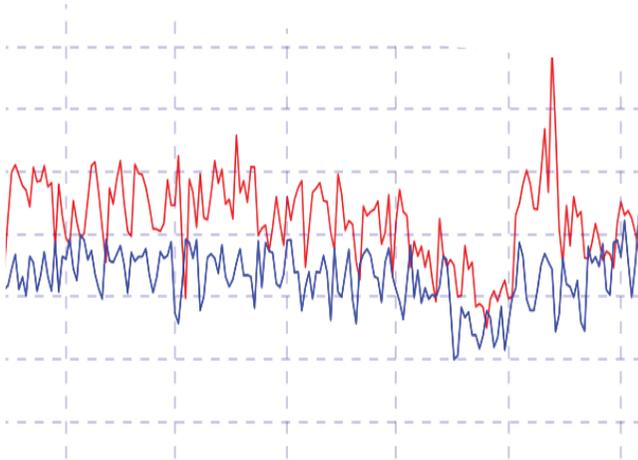


SIMULATIONS



"Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful."

- George Box

Simulations for policy

At Fields of View, we design bottom-up, exploratory simulations to make better policy.

Introduction

Models are representations of the real world. A simulation can be understood as a model in action over time. With advanced computing power at our disposal, simulations nowadays can crunch large quantities of different kinds of data, and therefore are a powerful tool to aid policymakers in decision-making.

Simulations at FoV

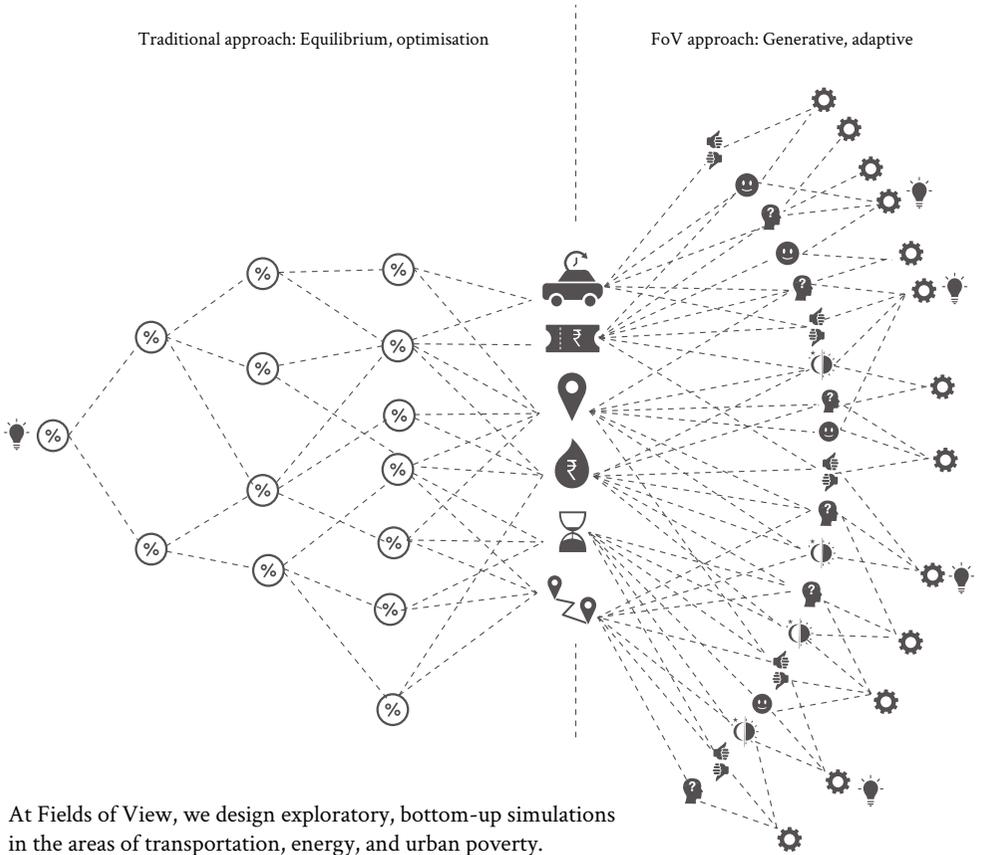
Traditionally, simulations model either the micro-level or the macro-level. For instance, transportation simulations usually model either bus stops, roads, etc (micro-level) or at the scale of national highways (macro-level). What is

required are simulations that operate in between these two levels, at the meso-level. Such meso-level simulations meld both macro and micro-level data. At FoV, we build meso-level simulations.

Moreover, the simulations at FoV are bottom-up, unlike traditional simulations. We model individual actors and their preferences. We elicit these preferences using our games. These preferences are intangible, unquantifiable data, which other simulations do not handle. Thus, in our simulations these individual actors or agents interact with each other and different scenarios emerge. Using these bottom-up simulations, which combine both tangible and intangible data, we generate multiple scenarios, which the policymakers can explore and choose from.

Traditional approach: Equilibrium, optimisation

FoV approach: Generative, adaptive



At Fields of View, we design exploratory, bottom-up simulations in the areas of transportation, energy, and urban poverty.

As an example, consider route planning for a public transportation systems in cities. Public transportation affects people from all walks of life. Presence of public transportation routes may spur growth in different parts of the city, adding to economic growth. It may also affect housing demand and prices. It may even spur people to service last mile passengers, thus creating a whole new market. The relationship between the passengers, the administrative institutions, the available resources and their delivery mechanisms has to be taken into account to plan a public transportation route. Through modelling and simulation, we explore the dynamics of interactions between the various sub-systems.

- Time of travel
- Cost of ticket
- Distance
- Fuel cost
- Waiting time
- Route
- Level of comfort
- Preference
- Reason for travel
- Time of the day
- Scenario generation
- Final outcome
- Optimisation