Simulating Demography – Dynamics of Fertility Using a Multi Agent Model

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***Abstract*— Many countries of the world have seen fertility rate declines. Sincere efforts have been made by the governments to change this trend. But still, countries like Korea & Japan are facing the problem of fertility rates well below the replacement fertility rates. Modeling and simulation offer a good way of understanding the dynamics of population. Of late, agent based modeling (ABM) has gained quite a lot of popularity in the field of simulation. We propose an actual population data fed agent based model whereby the agents in the simulation would take as input the actual census data and simulate the population fertility dynamics. Fertility rates are the main measures of population change. We will try and understand how fertility evolves by taking into various factors such as age, income, expenditure, social benefits; from the micro to macro level. The decisions of the agents, such as to get married and then have certain number of children, would be based on these factors. The fertility is predicted by accessing number of children a couple would have in the child bearing age. We hope to analyze and understand the effect of factors such as social benefits by this model.**

Keywords— Agent Based Modeling, Demography, Fertility, Population Dynamics, Data Driven.

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