

Study the Dynamic of Institutions Using Agent Based Modeling

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One of the ways for analyzing institutions and their changes is field study. Although it is a good way to understand how institutions are established, how they work and affect individual decision making, and how they change, ~~but~~ it may take several years to change ~~an~~ institutions and the related factors are ~~legion.very much.~~

Laboratory experiment is another way for researches to observe how institutions are formed and changed in one selected society at laboratory under certain situations. The experiments factors and conditions might be restricted and ~~the~~ desired change might not ~~be~~ happened in ~~a~~ limited time. Also volunteers may ~~be-would~~ not feel free under experimental situations to attitude and behave exactly like in reality.

Based on the nature of SETS and ~~especiall~~y institutions, direct test and observation in diverse situations ~~are is~~ not possible. Researchers use simulation as an alternative for both mentioned methods to model SETSs, analyze several policies, and make optimal decisions. Simulation is the process of creating a model in order to test, observe, and understanding the behaviour of a real system.

Agent Based Simulation and Modeling (ABM) is a suitable method to deal with complexity and ambiguity of social systems. In recent years, several models have been proposed using ABM to depict different aspects of socio-technical systems. Modeling multiple factors and parameters under different conditions without ~~being concern~~ed about time or ~~leosing~~ cost are ~~the~~ main advantages of using ABM.

The key benefits of ABM for studying and modeling institutions and their dynamicity are ~~as follows~~:

-each agent can have specific features, then individual choices and decisions can be modeled; creat~~inge~~ a natur~~ale~~ model of a system, interactions between agents, and effect of their actions on the system; representing ~~emerging emergent~~ patterns based on individuals' bottom-up actions and communications.