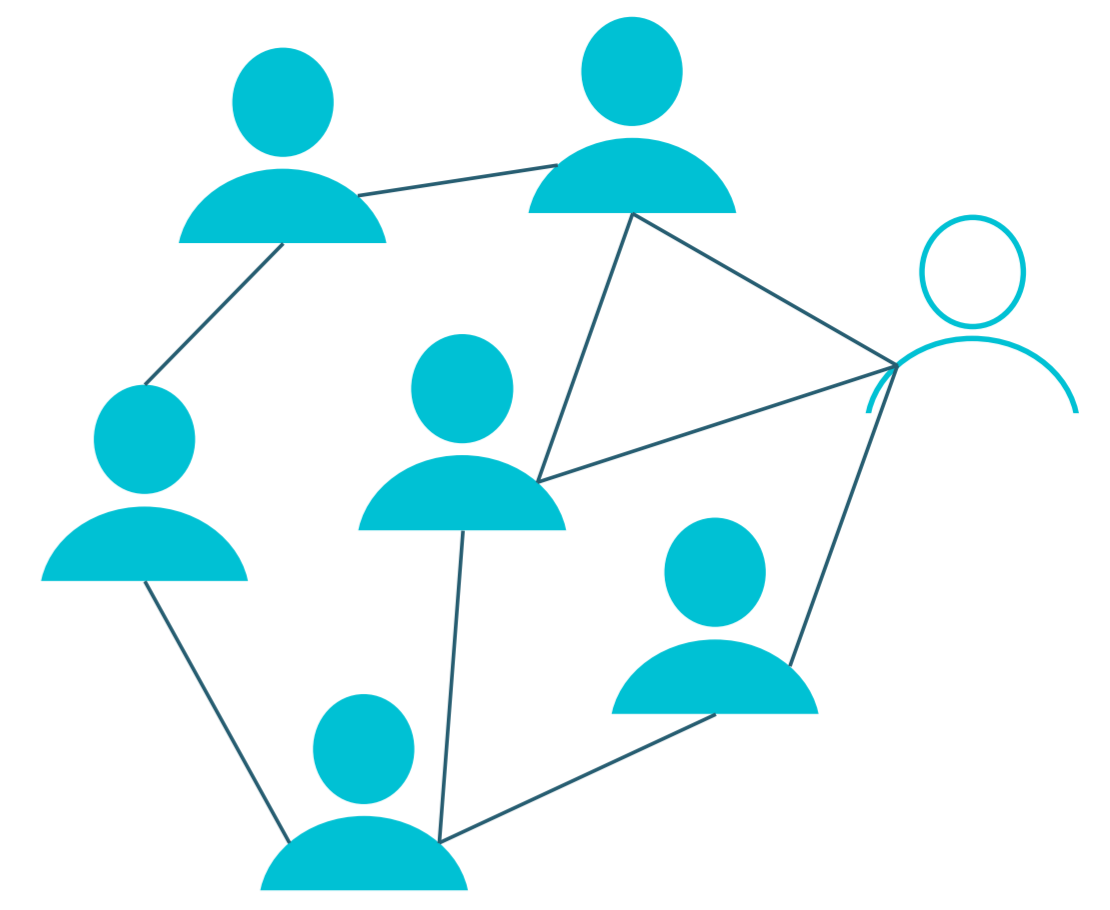


Social Sustainability – S³ Simulation



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Alexandra Eckert, Leon Grothmann, Matthias Meyer, Christian Stindt
Hamburg University of Technology
Institute of Management Accounting and Simulation

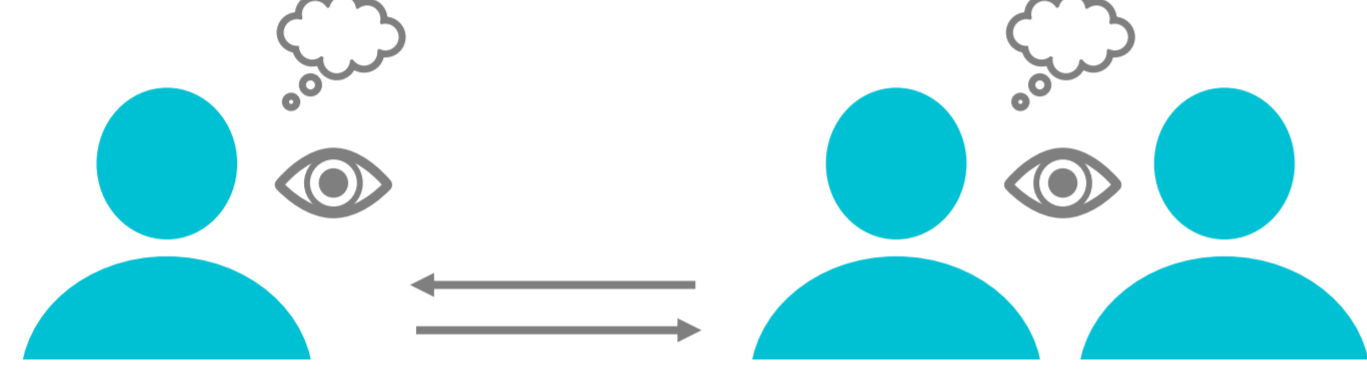
Motivation

The Sustainability Challenge

Sustainability is one of the greatest challenges of our time. Despite technological advances, human behavior often remains unsustainable, even when acting sustainably would be more beneficial in the long run.

The Power of Social Norms

Research shows that human behavior is strongly influenced by social norms – unwritten rules that define acceptable conduct within groups (Bicchieri, 2006). Such norms shape actions through role models (Bicchieri & Funcke, 2018), peer pressure, social learning, sanctions, and expectations (Bicchieri, 2006; Cialdini & Goldstein, 2004).



Examples of leveraging social norms to promote sustainability:

- reducing energy consumption up to 1.72 kWh per day (Schultz et al., 2007)
- up to 9 times less littering (Cialdini et al., 1990)
- 9 percentage points higher reuse rate of towels (Goldstein et al., 2008)

Objective

Bridging Simulation and Social Dynamics

- Develop an immersive 'virtual laboratory' (Barton et al., 2022) that simulates social dynamics to promote sustainable behavior.
- Identify and visualize tipping points (Granovetter, 1978) for social norm-driven behavior change.
- Provide decision-makers with practical insights for effective sustainability strategies.
- Establish a scalable framework applicable to various sustainability contexts, from energy conservation to waste reduction.

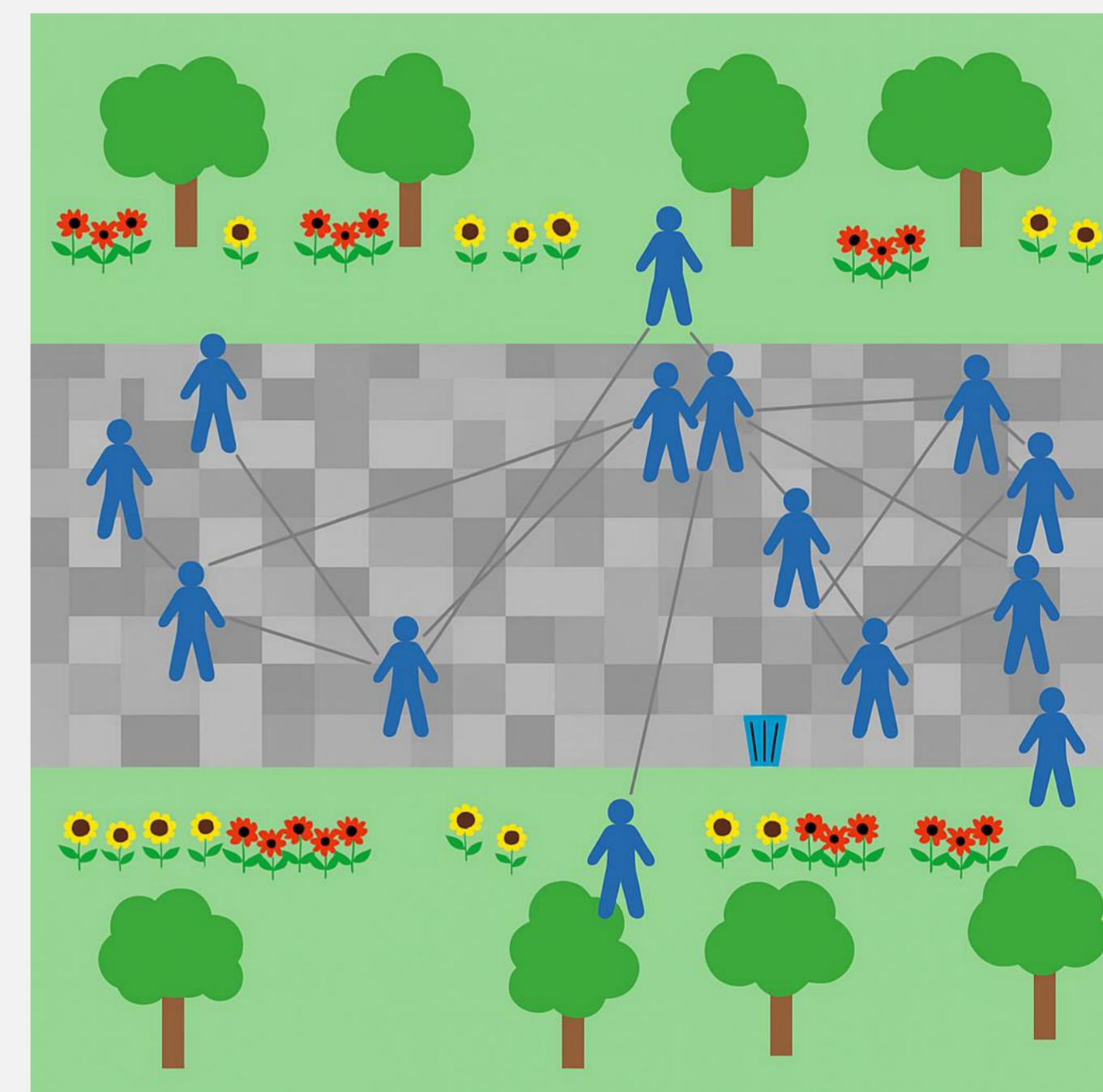
Contribution

- Increased awareness of the critical role of social norms in promoting sustainability
- Evidence-based insights into effective behavior change strategies
- Practical recommendations for policymakers to enhance sustainable practices at scale
- A flexible, scalable framework that can be adapted to different sustainability goals and sectors
- Enhanced understanding of how social networks can drive collective environmental impact



Method

We are creating an immersive 'virtual lab' designed for workshops, online formats, and training sessions. This lab will use interactive computer simulations to demonstrate how group dynamics and social norms influence behavior. Participants can provide anonymous inputs regarding their preferences and behaviors, which are integrated into real-time simulations. This approach allows for immediate feedback on how individual actions impact group behavior, revealing the conditions under which sustainable practices can become the norm. The virtual lab also explores the impact of network effects, helping participants understand the complexity of social influence on sustainable actions.



Exemplary simulation for the analysis of littering (Eckert et al., 2025)

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