Water behaviour modelling for efficient ICT-based water management in urban environments.

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Key Facts and Research Gap

- Growing water scarcity issues
- Information and education about water conservation needed.
- Behavioural changes necessary to encourage more sustainable uses of water resources.
- Use of smart meters and in-home displays

Overarching Research Questions

1. What are water users’ current perceptions of their consumption and level of preparedness and motivation for behavioural change?
2. How effective is a near real-time user-oriented water feedback system (in-home display) in increasing people’s awareness of their consumption?
3. What are the most effective behavioural strategies in encouraging sustainable water consuming habits?

Methodology

Two online questionnaires:
- (1) 10 questions (part of the “Ask Cardiff” survey). About 2000 responses obtained.
- (2) 40 questions (Part of the WISDOM Project). About 180 responses collected.

Implementation of smart meters and displays:
- Interviews conducted within selected households before and after.
- Questionnaire sent mid-phase to reengage participants.
- Statistical analysis using SPSS.

Trial Phase Groups

- Control Sample
  - Smart meters
  - No Intervention
- Group 1
  - Smart meters
  - Considerable Intervention
- Group 1
  - Smart meters
  - Limited Intervention

Outputs

Current results: Questionnaires
Concerns about water conservation issues but economic limits preventing participants from achieving appropriate water savings.

Future actions: Trial Phase
Determining the most effective behavioural strategies:
- Social strategies?
- Economic measures?
- Environmental features?
- Water game?

Evaluating the impact of an informative in-home display on people’s awareness of their water consumption

Comparing households’ water usage before and after the trial