Dimensions of Inequity

Using ADePT Edu for Assessing Inequality in Education

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Data availability: a challenge we must face

Data Availability Around the World:
Share of indicators reported by each country in 2008(%)
Data availability: a challenge we must face

Data Availability over time for Education MDG Indicators

Bridging existing information gaps

- Continuing to Improve administrative data
  - Partnership with UIS
  - Supporting the developing of EMIS

- Exploring other sources of data
  - Education Projections
  - Public Expenditure Database
  - Household Survey Data

Speakers Bureau, External Affairs
**Education is an investment**

- **Earnings**
- **University graduates**
- **High school graduates**

<table>
<thead>
<tr>
<th>Direct cost</th>
<th>Age (years)</th>
<th>Time (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>42</td>
<td>23</td>
<td>42</td>
</tr>
<tr>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
</tbody>
</table>

**Costs and benefits of the Perry Preschool Program after 40 years**

- **Benefits**
  - **Education savings**
  - **Income tax**
  - **Total social benefits** $195,621

- **Costs**
  - **Education savings** $7,303
  - **Income tax** $15,166
  - **Total social benefits** $118,473

$12.90 return per dollar invested

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Speakers Bureau, External Affairs
Different dimensions of inequality

How much their birth conditions limit their likelihood to develop professionally?

Felipe  
30 questions correct

María  
12 questions correct

The vicious circle of poverty

A family living in poverty cannot afford to send their children to school

Children receive little or no education and often they are forced to work

Children grow up without basic skills and education

Lack of basic skills and education limit their job opportunities to low paying jobs

Perpetuating education inequalities and poverty

Now they have a number of children to support with little income

Girls marry young and have children
Measuring inequality in Education

That’s where ADePT Edu can help!

Assessing Sector Performance and Inequality in Education
Book contents

Chapter 1. Introduction to ADePT Edu:
Broadening access to school and household data in education

Chapter 2. Using household survey data

Chapter 3. Using ADePT Edu—A Step by Step Guide

Chapter 4. Generating and interpreting the output tables and graphs from ADePT Edu

Chapter 5. Analyzing Education Inequality with ADePT Edu

What is ADePT Education?

- ADePT Education is a module of the ADePT software platform, which includes modules on poverty, labor, inequality, social protection, health and others.
- ADePT is not a dataset nor a database, it does not contain any data and is not specialized on any particular country
- ADePT Education is a software tool for computing standard educational statistics based on user-provided data (survey, census, etc).
**ADePT allows to:**

- obtain the results faster;
- free resources for analysis and policy recommendations;
- minimize human errors;
- conduct simple checks to verify the data quality;
- standardize computations and ensure comparability of results;
- provide a user-friendly environment requiring minimal user training/data preparation;
- ensure reproducibility of results; reevaluate previous results;
- conduct analysis in limited access to data situations.

**ADePT Education workshop**

**INSTALLING**
# ADePT Edu Hardware Requirements

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Any modern computer; faster CPUs reduce time required to process jobs. Multiprocessor computers can be used with Stata MP.</td>
</tr>
<tr>
<td>Disk space</td>
<td>40 MB of disk space to install; running ADePT creates temporary copies of datasets 25-50 percent larger than the original, so disk space required ultimately depends on how large datasets are.</td>
</tr>
<tr>
<td>Memory</td>
<td>Minimum of 512 MB of RAM to operate; twice this much physical memory recommended for datasets. Use of dataset larger than 700 MB may require 64-bit Stata and larger memory.</td>
</tr>
<tr>
<td>Display</td>
<td>At least 1024 x 768 screen resolution. Users of netbooks and other computers with small built-in screens may find it necessary to use an external monitor (screen resolution does not affect speed or accuracy of computations).</td>
</tr>
<tr>
<td>Internet connection</td>
<td>Internet connection not necessary for generating output results; connection needed for program updates only.</td>
</tr>
</tbody>
</table>

# ADePT Edu Software Requirements

<table>
<thead>
<tr>
<th>Software</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Microsoft Windows operating system Windows XP/ Vista, Server 2003 and later, and Windows 7, in both 32- and 64-bit Windows environments. Does not work on MAC OS or Linux operating systems.</td>
</tr>
<tr>
<td>.Net framework</td>
<td>Microsoft .Net Framework 2.0 or later. Most recent Microsoft operating systems come with .Net Framework or allow for its installation. To check whether computer has .Net Framework installed, navigate Windows Explorer to folder where Windows is installed (typically C:/Windows), then proceed to folder Microsoft.NET, then to Framework. There will be several subfolders in this folder with names like 1.0.3705, 1.1.4322, and so on. The largest version shows the newest version of .Net Framework installed. If none of these folders is on disk, computer does not have Microsoft .Net Framework. If system does not have .Net Framework 2.0 or a later version, download and install latest version from Microsoft's website (installation requires administrator rights).</td>
</tr>
<tr>
<td>Computations</td>
<td>Stata version 10 or later (all versions except Small Stata or Numerics by Stata included in ADePT); both Stata and Numerics by Stata are products of StataCorp LP (<a href="http://www.stata.com">http://www.stata.com</a>). If the program will be used on multiple computers, Numerics by Stata is the recommended computational engine (unless all computers have version of Stata).</td>
</tr>
<tr>
<td>Output viewer</td>
<td>Microsoft Excel for Windows (version XP or later); free Microsoft Excel Viewer can be used.</td>
</tr>
</tbody>
</table>
ADePT: From data to report

User micro-level data: DHS, LSMS, LFS, ...

Inside ADePT:
User interface
Computational kernel (Stata)

Print-ready output
**ADePT: From data to report**

- selects a dataset
- fills-in the form
- selects the tables

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**Descriptions of Variables Included in the Main Form**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household ID</td>
<td>Continuous variable with unique identification for household. If dataset is composed of separate dataset modules, variable is only element linking one dataset module to another.</td>
</tr>
<tr>
<td>Urban</td>
<td>Binary variable with value of 1 if the household is in an urban region and 0 otherwise.</td>
</tr>
<tr>
<td>Welfare aggregate</td>
<td>Continuous variable containing value of welfare aggregate used by survey. The most common welfare aggregate is the monetary value of the monthly consumption per capita. Other datasets could use income or an asset-based wealth index instead of consumption as the aggregate of welfare.</td>
</tr>
<tr>
<td>Usual resident</td>
<td>Binary variable with value of 1 if household member resides in the house at time of interview. If member did not reside at home at time of interview, variable takes value of 0 or -- if dataset specifies so -- any value other than 1.</td>
</tr>
<tr>
<td>Head of household</td>
<td>Binary variable with a value of 1 if the person is the head of the household and 0 otherwise.</td>
</tr>
<tr>
<td>Spouse of household head</td>
<td>Binary variable with a value of 1 if the person is the spouse of the head of the household and 0 otherwise.</td>
</tr>
<tr>
<td>Age</td>
<td>Continuous variable representing person's age in years.</td>
</tr>
<tr>
<td>Gender</td>
<td>Binary variable with value of 1 if person is male and 0 otherwise.</td>
</tr>
<tr>
<td>Subpopulation</td>
<td>Space reserved for user-specified variable that disaggregates the dataset. For example, the user may want to create separate tables for different regions, levels of income, or ethnic groups. Codes defining the subpopulation go here.</td>
</tr>
<tr>
<td>Total spending</td>
<td>Continuous variable showing total annual household expenditures (in currency used by the dataset).</td>
</tr>
</tbody>
</table>
Definitions of Variables in the Labor Market Tab

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>Takes value of 1 if household member is working for wages at time of interview and 0 otherwise.²</td>
</tr>
<tr>
<td>Unemployed</td>
<td>Takes value of 1 if person is not working but is looking for work and 0 otherwise.</td>
</tr>
<tr>
<td>Sector</td>
<td>Code provided by each survey.</td>
</tr>
<tr>
<td>Earnings</td>
<td>Total amount earned by household member during number of hours reported in next variable.</td>
</tr>
<tr>
<td>Hours</td>
<td>Number of hours worked by household member (an average month has 167 hours).</td>
</tr>
<tr>
<td>Work experience</td>
<td>For surveys that do not report years of experience, ADP estimates them using the following formula: experience = (age - years of education - age of entry to the school system). For example, a 35-year-old who completed eighth grade would have 20 years of work experience (35 - 8 -7).</td>
</tr>
</tbody>
</table>

Recoding a variable

```plaintext
valname == const
valname != const
valname > const
valname >= const
valname < const
valname <= const.
```
Using filter option

<table>
<thead>
<tr>
<th>If-condition</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>inlist(region, 1, 3, 5, 6)</td>
<td>Include only observations from regions with codes 1, 3, 5, and 6.</td>
</tr>
<tr>
<td>inrange(age, 15, 60)</td>
<td>Include only individuals 15-60.</td>
</tr>
<tr>
<td>(male = 1) and inrange(age, 15, 60)</td>
<td>Include only individuals of working age, which is defined differently for men and</td>
</tr>
<tr>
<td>(male = 0) and inrange(age, 15, 60)</td>
<td>women.</td>
</tr>
<tr>
<td>missing(sector)</td>
<td>Exclude observations with missing values in variable sector.</td>
</tr>
</tbody>
</table>

Functions checklist

- Missing values, survey settings, filter and custom table tabas
- Creating, saving and uploading projects
- Browse database
- ADePT options
- Create portable version
- Updates
GENERATING AND INTERPRETING THE OUTPUT TABLES AND GRAPHS

ADePT Education workshop

School participation
- Gross and net attendance ratios
- Proportion of children out-of-school, on-time, under-age and over-age

Education expenditure
- Household expenditure on education

School progression
- Promotion, repetition, dropout and completion rates
- Primary to secondary transition rates

School attainment
- School attainment of the adult population
- Average number of years of schooling by age group

Labor Market Outcomes
- Earning by educational level
- Rates of return to education
- Employment

By education level, grade and age
Gender, residence, Household Wealth, Gender and education level of the household head
ANALYZING EDUCATION INEQUALITY WITH ADEPT EDU

ADePT Education Reports

Number of Household Surveys in Each Country included in ADePT Education Reports
Perpetuating inequality


Perpetuating poverty

Inequality inhibits MDGs

Inequalities across regions differ

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Fig. 5.6 Disparities in Educational Attainment over Time, for people between 26 and 29 years of age