Virtual Training Programme - Make it Match Network
"Big Data for Labour Market Intelligence (LMI) – what's new and which further perspectives?"
22, 23, 24 November 2021

Innovation in data and analysis of labour market dynamics has been a central theme of the capacity development and knowledge-creation activities of the "Make it Match network" of Eastern Partnership, and has been addressed in workshops and training organised by ETF since 2018. **Since 2019 ETF project Big Data for LMI has made important steps forward - this knowledge is worth reflection and dissemination through this in-depth training programme on 22, 23 and 24 November 2021.** Participants will learn more on the application of novel data analytics in the context of skills and labour market intelligence, Smart Statistics and new perspectives.

The programme includes training sessions, case studies presented by international experts and group debates. Learn more in **2. Background information** and visit the indicated webpages and dashboards.

1. Training programme "What's new with Big Data for LMI"?

Dates: 22, 23 and 24 November 2021

Time: 09.00-13.30h (CET)

Link to register: https://www.eap-events.eu/skills-intelligence

Main topics:

1. **Exploring the knowledge, data and lessons from ETF project Big Data for LMI (2 parts)**
2. **Exploring new data sources and analytical methods. New options, perspectives and questions on the use of internet data for LMI, and ESCO for learning outcomes of qualifications.**

Programme

Day 1: 22 November 2021 - 09.00-13.30h

A. Exploring the knowledge and lessons from ETF project Big Data for LMI – part I

Time	Theme and engagement
09.00-09.20	Opening. Objectives of the training course. Introduction of participants (poll)
09.20-11.15 **Session 1**	Jobs, skills and qualifications: Analysis of demand based on data from online job vacancies sources Data systems of Ukraine, Georgia and Tunisia: main features, databases, the key elements of data collection, classification, visualisation and maintenance. In-depth view of the country dashboards. Expert: Alessandro Vaccarino
11.15-11.30	Break
11.30.12.45 **Session 2**	Focus on the role of AI in the data system, from data collection to visualisation. Advantages, possibilities, limitations and challenges – AI in data systems.

	Poll. Expert: Alessandro Vaccarino
12.45-13.30 **Session 3**	**Case study:** Eurostat and Smart Statistics. Presentation: Fernando Reis (Eurostat) - video.

Day 2: 23 November 2021 - 09.00-13.30h

A. Exploring the knowledge and lessons from ETF project Big Data for LMI – part II

Time	Theme and engagement
09.00-09.15	Opening. Brief recapitulation of day 1. Poll.
09.15-11.00 **Session 4**	Overview of the technical construction of the OJV data system: from landscaping of data sources to data visualisation. Speaker: Mauro Pelucchi
11.00-11.15	Break
11.15.12.30 **Session 5**	Compact presentation of the technical construction of the data system. Focus on data collection, data classification and visualisation. Poll. Speaker: Mauro Pelucchi
12.30-13.30 **Session 6**	**Case Study**: Skills-OVATE (Cedefop): Online Vacancy Analysis Tool for Europe. Overview of the Tool and its possibilities for Skills Intelligence. New perspectives, new questions. Cedefop-Eurostat joint work in the context of Web Intelligence Hub. Useful Cedefop publications on use and on quality of Online Job Vacancies and skills analysis. Speaker: Jiri Branka. Cedefop

Day 3: 24 November 2021 - 09.00-13.30h

A. Exploring new data sources and analytical methods. New options and questions on the use of internet data for LMI.

Time	Theme and engagement
09.00-09.10	Opening. Recapitulation from day 2. Poll
09.10-10.30 **Session 7**	Towards "Smart LMI" addressing demand and supply sides: Smart skills intelligence addressing both demand and supply side. Options, architecture(s), data sources, analysis, dissemination. Visualisation: Robust visualisation tools, dashboards, interactive platforms with tailored reports - addressing the needs of different user's groups. Options, suggestions, examples. Use of off-the-shelf IT solutions (AI closer to user): brief overview of existing packages enabling certain aspects of a Smart skills intelligence system.

	Speaker: Alessandro Vaccarino
10.30-11.15 **Session 8**	Deepen the analysis: Use the potential of the data and enhanced analytical instruments to address a wider range of policy questions, specific queries on skills, occupations, education, career paths and new dynamics in the labour market. Speakers: Andy Durman, Executive Vice-Director. Global Business Unit EMSIBG
11.15.11.45 **Session 9**	Skills and learning outcomes in qualifications / curricula documents: Smart comparison of skills / learning outcomes defined in education and training (programmes, qualifications, standards). Case study: ESCO project "Linking learning outcomes to ESCO". Speakers: ESCO Linking Learning Outcomes project (F. Losappio)
11.45-12.00	Break
12.00-12.30 **Session 10**	Use of Big Data for LMI systems and insights by ETF partner countries. Experiences, issues, perspectives. Using ETF Dashboards, databases: proposals. The case of Ukraine. Speaker: Volodymyr Kovtunets
12.30-13.15	General consolidation, recommendations and discussions in 3 break-out groups.
13.15-13.30 **Session 11**	Final comments, recommendations from Break-out groups. Wrap-up. Closure.

2. Background information

ETF project Big Data for LMI

ETF project started practical application in 2019 with a feasibility analysis of the web labour markets of Morocco and Tunisia, resulting in a comprehensive report assessing and ranking online job vacancy (OJV) portals. The establishment of an integrated system for data collection, processing, classification, analysis and visualisation was the core of the work in 2020, in two pilot countries (Ukraine and Tunisia).

Schematic overview of the workflow and method of Big Data for LMI

Key outcomes of ETF Big Data for LMI activities, including data dashboards, training programmes, methodological handbook and analyses are accessible as follows:

a) Online Job Vacancies (OJV) Country data dashboards – updated data until 30/September/2021:
   Ukraine, Tunisia, Georgia. Ukraine dashboard State Employment Service.
b) Methodological guides
   • Brief methodological handbook (English) "Big Data for labour market intelligence: an introductory guide" (2019).
   • Brief Methodological Handbook, 2019 Russian and in French
c) Open Space webpage: LMI in transformation – Focus on Big Data

d) YouTube Channel with all webinars and training programmes (2020-2021)

- ETF - Learn all about Big Data for Labour Market Intelligence: training programme, webinars and interactions: [YouTube channel](#)

e) ETF Training programmes on Big Data for LMI: on ETF website

- [Big Data LMI OJV analysis](#) (June 2021, 3 days – 8, 10, 15 June) – online learning
- Workshop: [training programme](#) for data analysts and experts, November 2019
- [Labour Market Information in transformation: focus on Big data](#), ETF international webinar, 10 December 2020

f) Landscaping and ranking of OJV sources

- [Feasibility study OJV sources](#): methodology and 2 case studies (Morocco and Tunisia), 2019
- Report: [Big Data for LMI, Web Labour Market Landscaping Ukraine](#), 2020.
- Report: [Web LM in Tunisia: Landscaping and brief overview](#), 2020.
- Report: [Landscaping of the Web LM and ranking of OJV sources](#) (Belarus), 2020.

g) Analytical reports on demand side dynamics

- Report: [Big Data for LMI: analytics and insights (Ukraine).](#) 2020
- Report: [Big Data for LMI: analytics and insights (Tunisia).](#) 2020

h) International publication:

- The European Training Foundation and big data for labour market intelligence: shaping, applying and creating knowledge. In[: ILO, The feasibility of using big data in anticipating and matching skills needs](#). 2020.

A new world of data analytics…

Skills intelligence as business as usual is not enough to understand the direction and extent of the transformation of tasks, jobs, skills and qualifications prompted by a wave of drivers of change in our societies.

Data is being called the new oil. Digitalisation of processes, services, businesses, personal and social interactions generates a growing mass of data across the globe. Creating knowledge out of large volumes of data, available with high velocity and variety is the major goal of Big Data analysis.

New data analytics have emerged to advance skills intelligence and complement conventional statistics, surveys and administrative data. EUROSTAT is implementing [Trusted Smart Statistics](#) and starting the Web Intelligence Hub with a number of partner institutions. Smart Statistics can be seen as the future extended role of official statistics in a world impregnated with smart technologies. But the use of web data for official statistics is not easy, as it requires: infrastructure with big data capabilities, specialised skills, data agreements, spread of web intelligence capabilities among statistical services. More information [here](#).

…can be applied for labour market information

Artificial intelligence (AI) and machine learning are not only changing the labour market, but also giving us new tools for analysing the workforce. Job vacancies or job advertisements are published, refreshed, updated in large numbers through websites of different types, size and coverage. Exploring the inherent information of a such large data source has become an objective of research centres and public bodies in a number of countries. These vast data sources are essential to understand the dynamics and functioning of Web Labour Markets, and of changing employers' recruitment choices.

Big Data analytics can be used to map skills by occupations, to identify obsolete skills, to do predictive analysis of demand for new occupations and skills, and to better capture skills interactions - based on granularity of data and quasi in real time.

In the European Union, since 2016 Cedefop is leading a breakthrough project in this area and created a vast data system based on the analysis and classification of millions of online job vacancies (OJV) of European Union (EU) Member States. In the platform [OVATE](#) the results are presented in interactive dashboards of combined variables, and different geographic coverage.

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