Sociodynamica: Agents exploit and compete for resources and share resource 1 among them, according to the settings defined by the internal parameters and the external parameters. The agents may acquire renewable and non-renewable resources trough work; they may accumulate those resources and commercialize them. At the same time, agent may acquire knowledge trough education by spending work, or they might acquire it trough commerce.

The model is based on the principle that work may create surplus utility that might be converted into capital. The utilities are of 3 kinds: renewable, non-renewable and knowledge resources. The second principle is division of labor, where different agents specialize in accumulation and commerce of different utilities.

Global Parameters

POP: Number of agents (no)

GDP: Aggregate total wealth accumulated by all agents

Simulation logic

Each time step:
Do simulation loop
Matrix:

Eliminate variable types previously defined
Eliminate agents with wealth = 0 (par 11)
Increment age agent(i, 7) = agent(i, 7) + 1
Use of resource 1 and 2 agent(i,11)- BRC1; agent(i,12) – BRC2
Assessment of GDP GDP = GDP + agent(i, 11)
Show and Plot

HyperBD

Mutate variable: Changes the corresponding variable randomly before each run. When a parameter is mutated, it will remain constant in one simulation but change between runs, at a random value between the range indicated. Internal variables, when mutated, will assign to all agents the same value for that parameter. That is, no variance between agents will be simulated with mutated variables.

Hyper Simulation: Repeats simulations n times, recording the values of the variable to monitor

Mutsim 0 and 1 give different outputs (save if you change this parameter). 0 is for temporal dynamics and 1 for mutation analysis

View allows access to Excel to view the files saved by HyperBD

Save Produces a file with all the raw data of the simulation

Plot Shows the agents according to their accumulated resources indicated as the sqr of the number.
The high of the agent is proportional to the total wealth of minerals of the agent.
The with of the agent is proportional to the total food accumulated by the agent.
The color of the bubble depends of the type of agent as indicated at the left bottom of the screen
The thickness of the border is proportional to the perceived cost of living (Prize for food + Price for minerals).
The color of the border is more reddish or even yellow the higher the ratio MinPrice/FoodPrice. Blue borders indicates that food prices are higher than mineral prices.
Black bar at the bottom indicates a length of 100 pixel