To estimate , the population of a district within year groups x in year t, we applied some Bayesian perspectives.

Since we can find estimated population for year t and age groups, which is , thus we can calculate = we set as a initial value, where is the year of census which we have the data, then we have. Now we update through (2) by using we already know and , then we use equation (1) which is to again update . We do it until the algorithm converge.