# Introduction

# Conceptual model

# Formalization

**Variables of households**

Bin-satisfaction

* Manually set a satisfaction value *bin satisfaction* for each agent between [1, 5] for the timestep 0;
  + The number 1 is the lowest satisfaction level of an agent;
  + The number 5 is the highest satisfaction level of an agent;
* The satisfaction value will be influenced by the available bin-capacity at a specific time;
  + Available bin-capacity > amount of waste then satisfaction value of the agent + 1;
  + Available bin-capacity = amount of waste then satisfaction value of the agent + 0;
  + Available bin-capacity < amount of waste then satisfaction value of the agent - 1;

Available bin-capacity

* Manually set a value for the maximum bin-capacity;
* The available bin-capacity at timestep 0 is the maximum bin-capacity;
* The bin-capacity will be influenced by the amount of waste that each agent will drop at a specific time;

Amount of waste dropping by an agent at a specific time

* If the amount of the collected waste of an individual agent ≥ capacity of the agents’ individual bin then the agent will drop his waste;
* If the amount of the collected waste of an individual agent < capacity of the agents’ individual bin then the agent will not drop his waste;

The amount of the collected waste of an individual agent

* The amount of the collected waste of an agent at timestep 0 is equal to 0.
* The amount of the collected waste of an agent each timestep is influenced by the [some behaviour]
  + A number of +0, +1 or +2 each timestep

Recycle-perception

* The recycle-perception will be influenced by the bin-satisfaction;
* The recycle-perception will be influenced by the education-level;

Education-level

* Manually set an education-level value *education-level* for each agent between [1, 5] for the timestep 0;
  + The number 1 is the lowest education-level of an agent;
  + The number 5 is the highest education-level of an agent;
* The education-level will be influence by ….

**Variables of the general bin**

Composition of the waste of the general bin

* The composition of waste of the general bin depends on the collected waste of each agent;
* The amount of PMD in the general bin is the sum of the amount of PMD of each individual agent, who dropped in this specific general bin.
* The amount of organic-waste in the general bin is the sum of the amount of organic-waste of each individual agent, who dropped in this specific general bin.
* The amount of non-PMD in the general bin is the sum of the amount of non-PMD of each individual agent, who dropped in this specific general bin.

Composition of the waste of each agent:

* The collected waste of each agent has a specific composition of waste;
  + PMD
  + Organic
  + Non-PMD
* The specific composition of waste of each agent depends on the recycle-perception and on the education-level.

Time of

**Variables of the regional-bin**

Amount of waste of the regional-bin

* The amount of PMD in the regional-bin is the sum of the amount of PMD of each general bin in the region.
* The amount of organic-waste in the regional-bin is the sum of the amount of organic waste of each general bin in the region.
* The amount of non-PMD in the regional-bin is the sum of the amount of non-PMD of each general bin in the region.

Amount of general bins in the region

**Variables of the waste companies**

The

# Implementation

# Model assumptions

# Model verification

# Experiments

# Analysis

# Conclusions