



**Data for
Development Impact**

Programación 101

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July 2, 2020

LAMBDA

Introducción al Curso

¿Quién soy?

- Nombre: Rony Rodrigo Maximiliano Rodriguez-Ramirez
- Trabajo: Banco Mundial, Washington, D.C.
 - Development Impact Evaluation Unit (DIME)
- Educación: Economista con máster en Development Policy (KDI School)
- Experiencia:
 - Innovations for Poverty Action (IPA)
 - KDI School of Public Policy and Management

Organización del Curso

Enfoque del Curso

- ¿Por qué es importante aprender un software de análisis econométrico hoy en día (Stata, R, etc.)?
- Mejoramiento del conocimiento de programación aplicada a la econometría y la investigación.
- Buenas prácticas de programación de la Unidad de Evaluación de Impacto del Banco Mundial.

Objetivos

Objetivos del Curso:

- Aprender los conceptos clave y las técnicas econométricas asociadas a la programación estadísticas usando Stata:
 - Desarrollar buenos hábitos de programación.
 - Aprende a implementar programación básica y avanzada.
 - Aprenda varias características y detalles específicos del lenguaje de programación popular en econometría, Stata.

Sesiones

Este curso estará dividido en 5 sesiones (o tópicos):

1. Programación 101
2. Manejo y Limpieza de Datos
3. Construcción de Datos
4. Análisis de Datos
5. Programando modelos de evaluación de Impacto
 - 5.1 RCTs y Datos Panel
 - 5.2 Diferencias en Diferencias
 - 5.3 Regresión Discontinua

Materiales del Curso

Repositorio en Github

Los materiales del curso se pueden encontrar en el siguiente enlace [enlace](#). Este repositorio será actualizado semanalmente con las siguientes carpetas. A su vez, subiré la misma información al Canvas.

- Lecturas (Slides)
- Codes (Stata)
- Syllabus

Programación 101

¿Puedo ocupar Excel para análisis de regresiones?

In Excel you make changes directly to the data and save new versions of the data set

In Stata (or R) you make changes to the instructions on how to get from the raw data to the final analysis and save new versions of the instructions.

Tu código es un resultado

Researchers often treat code as a mean to an end, but the main point of this presentation is that your code is equally as much an end in itself as the paper or the report you are writing!

Objetivo

To become a great coder you both need to code like a coder and think like a coder.

Both takes a lot of practice to master, but the objective of this session is to give you a framework to think like a coder by answering questions like:

Why do we code? How do I code so it is the most helpful for other people in my team?

Coding in Academia vs Workplace

In academia: Being correct is what matters In the workplace: Correct is equally important as in academia Past, current and future team members will contribute to the same code, and therefore we need to standardize how we code, and focus on skills for coding as a team

Critical thinking about data

Do I believe this number? What can go wrong in my code? How will missing values be treated in this command? What would happen if more observations would be added to the data set? What would happen if some observations would be removed from the data set?

Explore a raw data set

What is the first thing you want to look for every single time you open a new data set for the first time?

1. Unit of observation
2. Uniquely and fully identifying ID variable

Explore a raw data set

Explore a raw data set

ID variable

Only work with data set that has an ID variable. If the data set that you have received does not have one, then creating it is your first task Test that the ID variable is uniquely and fully identifying Use only one variable as ID variable

Role division in data work

Research Assistants No one will look at the data as much as the RA Irregularities in the data that the RA does not identify will often never be discovered Economists In charge of deciding which irregularities will be corrected and how Economists completely depend on RAs to identify irregularities and get the information to make the best call

Estilo

White Space. Stata does not distinguish between one empty space and many empty spaces, or one line break or many line breaks. It makes a big difference to the human eye and we would never share a Word document, an Excel sheet or a PowerPoint presentation without thinking about white space - although we call it formatting.

Is this slide easy to read?

White space - Espacio blanco

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Líneas verticales

Uso del archivos de ayuda y el conocimiento de programación

Archivos de ayuda (help files)

¿Dónde están las regresiones

En palabras sencillas

Review each others code

Compare your code and discuss differences Ask what is easiest to understand if you think of your do-file as an instruction? What is difficult? Apply the question of critical thinking of data work to each others code. (If you do not know what will happen if you have missing data, test it) If no one lets you see their code, ask people to look at your code. Have you ever asked someone to help you proofread you your Word document?

Read other peoples code

Look for code on GitHub <https://github.com/trending/stata> (Stata)

<https://github.com/vikjam/mostly-harmless-replication> (Stata and other languages)

Google code, but before using, ask yourself critical questions about the code you found. Why did this person code this way? Does this apply to my context?

Database management literature

Your project folder is an informal data base, and very smart people working with data bases have been thinking a lot about this

I don't have a specific book to recommend as I don't know of a book written for our context, so this method is not for the faint hearted

Conclusión

Your code is a tool that you should develop as if other people will be using it

Ask for help from your peers to review your code

When submitting code, format them as carefully as you would format your resume or your cover letter

Nos vemos la siguiente semana.