reproducibility package

Unraveling the Factors Behind Women's Empowerment in the Labor Market in Colombia

Data

Data consists of 23 time series for females and males: Labor force participation rate, Life expectancy at birth, Infant mortality rate, Maternal mortality rate, Fertility rate, Marriage rate, Gross enrollment rate primary education, Gross enrollment rate secondary education, Gross enrollment rate higher education, Homicide rate, Chamber of representatives (Females), Senate (Females), Share rural population Real minimum wage, and Real GDP pc growth.

The frequency is annual and cover the period from 1950 to 2018. All data are published from every source cited in the book: *"El camino hacia la igualdad de género en Colombia: todavía hay mucho por hacer"*
by: Iregui-Bohórquez, Ana María, Melo-Becerra, Ligia Alba, Ramírez-Giraldo, María Teresa, and Tribín-Uribe, Ana María.

https://www.banrep.gov.co/es/el-camino-igualdad-genero-colombia-todavia-hay-mucho-hacer

The reproducibility package contains the following directories:

Data: The file data_sources_definitions.xls with the following excel sheets:

1. Sources and definitions: Description of the variables and sources of the dataset.
2. Original: Contains the raw data from the period 1950 to 2018 according to the sources.
3. expor1: Imputed variables with missing values by using statistical methods.

Reproduced figures and tables: Contains the figures 1 to 16, the annex 2 figures and Tables and Tables A31, and A12. These images are in *png* format and *are reproduced directly form the code:* Main_program.sas

Figures: Contains the Figures and Tables edited for publication.

Code

The files contain the SAS file to run the full application:

Tvem_v311.sas (Tvem_v311.txt): A SAS macro file that runs the Time-Varying Effect Modeling, TVEM, with the factors and variables examined in the paper. Source: SAS Macro Suite for Generalized Linear Models. Runze, Tan, Yang and Huang: *The Pennsylvania State University*

Main_program.sas (main_program.txt)

It includes the main program file make data imputations based on statistical techniques, call the TVEM SAS that estimates coefficients in a time-varying effect model. Adjust some upper and lower confidence intervals for dates and cases to ensure convergence. Finally, reproduce the figures and tables of the paper.

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Instructions

To run the scripts, new users need to change the directory of the Main_program.sas file in lines 19,20, 26, and 48, 82, 94, 110, 347 369, 388, 425, 444, 466, 502, 522, 563, 582, 623, y 743, in order to read the data, call the macro and write the output file respectively. Additionally, to save the plots and output files the user needs to address the directory optionally. If you need assistance, please request author´s team and they will update the files.

Using SAS 9.4 each procedure takes on average approximately 0.42 seconds for each procedure, taking approximately 30 seconds for the whole process to complete.

real time	29,96 seconds
user cpu time	7.86 seconds
system cpu time	13.20 seconds

Notes

Codes are also available under requirements on the personal email for the authors.