

Introduction

- Spillover is an observable and causal effect that a change in one behavior has on a different, subsequent behavior¹.
- In this project, we propose a research methodology for studying spillovers from behavioral interventions for food, energy, and water (FEW) consumption of residential households

Background

- FEW related sectors account for majority of GHG emissions and climate change²
- Resource conservation is generally considered one of the lowest cost options for environmental sustainability
- Intervention messages are being increasingly relied on to influence consumer behavior³.
- Current literature on pro-environmental behavioral spillover is inconclusive, inconsistent, and still evolving⁴
- Spillover effects broadly categorized as positive or negative spillover⁵

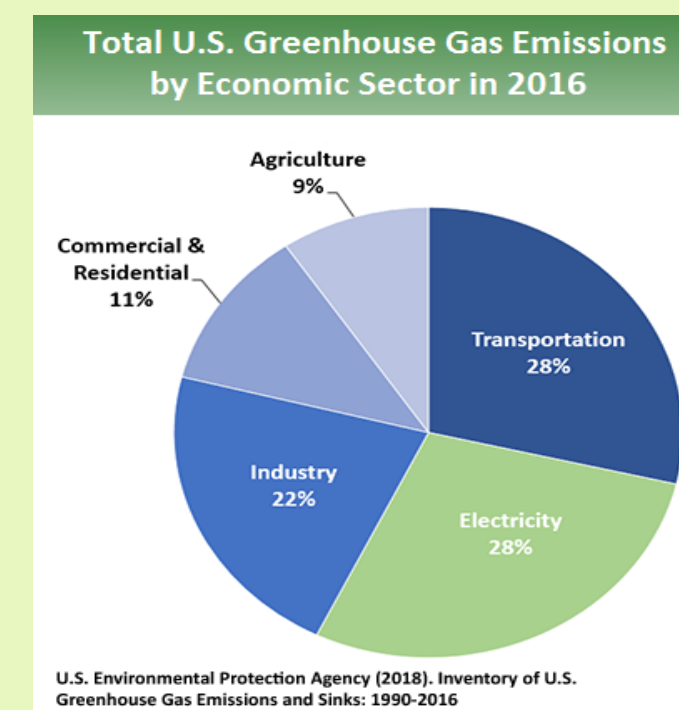


Fig.1- Total GHG emissions by Sectors (Source-US EPA,2018)

Hypothesis

- How do behavioral intervention messages for conserving food, water, and energy to residential households impact their individual and overall consumption over time?

Possible Spillovers FEW Conservation

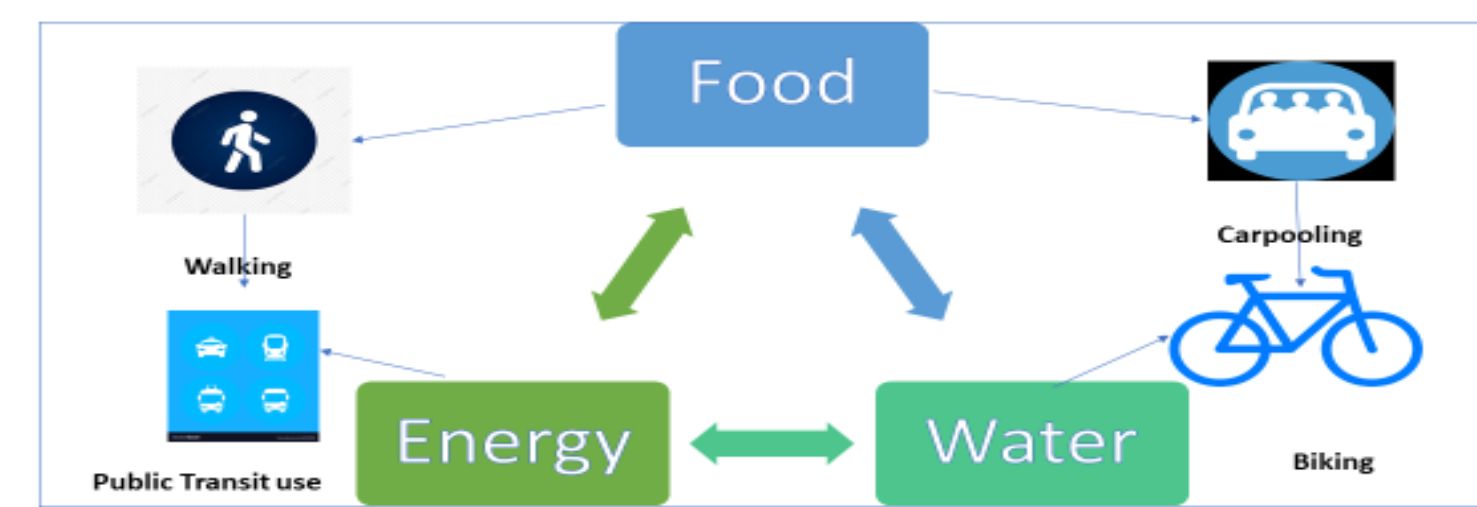


Fig.2- Illustrative flow diagram of FEW interconnections and possible spillovers

- Is there a significant difference in relative impacts of messages based on individual over community benefits?
- Do these behavioral interventions for FEW conservation affect other pro-environmental behaviors?

Policy Implications

- We also propose to look at policy question of willingness to pay extra amount for integrating renewable energy sources through self reported responses.

Methods

- Randomized control trial on a sample of about 300 residential households.
- Outcome Variables- Estimated GHG emissions from utility's monthly water and electricity consumption, as well as intermittent monitoring of GHG emissions from food.
- Estimated GHG emission from food consumption assessed from online software portal "Hometracker" being developed as a part of this project.

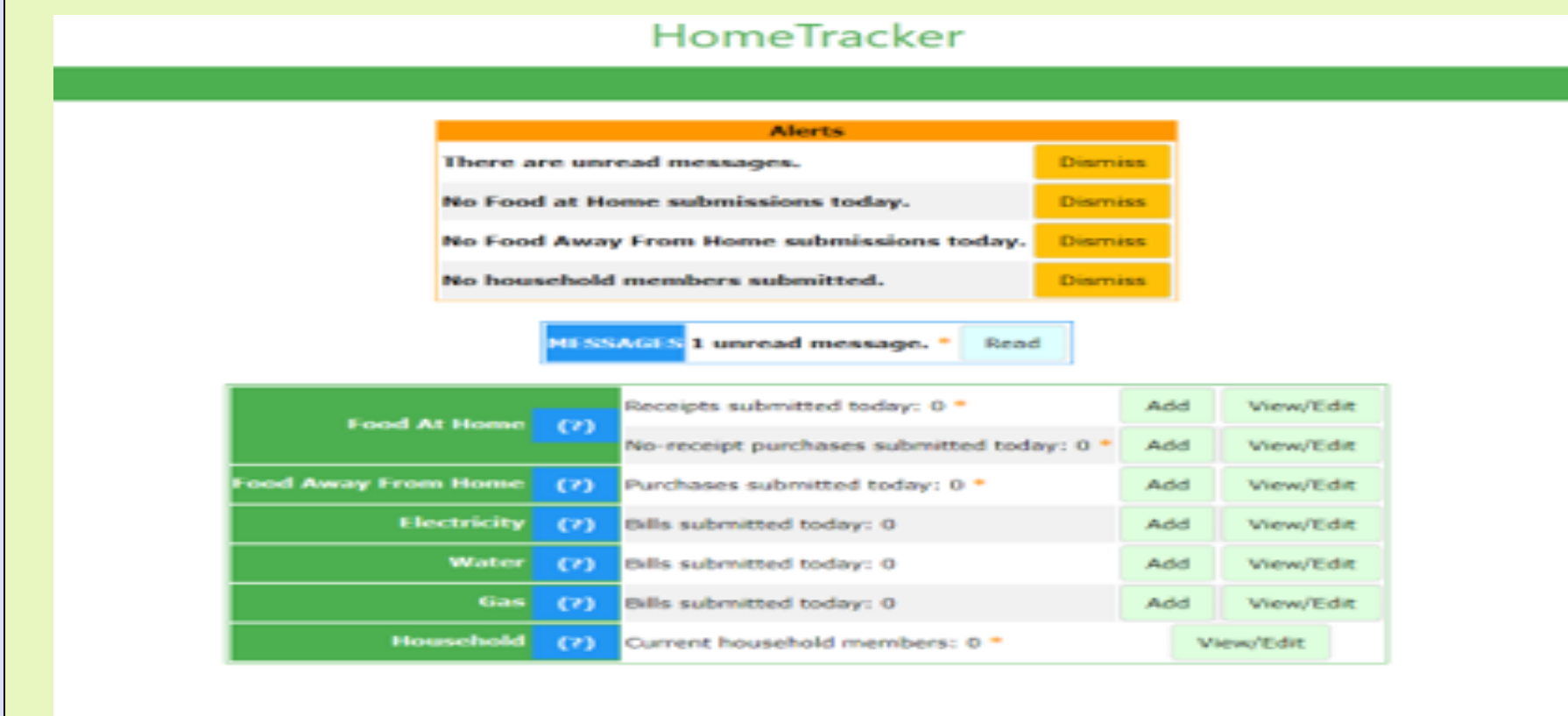


Fig.3- Snapshot of the online software "Hometracker"

Group 1: Control Group (n=100) receives baseline information about their energy, food and water use

Group 2: Individual Impact (n=100) receives baseline information + customized information about high GHG impacts of FEW consumption + possible individual benefits of FEW conservation

Group 3: Collective Impact (n=100) receives baseline information + customized information about high GHG actions in food or energy consumption + possible collective benefits of FEW conservation

Discussion

- Monitoring any one resource domain will not capture changes or patterns developed within other domains.⁶
- Overlooking spillovers may result in biased and over- or underestimates of impact.⁷
- Useful to study dynamic Interactions within and across FEW domains from a systems perspective.
- Observations over time needed for assessing persistence of behavioral changes over time.
- Evaluation of lifecycle assessment of net food, energy, and water consumption important from policy perspective.

References

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