

## Labour digital skills among Industries: a Macro Multipliers analysis

Topic: (7.2) Employment Analysis

Author: Elisa Foresi

Co-Authors: Maurizio CIASCHINI, Rosita PRETAROLI

1) The research question.

“Digital competence” is defined as a combination of knowledge, skills and attitudes appropriate to a digital context where a confident and critical use of information Society technology (IST) is needed for work, leisure, learning and communication” (European Commission, 2006). According to this definition, around 40% of the European Union population have an insufficient level of digital skills, of which 22% have none at all. Furthermore, schools and education systems are not yet ready to realise technology’s potential (OECD, 2016) though the potential of digital technologies in order to produce a transformation of education (Colby et al., 2014). A huge significant policy effort, systemic reforms in education and training and investments in human capital will be required in order to achieve the skills challenges (European Commission, 2016). In this respect, the European Commission’s 2010 Digital Agenda for Europe devoted a whole pillar to enhance digital skills, literacy and inclusion. In particular, the development of individuals’ digital skills has received much attention as a remedy for digital inequality (Matzat and Sadowski, 2012). The Digital Agenda for Europe implemented several investment frameworks to address digital equality and to help employees to identify their digital gap supporting them for a life transition (Leahy and Wilson, 2014).

Up to now, the measurement of skills of labour force remains highly problematic (Martinaitis, 2014). For this reason the OECD has developed a comprehensive Skills Strategy that helps countries to identify the strengths and weaknesses of their national skills systems, to benchmark them internationally, and to develop policies that can transform better skills into better jobs, economic growth and social inclusion (Directorate for Science and Innovation, 2016). This paper would analyse the better policies for those Industries that uses digital skills labour.

2) The method used.

The paper develops a multisectoral analysis of the labour digital skills among Industries through the Macro Multiplier approach. We build the Social Accounting Matrix (SAM) for Italy in which the labour is divided in terms of “formal”, “non formal” and “informal” competence and in addition into “digital skills” and “no digital skills”. Labour digital skills are defined according to the “formal competence” declared by the European Commission: “formal competence” depends on level of education and training. With this respect, “non formal” competence is gained in the workplace and through the activities of civil society organisations and groups, while “informal” competence is acquired during the life without the intentionality (European Commission, 2000). Within this delineation, the paper introduces a further classification of labour based on the time use of computer and computer with internet connection. Then the paper develops a extended multisectoral model (Ciaschini and Socci, 2003), implemented on the Italian SAM in order to identify the convenient endogenous policies much more oriented to those industries showing the highest utilization of digital skills labour.

3) The Data used.

In this paper we used the National Accounts data base (ISTAT, 2016), data on employment by industry and formal competence and digital skills data using the classification based on “digital economy and society” (ISTAT, 2016).

These data are compiled according to the 2008 SNA. The statistics in section “digital economy and society” describes the employees with formal and non formal competence based on the usage of computer and computer with Internet connection during the work. These data are in line with the Programme for the International Assessment of Adult Competencies (PIAAC) data.

4) The novelty of the research.

The contribution of this paper to the literacy consists of the disaggregation of labour in a multisectoral framework, SAM and multisectoral model, according the official definition of competence, following the OECD statistical of Information and Communications Technologies (ICT).