Population Model

The population model is grounded on a method called Component Analysis (or Component Method) 1, which takes into account Crude Birth Rates (CBR), Crude Death Rates (CDR), and migration rates (inmigration and outmigration). Any of these rates may change in a linear or non-linear fashion.  
  
popt = popt-1 + popt-1 \* CBRt\*(1 + birth\_rate\_fct) - popt-1 \* CDRt \*(1 + death\_rate\_fct) + Immigrationt- Outmigrationt  
  
In this equaiton, death/birth\_rate fct is applied to the nominal growth rates. It is used for sensitivity studies of changes in the growth rate. For example, if one uses a birth\_rate\_fct of 0.1 this will boost the nominal growth rates by 10%. These variables are put in place to account for any possible bias in the census data.

* Model ID: population\_model
* Model Maintainer: Jenny Yu, jenny.yu@kimetrica.com
* Model Category: Demographic, Socioeconomic

# Outputs

**population:**

* Description: pixel value corresponds to the population residing there.
* Units: number of people

# Parameters

**country:**

* Description: Select the country of interest.
* Type: ChoiceParameter
* Choices: Ethiopia, South Sudan
* Default: Ethiopia

**year:**

* Description: Select the year of interest. 2008-2020 is available for South Sudan, and 2000-2020 is available for Ethiopia.
* Type: NumberParameter
* Min/Max: 2000, 2020
* Default: 2018