Identification Systems for Social Insurance
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Pensions Core Course
The identification revolution

• The root of trust for the digital economy
  – E-KYC for mobile phones/money
  – Credit rating services
• Shift to digital government
  – On-line voting and tax filing in Estonia
  – Direct benefit transfer (DBT) in India
• Migration and security challenges
• Technological progress and lower costs especially for biometrics
We are in the midst of an ID revolution

Civil Registration and Identification (1960-2017)

Cumulative number of Countries

- Civil registration
- National ID
- National digital ID

Source: ID4D Global Database
Coverage is improving but gaps remain

Unregistered adults

- Low income (18): 35.4%
- Middle income (68): 4.2%
- High income (13): 2.2%

Birth registration rate (0-4)

- LIC (34): 52%
- LMIC (50): 76%
- UMIC (55): 93%
- HIC (59): 97%

Source: ID4D Global Database based on FINDEX and UNICEF data
But many IDs are not digital or robust.

Birth registration records

National ID card
And may not ensure uniqueness

CURPS ISSUED: 186 million
Mexican population: 130 million
Three things that SP programs need

• Uniqueness (1:n)
  – Without it, there are duplicates and the other two ID functions are compromised

• Authentication (1:1)
  – Without it, there is fraud and leakage

• Links across databases
  – Without it, integration of SPJ policies is compromised and targeting is less accurate
Why ID matters for Social Protection

We need to know if we are enrolling the right person.

We need to know if we are paying the right person.

Keep track of their history and progression.

Effectively monitor.

Avoid inclusion errors and duplicities.

Reliably source to Validate Identity.

Unique Identifier.

Reliably source Authenticate their Identity.

Avoid payment leakages.

Source: Chavez (2018)
Uniqueness: difficult without biometrics

Demographic Deduplication

Probabilistic method of matching individuals by comparing demographic fields for each person

- Name
- Middle Name
- Last Name
- Date of Birth
- Place of Birth
- Gender

Compares the demographic information of the head of HH against all existing in DB

- Complete Match
- Partial Match
- No Match

Compares all family members

- Complete Match
- Partial Match
- No Match

Duplicated Family

New Household

Investigation Protocol

Functional ID

Provides HH and Individual Program ID

Source: Chavez (2018)

and since no one program covers the entire population, the identity established is program specific and not unique in the SPJ system
## Authentication: various options

<table>
<thead>
<tr>
<th>Security</th>
<th>Manual verification</th>
<th>Electronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least</td>
<td>Some form of ID is shown to the agent/official and may be manually recorded</td>
<td>No electronic record generated at point of transaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Off-line or on-line</td>
</tr>
</tbody>
</table>

| Least     | Card/SIM/voucher read by POS and e-record created |
| Most      | Off-line or on-line |

| Most      | Card/SIM plus PIN |
|           | Off-line or on-line |

| Most      | Card plus biometric verification |
|           | Off-line or on-line |

| Most      | Combination of above |
|           |                       |
Manual authentication

India

Ethiopia
Biometric authentication for pensions

Mexico

India
Linking databases

Examples:
- Compare Social Insurance to Social Assistance
- Compare Social Insurance to income tax
- Update address w/utility bill
- Check CCT education conditions met
Advanced cases – Chile and Turkey
Advanced cases – Chile and Turkey

Total Pension

Non-contributory pension

Contributory Pension

Estimated income

Health insurance Premium

- Estimated income range:
  - Health insurance premium range:
    - 0 to 50
    - 100 to 150
    - 200 to 250
But links raise privacy concerns...

- 2018 was the year of the Facebook scandal, the Indian Supreme Court decision on privacy and the GDPR
- Many countries do not have personal data protection rules and/or the ability to enforce them
- *Does your agency have clear policies regarding personal data and privacy?*
Question: Does your program/agency use the national ID or its own functional ID?
Functional or foundational

Mexico’s silos

Why silo’s exist

• Low coverage of national IDs and civil registers
• NID and CR not robust or trustworthy
• National ID system does not offer authentication services
• Legacy systems and turf battle

Notes:
1) * = deduplicated
2) White = manual or no credential; Blue = electronic credential

CURP – RENAPO’s ID number
INE – Voter
SP – Health insurance
IMSS – social security
ISSSTE – social security for civil servants
PRO – conditional cash transfer
65+ - social pension
Social Protection Programs in India over the last century

- Civil servant pensions
- Provident Fund
- Subsidized food
- Health insurance
- Pension Fund
- School meals
- Public Works
- CCT for hospital births
- Health insurance for poor
- Unique National ID

Timeline:
- 1900
- 1920
- 1940
- 1960
- 1980
- 1990
- 2000
- 2010
Social Protection Programs in US over the last century


- Social security number
- Civil servant pensions
- Pension for private sector
- Subsidized food
- Wage supplement
- Health insurance for poor, elderly
- Civil servants in National Pension
- Health insurance Obamacare
Challenges of ‘silto’ functional IDs

1. Limited ability to ensure uniqueness
   - Deduplication without biometrics has larger errors but the cost of ABIS for individual programs may be prohibitive.
   - It is not a one-off exercise as people move in and out of the program due to changes in their income and labor market status.
   - As a result, many programs don’t know how many people they actually cover, duplicates enter the system with costs to beneficiaries and government.
Challenges of ‘silo’ functional IDs

2. Limited ability to authenticate
   - Many programs cannot authenticate securely and this has contributed to massive fraud
     • Billions of dollars of ‘leakages’ in the largest SP programs like subsidized food or fuel in India and Indonesia
   - This has led programs to invest in e-IDs with more secure authentication but this results in a plethora of cards, lack of interoperability and lots of extra cost
     • A household in Indonesia could receive 17 cards
     • RSBY in India collected biometrics for 130 million people most of whom are being enrolled again biometrically by Aadhaar
     • Mexico has spent hundreds of millions on five different program biometric IDs with overlapping populations
Challenges of ‘silence’ functional IDs

3. Lack of common identifier limits ability to coordinate across programs in order to:
   - Improve targeting, e.g., comparing social insurance and social assistance registries
   - Monitor social spending – who is receiving benefits from multiple programs? Who is excluded?
   - Provide better service to beneficiaries (one-stop shop, common on-line platforms)
   - Scale up and expand during natural disasters
   - Universality – you have to know the universe
A few concluding observations

• Social protection programs need good IDs; the ideal would be a robust and unique identifier for the entire resident population from birth to death

• In its absence, suboptimal functional IDs have emerged and impose a significant cost on society

• Your social insurance and pension agencies can have a symbiotic relationship with NID agencies with benefits flowing in both directions
Thank you