Participants: This project has seven participants.

2.5. AISDL Mentor

- Name: Minh-Hoang Nguyen
- Affiliation: Centre for Interdisciplinary Social Research, Phenikaa University, Vietnam
- Contacting email: aisdl_team@mindsponge.info

2.6. Project Participants and Authorship

First author (project leader)

- Name: Minh-Hoang Nguyen
- Affiliation: 1) Centre for Interdisciplinary Social Research, Phenikaa University, Vietnam; 2) Graduate School of Asia Pacific Studies, Ritsumeikan Asia Pacific University, Japan.
- Roles: being responsible for finalizing the project, being responsive throughout the project, validating the manuscript, assigning tasks, keeping track, supporting and guiding other participants, and editing the manuscript.

Second author

- Name: Phuong Thi Nguyen
- Affiliation: Centre for Crop Systems Analysis, Wageningen University, P.O. Box 430, 6700 AK Wageningen, The Netherlands
- Registering/invited time: October 19, 2022
- Roles: conducting a literature review, writing the manuscript, and revising the manuscript during the peer-review process.

Third author

- Name: Hong-Son Nguyen
- Affiliation: Office of CPV Central Committee, Hanoi, Vietnam
- Registering/invited time: October 20, 2022
- Roles: describing results, writing the manuscript, and revising the manuscript during the peer-review process.

Fourth author

- Name: Viet-Phuong La
- Affiliation: Centre for Interdisciplinary Social Research, Phenikaa University, Vietnam
- Registering/invited time: September 02, 2022
- Roles: describing methods and materials, writing the manuscript, and revising the manuscript during the peer-review process.

Fifth author

- Name: Tam-Tri Le
- Affiliation: Centre for Interdisciplinary Social Research, Phenikaa University, Vietnam
- Registering/invited time: September 02, 2022
- Roles: describing methods and materials, discussing results, submitting the manuscript, revising the manuscript during the peer-review process, and responding to reviewers' comments.

Last author

- Name: Quan-Hoang Vuong
- Affiliation: Centre for Interdisciplinary Social Research, Phenikaa University, Vietnam
- Registering/invited time: September 02, 2022
- Roles: conceptualizing the study, validating the manuscript, editing the manuscript, and revising the manuscript during the peer-review process.

The research project strictly adheres to scientific integrity standards, including authorship rights and obligations. If the portal users have any further inquiries, please get in touch with the AISDL in charge of the project.

****Editorial note***: This CP was initiated and promoted by:



Minh-Hoang Nguyen

<https://www.scopus.com/authid/detail.uri?authorId=57205713877>

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