Dealing with a rare target population: out-of-school youth survey of PISA for Development in Paraguay
Figueroedo, A., Heilborn, V. and Suarez, S.

CSDI 2018 Session: Managing Production and Quality issues in Large Scale International Assessments
Limerick, March 2018
Background

Population 7,052,983
Democratic period started in 1989
• Increased social investment
• Educational reforms and expansion of coverage and quality of education
1. **Background**

**Country profile**

- Young population: Median age 26,0 yo (2018)

- Literacy rate 95,07 % (2015) UNESCO

- Retention 41% graduates from HighSchool with their cohort.

- Paraguay scores among the lasts Latin American countries in UNESCO Terce evaluations (2013)

1. Background

Country profile: Investment in education

Source: National Central Bank and Ministry of Economy and Finances
1. Background

Description of the Study

- PISA is a widely known study, which started in 2000.
- Paraguay participates for the first time in PISA for development 2018
  - improves the instruments to measure with more accuracy lower levels of performance.
  - And incorporates a new Strand that assesses Out-of-School and Under 7th grade youth

Strand C
- Assesses 14 - 16 years old youth
  - out of school and under 7th grade.
- Target population are contacted through a household survey, in a probability sample of Primary Sampling Units; also through referrals and at Schools.
- Youth are interviewed individually at their homes to collect background data, and assessment is carried out through a self-administered test on Tablet support.
- Background questionnaires are provided to parents or caregivers to answer.
- Strata for international study: High/low concentration of target population areas
2. Implementation of the study in Paraguay

Population from 14 to 16 (2018) → 407,988

Target population for Strand C (2018)

14 to 16 Out-of-School + Under 7th → 104,252 (25.6%)

Goal 1200 cases

+ Household Survey (30%)
+ Referrals (17%)
+ Schools (53%)

Estimated response rate 87%
2. Implementation of the study in Paraguay

Limitations of data affecting our sample

The population projection is based on the Census 2012, which only had a coverage of 74.4% (DGEEC, 2015), therefore:

- there is a limitation of the data in terms of accuracy at levels of disaggregation
- some information is not available for some levels of disaggregation (PSUs)

Paraguay Sample had these features:

- Scarce target population
  - 1,5% of general population,
  - 26% of 14-16 population
- Stratification was done at the district level
  - and it was assumed that all the PSUs within the district had the same distribution of the Strand C target population
- Outdated Strand C sampling frame
2. Implementation of the study in Paraguay

Sample size

Strata → High conc. /low conc. areas; urban/rural áreas

Sample 6,958 households in 137 PSU
- Initial sample 105 PSU
  + reserve sample 32 PSU

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Low Conc.</th>
<th>High Conc.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>9</td>
<td>92</td>
<td>101</td>
</tr>
<tr>
<td>Urban</td>
<td>12</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>116</td>
<td>137</td>
</tr>
</tbody>
</table>
2. Implementation of the study in Paraguay
Field Trial field strategy

• Duration 11 weeks: Monday to Saturday

• 3 regional offices: North, South-east, Central areas.

• Total 9 teams: 54 Interviewers + 9 team supervisors + 18 vehicles & drivers
3. Results

Response rates per stage/instrument

- Screener 69% → eligible youth 9,6% + ineligible youth 59,3%
- Youth Interview 91,4% → 276 YI eligible / 302 Screener eligible youth
- Assessment 91% → 251 assessed youth / 276 eligible youth
3. Results

**Household survey (73% reached)**

The main reasons for not reaching the expected number of cases:

i. error in the assumptions used to estimate the sample size.
   - the scarcity of this population + outdated sampling frame/cartographic information
     + lack of information at the PSU level

ii. no consideration of Strand C target population as a population that commutes and/or
    migrates a lot for working purposes

iii. lack of previous information about the study and its purpose

Additionally

• unexpected situations with safety risks for interviewers

• field work organization affected both the FT timing and costs:
  a) routes were too rigid, which prevented teams from adjusting quickly
  b) the team size larger than needed per PSU
  c) interviewers could not move ahead from their teams, the distance between PSUs was big and
     commuting was difficult.
3. Results

**Referral (12% reached)**

Only 59 referred cases in 25 PSUs → only 29 were valid cases (24 ass.)

The rest were discarded due to:

(a) inaccuracy of information about the referred youth’s address (24 cases)
(b) the fact that people did not know precisely whether the child was within the age range of interest or their schooling condition (6 cases).

**In school (62.3% reached)**

Main problem was the inaccuracy of the students’ records at the Ministry of Education.

- All students’ lists were confirmed & updated with each School principal
- 72 Schools were selected, with 675 listed students
- But during test administration:
  - 29% of the 675 confirmed students were absent (i.e. dropped out, intermittent attendance)
  - 12% were absent for different reasons (i.e. health, work, family issues)
3. **Results**

Obstacles and challenges

Issues regarding the management of data collected through computer equipment.

a) National Center staff and hired interviewers more experienced on paper-based data collection: Tablet supported procedures were a challenge

b) Limited functioning of the platform → it was being adjusted “on the go”
   - several software updates were carried out to improve software
   - caused untimely access to data bases

c) Connectivity was an issue.
   - caused delays in the submission of cases information (not possible or inefficient)
   - affected the reception of new cases by interviewers.
3. Results
Obstacles and challenges

Issues regarding the management of data collected through computer equipment.

d) To prevent data losses due to technical issues interviewers used flash drives as backup,
   • But, there was no easy way to transfer the information from the backup to the data base: some information was lost or late.

e) Some tablet features combined with the interview environment:
   • Screen brightness: make it hard to use when the interview was conducted in the front or back yard,
   • Screen size: too small which complicated reading, typing and tapping category selection,
   • Memory: after several week, tablets would have problems to handle and transfer a big amount of data,
   • Battery: it did not last for more than 4 hours and charging time in the field compromised coverage & impacted budget.
3. Results
Obstacles and challenges

Issues related the Paraguayan team for data collection and IT support.

• Hard to find qualified interviewers: there are no pool of experienced interviewers to recruit.

• Harder when combined with the format of data collection: IT was a challenge.

• There was insufficient technical support at the National Center: more IT support was needed.
3. Results

Obstacles and challenges

Issues with data monitoring and validation processes

The expected level of quality control was not reached, because

(a) validation process was not implemented as designed, due to inaccessibility of data base on time due to ongoing adjustments to the system,

(b) data gathered were insufficient to do quality control through phone calls (i.e., screener respondents’ phone number was not collected), and

(c) more staff were required to conduct the quality control.
### 3. Results: Strategies used to solve obstacles

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close follow up and ongoing consultation from regional coordinators</td>
<td>To compensate for unexperienced interviewers</td>
</tr>
<tr>
<td>Close daily troubleshooting with interviewers regarding data collection</td>
<td>To solve unforeseen data collection issues &amp; IT problems</td>
</tr>
<tr>
<td>Extra support to regional teams: frequent visits from National Center</td>
<td>Real time Monitoring: to track daily work and coverage, to be informed in case of safety issues and to solve difficulties with cartography.</td>
</tr>
<tr>
<td>App for monitoring: to track interviewers and teams, registering HH</td>
<td></td>
</tr>
<tr>
<td>Included data collection on paper (phone numbers) to do some validation</td>
<td>To prevent visiting same house twice</td>
</tr>
<tr>
<td>Defined one alternative validation process for HH without contact</td>
<td>To compensate the difficulties to carry out planned validation</td>
</tr>
</tbody>
</table>
4. Lessons learned
Looking towards Main Survey

Some of the improvements to consider for Main Survey include:

• Planning time enough for intensive / thorough testing of software and all procedures in the field.

• Smaller interviewers’ teams and more flexible routes.
  + One specific team for under 7th youth at Schools.

• Special survey hours: interviewers visits include weekend and early night hours.

• More meticulous planning of field work, to prevent National Centre teams from excessive work load, and therefore provide optimal support for data collections teams.
  → more human resources for quality control and validation
  → trained IT and logistics staff at regional offices

• Communication with local police offices can provide key local information, and prevent safety issues during the household survey.

• Communication through local radios can improve cooperation from families, enhance interest from youth and prevent eventual refusals.
PISA-D National Center
Ministry of Education and Science, Paraguay

Verónica Heilborn – alheilborn@gmail.com