“It’s mine, so I am using it!”

Psychological Ownership, RANAS-Factors and Behaviour Change Interventions

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I. Background

- Millions of people drink unsafe water, e.g. arsenic contaminated water. They are at risk from severe health effects: skin lesions, cardiovascular diseases, cancer, social & mental health effects (Brinkel, Khan, & Kraemer, 2009)

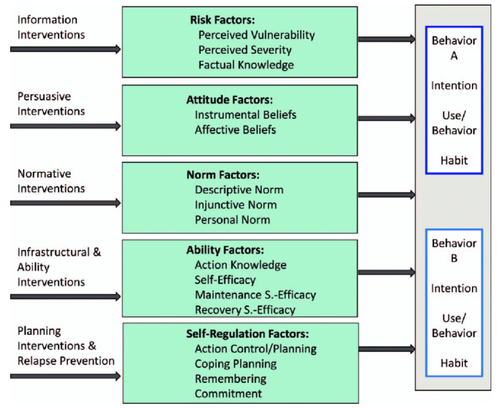
- SDG 6.1 aims at providing safe and affordable drinking water for all.
- In Bihar, community-based arsenic filtration units with piped water distribution are installed by the Public Health and Engineering Department of the State of Bihar:

- However, new safe water infrastructure is often not accepted, maintained or used in the long-term (Kabir, & Howard, 2007).

II. Psychological ownership & Habit

- Psychological ownership = the state wherein a person feels as though an object is his or hers without necessarily owning it legally (Pierce, Kostova, & Dirks, 2003).
- Routes, how psychological ownership can be induced, are proposed in the context of organizational psychology (Pierce, Kostova, & Dierks, 2003).
- Previous studies suggest importance of psychological ownership of water-schemes for… :
  - sustainability (Marks, Onda, & Davis, 2013).
  - regular use (Contzen, & Marks, 2018).
- Habit is a way to execute behaviour without having to use cognitive resources (Gardner, Lally, & Wardle, 2012).

III. RANAS model of behaviour



- The RANAS model of behaviour (Mosler, 2012) defines five factor-blocks (risks, attitudes, norms, abilities & self-regulation) that determine behaviour in genereal.
- By systematically ask questions about these factors, it can be determined which factors are key for a specific behaviour.
- The RANAS approach is also used to systematically design and evaluate behaviour change strategies for habit.

IV. Methods

Data collection:

- Face-to-face interviews performing a structured questionnaire with users & non-users of functional community-based water systems.
- Visual answering scale (5-point Likert scale):

Data Analysis (*N*=328):

- Missing data replaced by multiple imputations (n=5).
- Psychological ownership:
  - Multiple linear regressions for routes.
  - Singular linear/logistic regressions for consequences.
- Water collection behaviour:
  - Multiple logistic regressions to determine RANAS-factors associated.

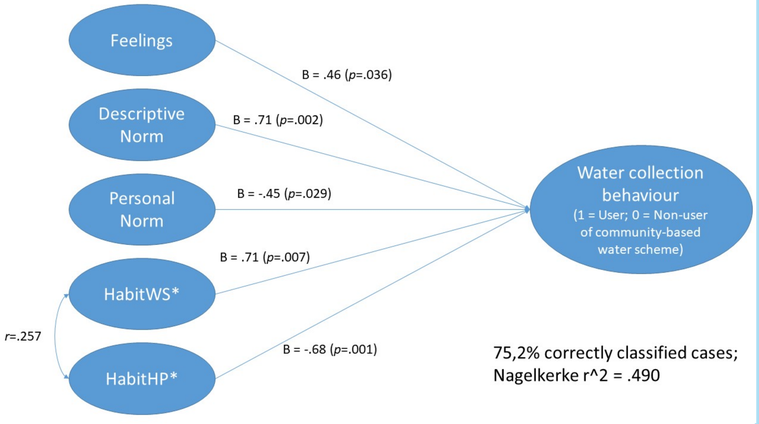
RESEARCH QUESTIONS

(1) What are routes and consequences of psychological ownership for safe drinking water systems?

(2) Does habit increase the likelihood of using the community water-scheme?

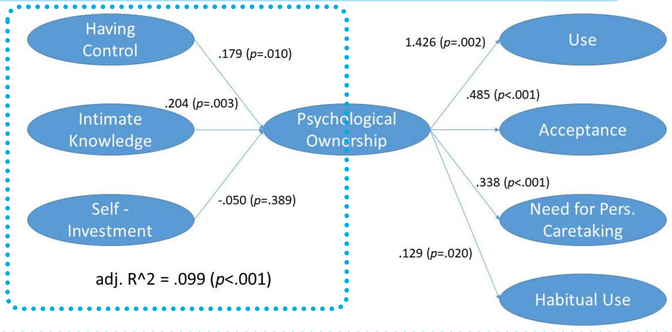
(3) Which RANAS-factors are correlated water collection behaviour at the community water-scheme?

V. Habit & RANAS-factors correlated to safe drinking water-collection



* HabitWS (habit of water collection behaviour at water scheme) and Habit HP (habit of water collection behaviour at handpump) are measured with Self-Reported Habit-Strength Index (Verplanken & Orbell, 2003).

VI. Routes & Consequences of Psychological Ownership



- **Having control over and intimately knowing the water scheme is associated with a significantly greater psychological ownership over the target.**
- Persons with one unit higher psychological ownership are 1.426x more likely to use the water scheme, compared to those with one unit lower. «Use» is measured as binary variable: (1 = User; 0 = Non-user of water scheme).
- Psychological Ownership is significantly related to bigger acceptance, higher willingness for caretaking and more habitual use of the water scheme

Scale	# Items	*M*	*SD*	Cronbach α	Item (e.g.)
Having Control	10	2.40	0.83	0.73	I cannot influence what happens with the water scheme.
Intimate Knowledge	5	2.37	0.95	0.67	I know who is responsible for the water scheme if there are any troubles.
Self-Investment	3	1.90	1.18	0.60	Without my contribution, the water scheme would not exist.
Psychological Ownership	5	3.27	1.02	0.83	I sense that this is my water scheme.
Use	1	-	-	-	Are you user or non-user of the community water-scheme?
Acceptance	1	3.05	1.41	-	I accept the water scheme as my water scheme.
Need for Personal Caretaking	1	3.08	1.51	-	I feel the duty to personally take care of the water system.
Habitual Use	12	2.84	1.05	0.90	Collecting water for drinking and cooking purpose at the water system is something I do without having to remember actively.

VII. Conclusions & further research

- Having control, and intimately knowing the safe water option were related to greater psychological ownership for the water option. In turn, self-investment was unrelated to psychological ownership.
- Psychological Ownership is also associated with an increased habitual use of health related infrastructure (here: safe drinking water supply).
- Habit is associated with an increased use of health related infrastructure (here: safe drinking water supply).
- For sustainable behaviour change in safe drinking water collection, to focus on Psychological Ownership and habit could be key.
- Other factors are also important to consider in changing water collection behaviour (e.g. descriptive norm and feelings).
- We are about to implement interventions (targeting the routes to psychological ownership as a concept specifically for health-related infrastructure and habit interventions) in a C-RCT in Bhagalpur (India).

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