Data for Sustainable Development

Session 6:
Big Data for Migration: Promises and Challenges

Webinar Speakers: Michele Vespe, Scientific Office at the European Commission-Joint Research Centre & Marzia Rango, Research and Data Officer at IOM's Global Migration Data Analysis centre

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#SDTalks
The European Commission’s science and knowledge service

Joint Research Centre
Big Data for Migration: Promises and Challenges

Michele Vespe
Knowledge Centre on Migration and Demography
Knowledge Centre on Migration and Demography
Definitions

**International Migrant**: a person who moves to a country other than that of his/her usual residence for a period of at least 12 months, so that the country of destination effectively becomes his or her new country of usual residence.

**Stocks**: number of migrants present in a given country at a particular reference time (e.g. 1st Jan 2018).

**Flows**: number of migrants who moved (enter or leave a country) in a specified time period (usually 1 year).
Landscapes of existing data

- Population Census
- Surveys
- Population registers
- Administrative data
- Operational data
- Non-traditional data /big data

Reliability, frequency, attributes, sample size/frame, granularity, timeliness, costs...
Why (better) migration data?

Balance/inform the public debate

Better understand migration

Evidence-informed migration policies
Big Data for Migration

Review latest applications of big data and alternative data sources to support migration policymaking, suggesting pragmatic follow-up steps to expand use of such data sources.

https://bluehub.jrc.ec.europa.eu/bigdata4migration/
Big data for migration: from case studies to policy support

One of the most promising applications:

*Social media advertising platforms*

Opportunities

- Real time census
- “inexpensive”
- Attributes like country of origin, education, age, sex (self-reported) and interests (likes)

Challenges

- Information reliability (often self-reported by user)
- Definitions (proprietary)
- Aggregations/rounding (proprietary)
- Penetration rate / selection bias (country, sex, age, education, sector, urban/rural…)
- Fake or double accounts
- Assimilation: expats destination or origin penetration rate?
Understanding the bias

Correction bias a question of penetration rate (popularity and internet access)
Understanding the bias

Correction bias a question of penetration rate (popularity and internet access) but also gender gap
<table>
<thead>
<tr>
<th></th>
<th>Social Media (e.g. Facebook)</th>
<th>Surveys in official stats (e.g. EU LFS, EU SILC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>~ 80% of population</td>
<td>&lt;0.1% of population</td>
</tr>
<tr>
<td>Population Sampling</td>
<td>unknown (with several dimensions, possible profiling potential)</td>
<td>stratified sampling (for pre-defined /limited dimensions of interest)</td>
</tr>
<tr>
<td>Drawback</td>
<td>Bias correction</td>
<td>Impossible to disaggregate further (e.g. education or labour force participation by country of origin)</td>
</tr>
</tbody>
</table>
Facebook “expats” – #Users (bias-affected)

Intra-EU mobility

- **FB – ESTAT agreement**
  - FB over-representing
  - FB under-representing
Migration data innovation potential I: timeliness/frequency

Stock of people born in Venezuela that live in Spain

Migration data innovation potential I: timeliness/frequency

Stock of people born in Venezuela that live in Spain

Migration data innovation potential I: timeliness/frequency

Stock of people born in Venezuela that live in Spain

Migration data innovation potential II: Characteristics

LinkedIn users who studied in Syria

... In Germany
Migration data innovation potential III: Granularity (time)

Air passenger data can give indications on short-time global mobility…

Pilgrimages to Mecca – Medina
- Ramadan
- Hajj
Migration data innovation potential IV: Granularity (space)

Density of mobile phone traffic with China and areas of highest concentration of migrants from 2011 Census

Sources:
- Italian Census Data &
- Call Detail Records, Telecom Italia
Any questions?
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Big Data for Migration: Promises and Challenges

Data-Pop Alliance-UNSSC

Data for Sustainable Development Webinar Series

27 September 2018
IOM’s Global Migration Data Analysis Centre

Officially launched by DG Swing on 7 September, 2015

Part of IOM’s response to growing calls for action to improve data on international migration globally

Part of IOM’s HQ

Based in Berlin at the invitation of the Government of Germany

Team of 15
Challenges

- Data access/Continuity
- Confidentiality
- Security/Ethical issues
- Methodology (selection bias)
- Reliability
- Definitions
- Fragmentation
Harnessing data innovation for migration: The Big Data for Migration Alliance (BD4M)

- Launched on 25 June 2018 in Brussels
- Convened by the EC KCMD and IOM’s GMDAC
- Aim: Foster data innovation for migration analysis & policymaking through partnerships
Big Data for Migration Alliance (BD4M)

Main areas of work:

a) Awareness-raising and knowledge-sharing
   - Repository of big data & migration projects
   - Organization of regular workshops (Global South)
   - Creation of a network of ‘data stewards’

b) Capacity-building
   - Preparation of guide and training materials
   - ‘Study visits’ and exchange of experiences across countries

c) Policy-oriented analysis
   - Exploring EU/global frameworks to sponsor applied research (e.g. issuing data challenges)
   - Working paper series
Data innovation and the Global Compact for Migration

- Historic opportunity to make real progress on migration data

- Better data on migration will be critical to designing forward-looking policies and balancing the public debate on migration

- Full awareness of data opportunities and limitations essential to inform policies

- New data sources and innovative methodologies: a potential we cannot ignore
Contact

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