
Contributions from JRC- IPTS Unit J3

Federico Biagi, Cristiano Codagnone, Yves Punie
March 4th 2016 – Brussels
– Digitalization and the labour market

– The labour market consequences of the Sharing Economy

– Digital Competence / Skills and widening access to Education
Digitalization and the labour market

Federico Biagi, EESC, 04/03/16
The following research questions will be analyzed by JRC-IPTS Unit J3, in conjunction with DG EMPL.

- **The ICT revolution and its impact on the labour market.** From Skill Biased Technological Change to Routine Biased Technological Change. Technological change as a driver of wage and employment inequality and of wage and employment polarization. The role of supply factors (demographics, education, skills) and institutions.

- **The task approach to the labour market and the Routinization hypothesis.** Methodological problems when trying to bring this hypothesis to data. Evidence from the EU (EU-SILC, European Working Conditions Survey).

- **The Routinization hypothesis and job polarization.** Methodological issues when measuring job polarization. Evidence form the EU (EU-SILC and LFS).
Digitalization and the labour market

Preliminary results: evolution of Abstract intensity index

![Graph showing the evolution of Abstract intensity index across different regions: Southern, Continental, Anglo, Nordic, and Eastern. The graph includes data from 2004 to 2012 for countries like AT, BE, FR, LU, NL, CY, EL, ES, IT, PT, DK, FI, IS, NO, SE, IE, UK, BG, CZ, EE, LT, LV, PL, RO, SI, SK.]
Digitalization and the labour market

Preliminary results: evolution of Manual intensity index

EU-SILC 2005-2011
Digitalization and the labour market

Preliminary results: evolution of Routine intensity index

Year
Southern
Continental
Anglo
Nordic
Eastern

Routine Index

EU-SILC 2005-2011
The following research questions are the focus of recent research efforts by JRC-IPTS Unit J3

- **Have ICT changed the level and composition of the demand for labour? Evidence from firm level and sector level data.** Two effects from additional use of ICT at the firm/sector level: the substitution (-) effect and the compensation effect (+), with the sum of the two being the total effect. JRC-IPTS studies find no evidence supporting statistically significant negative substitution effects or statistically significant negative overall effects.

- **How is supply adjusting to the ICT revolution?** Is there evidence of an e-skill mismatch? Do we observe over or under e-skilling? JRC-IPTS results for the EU using PIAAC data document that the e-skill mismatch is quite limited (87% of the working population is well matched) and so is the extent of over and under e-skilling (10% are over e-skilled and 3% are under e-skilled).
Recently published reports:

- "Employment of ICT specialists in the EU (2000-2012)", by A. Sabadash, DIGITAL ECONOMY WORKING PAPER 2014/01.
The labour market consequences of the Sharing Economy

Cristiano Codagnone, EESC, 04/03/16
Collaborative economy platforms that are online or mobile labour markets have been conceptualised and analysed with respect to their potential and documented economic and social welfare effects.

A review paper has been presented at a workshop organised by DG Employment and DG JRC held in Brussels Feb 24 2016.

A research agenda that includes empirical analysis is under construction.
Emerging evidence

- About 50 million individuals are registered globally as contractors of such platforms, no evidence or statistics enable to quantify how large is this pool in European countries.
- Typical on demand workers are younger and more highly educated of the population of reference.
- Primary motivation is financial, followed by flexibility and autonomy.
- Pay is below minimum wage (taking as benchmark advanced countries) in On Line Labour Markets (OLM) for micro-tasking platforms, just about minimum wage in Mobile Labour Markets, and fairly higher in OLMs for macro-tasking.
- Several platforms exert strong control and trade unskilled work delivered by Dependent Self-Employed Workers (DWSEs) that should probably be reclassified as employees.
Recently published reports:


Digital Competence / Skills and widening access to Education

Yves Punie, EESC 04/03/16
En 2014, 40% of EU population (age 16-74) has insufficient digital skills; 22% of them have none.
IPTS / DG EMPL Digital Competence framework

**What?**
Identifies and describes key components of Digital Competence (DC) in terms of knowledge, skills and attitudes.

**Why?**
Digital divide is not just about access: it is a multi-dimensional combination of personal, structural and social variables.


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<tr>
<th>Dimension 1</th>
<th>Dimension 2</th>
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<td>Competence areas (5)</td>
<td>Competences (21)</td>
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| **1. Information** | 1.1 Browsing, searching, & filtering information  
1.2 Evaluating Information  
1.3 Storing and retrieving information |
| **2. Communication** | 2.1 Interacting through technologies  
2.2 Sharing information and content  
2.3 Engaging in online citizenship  
2.4 Collaborating through digital channels  
2.5 Netiquette  
2.6 Managing digital identity |
| **3. Content creation** | 3.1 Developing content  
3.2 Integrating and re-elaborating  
3.3 Copyright and Licences  
3.4 Programming |
| **4. Safety** | 4.1 Protecting devices  
4.2 Protecting data and digital identity  
4.3 Protecting health  
4.4 Protecting the environment |
| **5. Problem solving** | 5.1 Solving technical problems  
5.2 Expressing needs & identifying technological responses  
5.3 Innovating, creating and solving using digital tools  
5.4 Identifying digital competence gaps |
IPTS / DG EAC Digital Competences for Educational Organizations

What?
Develops a conceptual framework and a self-assessment questionnaire that can be used by educational organisations from all sectors (i.e. primary, secondary, higher education) to review their organisational strategies for integrating and using effectively digital technologies for more comprehensive learning outcomes.

Why?
A European reference framework that adopts a systemic approach can add value by allowing for transparency, comparability and peer-learning.

OpenEdu supports the 2013 Communication 'Opening up Education: Innovative Teaching and Learning for all through New Technologies and Open Educational Resources'
MOOCs in selected EU countries

Number of valid responses after weighting: 117 (for overall) and 144 (for country comparison) – Data from OpenSurvey study. JRC-IPTS 2015.
Dimensions of open education - OpenEdu

Forthcoming JRC IPTS Report (2016) 'Opening up education: a support framework for higher education institutions (OpenEdu)'
Recently published reports:


Thank you!