

MIGSUB

Version 5.20

Description

MIGSUB projects internal and international migrants by sex and subnational area. Internal in- and out-migrants are estimated from subarea populations at the time of a census and at a prior time point (based on a question in the census about residence X years before the census). The internal migration projection is based on the implied total internal net number of migrants and user-specified future growth rates of the total internal migration rate and the projected total population. The resulting projected total internal migrants are distributed by subarea based on the patterns of estimated in- and out-migrants. International migration by subarea is projected based on input total net international migrants and the pattern of internal in-migrants by subarea.

Data Required

- (1) Reference dates of most recent and prior censuses
- (2) Total male and female populations at each census
- (3) Time reference of migration question. This refers to the time (in years) before the census for which the prior residence is being requested (e.g., "Residence 5 years ago," or "Residence 1 year ago"). This is noted as X in the text below.
- (4) Start year, end year, and interval for the projection
- (5) Total net international migrants by sex for start and end years of projection
- (6) Male and female residents ages X+ enumerated in the most recent census by reported subnational residence X years prior to enumeration
- (7) Male and female residents ages X+ enumerated in the most recent census by current subnational residence (for those with reported subnational residence X years prior to enumeration)
- (8) Male and female residents ages X+ by subnational residence who were in the same subnational area at the time of the census and X years before the census
- (9) Male and female in- and out-migrants ages X+ by residence implied to have migrated to/from a subarea between the most recent census and X years prior to enumeration (optional input if items 6-8 are not available)
- (10) Total projected population by sex for each year in the projection horizon (optional)
- (11) Total projected net international migrants by sex for each year in the projection horizon (optional)
- (12) Estimated percent of migrants in the last X year(s) that are under age X at the census date, and thus not included in the migrant estimates from the census, by sex (optional)

- (13) Assumed annual growth rate of internal migration rates, by sex, for the projection period (optional)

Assumptions

- (1) The geographic distribution of internal in- and out-migration remains fixed.
- (2) Net international migrants follow the same geographic distribution pattern as internal in-migrants. It is assumed that internal in-migration is correlated with economic development which would also be correlated with international migration.

Procedures

The workbook builds on a tabulation of the population by current residence and residence at a fixed time point (X) prior to enumeration. The classification of residents by sex and previous residence provides estimates of in- and out-migration by sex and subnational area for a fixed pre-census reference period.

The user must supply data on residential status of persons by sex and region based on a census question about residence X years prior to the census, or from tabulated estimates of internal in-migrants and out-migrants for the same reference period. This set of persons excludes those who resided outside the country of interest X years prior to the census date. Persons residing outside of the country during the period of interest are considered *international* migrants and are not included in estimates of internal migration.

The total numbers of internal migrants are then adjusted for the child migrants (under age X) who are not included in the census estimates. The percent of migrants in the last X years that are under age X at the census date, by sex, is used to estimate the number of child migrants that are missing from the estimates. These percents missing can be estimated based on models of migration (e.g., Rogers and Castro 1981 or United Nations 1992). If you do not have an estimate, the workbook will fill in estimates based on the migration reference period, X, the total number of internal migrants by sex based on the census data, an assumed sex ratio of missing child migrants of 1.0, and estimates of both sexes percents missing based on models of migration rate age patterns and estimated populations by age and sex. The default estimates of the percent missing are 7.2 percent for a 5-year reference period and 1.6 percent for a one-year reference period. Default values for other reference periods are estimated by linear interpolation.

Next, arrays of in- and out-migrants by subnational area are used in conjunction with rates of national population growth and assumed total internal migration rate growth to derive future levels of gross internal migration flows by sex and subnational area. Finally, distributions of total internal in-migration plus projected net international migrants are then used to model net international migration flows by sex and subnational area.

Advantages

The program allows the user to project total internal and international migration, by sex, for multiple subareas from a standard census question about the change of residence during a fixed reference period prior to the census and user-supplied assumptions about future migration rates.

Limitations

- (1) While census questionnaires often include questions about residence at a fixed pre-census reference date, the data may not be readily available. If tabulations are available, they may not be detailed enough to provide the necessary amount of user-specified data.
- (2) The workbook assumes international migration follows the same geographic distribution pattern as internal in-migration, which may not be true for some countries.
- (3) The workbook does not calculate age-sex distributions of migrants.
- (4) There may be no data on which to base the percent of child migrants that are missed because they are under age X at the census, and the default model values may not reflect the age patterns of migration for the country.

References

Rogers, A. and L. Castro. 1981. ***Model Migration Schedules***. (RR-81-30). Laxenburg, Austria: International Institute for Applied Systems Analysis.

United Nations, Department of International Economic and Social Affairs. 1992. ***Preparing Migration Data for Subnational Population Projections***. By Alden Speare. New York.

Note

For access to all Subnational Projections Toolkit workbooks and documentation, go to:
<http://www.census.gov/population/international/software/sptoolkit/>