Big Data for Labour Market Information

9th Thematic Workshop of Make it Match Network Eastern Partnership

Milan, 21-22 November 2019
2018-2020

- 20 deliverables 2020: monitoring
  - 3 horizontal deliverables and 4 priority areas; monitoring

- 18th deliverables and people-to-people contacts
  - Young people's skills, entrepreneurship and employability
  - Reduced mismatch skills with LM demands

- Mobility
New Skills Agenda for Europe

**Quality and relevance of skills**
1. Upskilling pathways
2. Key Competences Framework
3. VET as a 1st choice
4. Digital Skills and Jobs coalition

**Visibility and comparability qualifications**
5. Revision of European Qualifications Framework (EQF)
6. Skills profile tool for 3rd country nationals

**Skills intelligence**
7. Revision of EUROPASS
8. Analysis of brain drain
9. Blueprint for Sectoral Cooperation on Skills
10. Initiative on graduate tracking
Make it Match Network (2014-2019)


Skills anticipation as part of wider ecosystem
NEW: NQFs
Career guidance

Innovation
New data and analytics: Big Data, AI-powered analysis

Turin
Paris
Prague
Dublin
Milan
Helsinki
Maastricht
Riga
Milan
Skills anticipation – multiple dimensions: Combining data sources and methods

- Analysis: Job postings/vacancies
- Exploring administrative data
- Data regular statistics
- Employers’ surveys
- Stakeholder forum
- BIG DATA...
- Analysis graduates outcomes
- Technology, digitalisation impact on skill jobs
- Sector skills analysis
- Econometric modelling
- Foresights
Big Data for LMI: revised mix of profiles Network

Teams:
Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine

Ministries
State Statistical Offices
Public Employment Services
Research, academia

Mix of profiles:
LM analysts; data science, software development; statisticians;
Big Data for LMI: possibilities and issues in this workshop

- Game changer in LMI?
- Different views on benefits and issues
- Different degree exposure to theme
- Can we get to a common ground?
- Can we set new objectives for the Network?
ETF Big Data project 2019-2021

1. Guide: methodology
2. Application in partner countries (start now)
3. Experts' network
4. Knowledge-sharing
**Big Data 4 LMI: agenda 21-22/Nov/2019**

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<th>Day 1:</th>
<th>Day 2</th>
<th>Our trainers</th>
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<td>• General overview of Big Data LMI; role AI</td>
<td>• Architecture solutions for real-time LMI</td>
<td>• Fabio Mercorio</td>
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<td>• Country cases: Big Data</td>
<td>• Country cases: OJV websites</td>
<td>• Alessandro Vaccarino</td>
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<td>• KDD: steps</td>
<td>• Interpretation &amp; visualisation results</td>
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<td>• Data cleaning</td>
<td>• Big Data LMI and national statistics</td>
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<td>• Machine learning, AI algorithms</td>
<td>• Group exercise: preparing a project Big Data LMI</td>
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<td>• WG discussion: usage of results Big Data LMI (3 questions)</td>
<td>• Future steps ETF project</td>
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- **Our trainers**
  - Fabio Mercorio
  - Alessandro Vaccarino
Session 10: Big Data and Statistical Systems

Brief information on EUROSTAT project
ESSnet Big Data
ESSnet Big Data

Big data: from exploration to exploitation.

ESSnet Big Data is a project within the European statistical system (ESS) jointly undertaken by 28 partners. Its objective is the integration of big data in the regular production of official statistics, through pilots exploring the potential of selected big data sources, and through building and implementing concrete applications. ESSnet Big Data II has started in November 2018 and is to run for 26 months until December 2020.

It is a continuation of ESSnet Big Data I (from February 2016 until May 2018) and consists of 12 workpackages, A to L. Apart from WPA Coordination supporting and coordinating the project overall, these are grouped into an 'Implementation Track' covering WPB to WPF, a 'Pilots Track' covering WPG to WPK and the stand-alone workpackage WPL on smart statistics.
# Session 10: Big Data and National Statistics

## Workpackages

### Implementation Track

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<th>WPB Online job vacancies</th>
<th>WPC Enterprise characteristics</th>
<th>WPD Smart energy</th>
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<td>WPE Tracking ships</td>
<td>WPF Process and architecture</td>
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### Pilots Track

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<th>WPG Financial transactions data</th>
<th>WPH Earth observation</th>
<th>WPI Mobile networks data</th>
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<td>WPJ Innovative tourism statistics</td>
<td>WPK Methodology and quality</td>
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### Smart statistics

| WPL Preparing smart statistics |
Workpackage B (WPB) of ESSnet Big Data focuses on online job vacancies. Its aim is to produce statistical estimates for online job vacancies based on suitable techniques and concrete methodologies developed during the pilot phase of the project (see Workpackage 1 of ESSnet Big Data I), and to explore the conditions under which these approaches can be used in the ESS. The final objective of WPB is to develop and test methodologies and prototypes as well as to build capacity for integrating them into statistical production, both at the level of individual NSIs and the whole of the ESS.

WPB is carried out by representatives of twelve ESSnet Big Data partners: SURS (Statistics Slovenia) which is leading WPB, and NSI (Statistics Bulgaria), FSO (Statistics Switzerland), DARES (Ministry of Labour, France), Destatis (Statistics Germany), CSO (Statistics Ireland), ISTAT (Statistics Italy), LSD (Statistics Lithuania), GUS (Statistics Poland), INS (Statistics Romania), SCB (Statistics Sweden) and ONS (Statistics UK).
Session 10: Big Data and National Statistics

Task 1 – Methodological framework
Performed by SURS (Statistics Slovenia), NSI (Statistics Bulgaria), FSO (Statistics Switzerland), DARES (Ministry of Labour, FR), Destatis (Statistics Germany), LSD (Statistics Lithuania), GUS (Statistics Poland), INS (Statistics Romania) and ONS (Statistics UK)

Task 2 - Statistical output

Task 3 - Implementation requirements of prototypes in the relevant statistical production processes at European and national level
The statistical office of the future

- **Data flows** in addition to **surveys and censuses**
- Embedded in data flow – **smart statistics**
- **Product designers** in addition to **data collection designers**
  - Statistical modelling will be a major activity
  - From descriptive indicators to **nowcasting** (and forecasting)
- **Trust** and **quality** will be key
- New role in teaching **digital literacy**
- **Accreditation** and **certification** instead of pure production
- Address issues linked to quality & transparency, privacy & confidentiality, access to third party data sources & data sharing, scientific standards & methodology, professional ethics, skills, ...