

In-Class Exercise 2

For this in-class exercise, work with your group of 2-3 people, to answer the following questions. These questions are not necessarily easy and sometimes they will not have a clear “correct” answer. The goal is to get you thinking about the material we’ve learned. Some of these questions may require you to discuss and debate with your group members to come up with an answer or can cover topics that we have not yet covered in class.

Be prepared to share your answers with the class and add to the discussion.

After class submit your a do-file with your answers in comments to Moodle for grading. You will be graded as a group on your submission. Only one group member needs to submit the assignment, but make sure add all group member names.

Macro-development in Sub-Saharan Africa

Go to the GitHub repository for [the harmonized dataset](#) and download the data file LSMS_ISA_harmonised_dataset.dta. Save this file in your Econ 31 folder. Unzip the file into another folder. This new folder should contain four files with .dta extensions:

```
Individual_dataset.dta
Plotcrop_dataset.dta
Plot_dataset.dta
Household_dataset.dta
```

These four files have are connected by different id variables, whether it be a unique individual ID, a household ID, country ID or some other characteristic.

Problem 1

Open Stata and open up the Do-file editor, which should open a new window. At the top of this window, write these commands:

```
clear all
set more off
use "<path to EC031 folder>/Individual_dataset.dta"
```

Save it as exercise-2.do. Run the do-file. The dataset with all its variables should now be loaded into Stata.

Problem 2

For this exercise we’re going to think about topics related to macro-development. These include demographic transition and the transition out of agriculture.

i Definitions

Demographic Transition: a phenomenon and theory in the social sciences (especially demography) referring to the historical shift from high to low rates of birth and death, as societies attain several attributes: more technology, education (especially for women), and economic development.

Transition out of Agriculture: the process by which a society moves from being primarily agrarian (based on farming) to being primarily industrial and service-based. This transition is often associated with urbanization, technological advancement, and changes in labor markets.

What is the probability of completing primary education conditional on being female? What is the probability of being female conditional on completing primary education? Use the `tab` command give the relevant numbers for this. Afterwards, use Bayes' Rule to validate your answers.

Problem 3

Construct a bar graph that illustrates the probability of completing primary education conditional on being female, by wave (i.e. over time). What do you see? Has the probability changed over time?

[Check the documentation](#) (page 3) to see what years each wave corresponds to. Extra credit if you can add those years to the x-axis!

i Hint

You will need to create a binary variable for primary education completion first. Then you can use the `graph bar` command with the `over()` option to create the graph by wave.

Note that `graph bar` takes in `if` conditions, so you can use that to condition on being female

Problem 4

Look through the variables in the dataset and note down which variables you think could be useful for studying these two phenomena. For each variable you identify, write a short explanation (1-2 sentences) of why you think it could be useful.

Problem 5

Using the variables you identified in question 4, calculate conditional probabilities or create graphs that will help you answer the following two questions:

- Is the demographic transition occurring in the countries represented in this dataset?
- Is there evidence of a transition out of agriculture in the countries represented in this dataset?

i Note

You do not need to construct graphs or calculate probabilities for every variable you identified in question 4. Just pick the ones you think are most relevant.