Analyzing incentives in adoption-opinion models

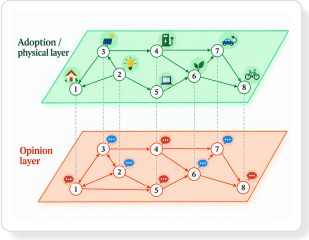
M.Sc. Thesis

Keywords sustainable transition, opinion dynamics, technology adoption, targeted intervention

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Thesis To facilitate the transition to a sustainable society, it is important that individuals and communities adopt new technologies and behaviors. However, typically there is a limited budget available, so these incentives should be allocated in order to maximize their impact.

In previous work we studied a coupled adoption-opinion model with two interacting layers. The first layer captures the adoption process and is inspired by epidemics models: individuals may adopt or abandon a technology or behavior over time. The second layer is an opinion layer that describes the evolution of opinions, which influence the propensity to adopt. Your peers' opinions and adoption behavior can influence your own opinion and vice versa.



In recent work, we studied how we can model and design incentives for the opinion layer, also considering the trust each individual has in the external entity providing these incentives. We want to combine this with the behavior-adoption model and calibrate the model with real-world data.

M.Sc. Thesis Outline

1. Literature study on the underlying models.
2. Combine the adoption-opinion model with our new incentive model and study the targeting problem.
3. Validate the model with real-world adoption data.