Social Simulation: The Need of Data-Driven Agent-Based Modelling Approach

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***Abstract*—Agent-based modeling and simulation (ABMS) has attracted social scientists and demographers in the field of social simulation. Due to large number of computer simulation technologies, ABMS approaches have been proposed with majority applications. ABMS composed of heterogeneous interacting agents, with several features which turn them into a significantly attractive modeling approach to simulate complex social systems. In this paper, first we explore the underlying social theories for ABMS, its simulation and modeling techniques, and computational frameworks. Second, our paper concentrate on the potential need of ABM techniques in the context of social simulation. An alternative ABM approach that is getting popularity is to inject data into agent-based simulation. To validate our model, we compare our results with actual-data. Our results closely matched with actual-data results in the case of mean-age at the demographic transition of first childbirth. Our work encourage ABM modelers to promote this trend while designing their models. Further, our paper is an attempt to merge the microsimulation approach into the agent-based simulation through injecting data into ABM approach**

***Keywords*— Agent-based modelling, social simulation, individual-based modelling**

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