# Conceptual Model Description

## Model 1 Title

Neighborhood Dynamics on a Lattice

## Problem Context

Agents are situated in a structured lattice environment where their interaction is limited to a defined number of neighbors. The decisions of agents to stay or relocate are influenced by their social satisfaction and the composition of their neighborhood.

## Model Description

This model simulates agents interacting within a lattice grid where each agent is influenced by the types of neighboring agents. Each agent evaluates their satisfaction based on the proportions of neighbor types and their preferences for homogeneity.

## Social Theories And Agent Rules

Social Identity Theory informs how individuals evaluate their social groups based on neighbor types, affecting their satisfaction levels. Bounded Rationality suggests that agents make decisions based on limited information regarding their neighbors' types and their individual thresholds for relocating. The Theory of Homophily posits that agents prefer to associate with similar neighbors, influencing their decision-making about remaining in or leaving a neighborhood.

## Action Rules

Agents assess their immediate environment by evaluating the composition of their neighbors and their current satisfaction levels. If an agent's satisfaction falls below a specified threshold due to a disproportionate number of less-preferred neighbor types, it will initiate a move to another neighborhood. The preference for neighborhood homogeneity will guide the direction of the move, favoring neighborhoods with a higher presence of preferred neighbor types.