**DIGITAL SKILLS BOOST YOUR EARNING POWER: New evidence for OECD countries**

Skills at using information and communication technologies (ICT) are highly valued in modern labour markets, according to research by Oliver Falck, Alexandra Heimisch and Simon Wiederhold, to be presented at the annual congress of the European Economic Association in Geneva in August 2016. Analysing data from 19 OECD countries, their study shows that increasing an individual’s ICT skills can boost their earnings by as much as spending an additional year in education.

The researchers also find that having access to broadband kick-starts ‘learning-by-doing’ in ICT skills. Consequently, people who were lucky enough to enjoy broadband access early have higher ICT skills than their unlucky counterparts, even when they do not differ from them in their numeracy or literacy skills. The authors comment:

‘ICT skills are going to become increasingly important in our technology-rich world and their acquisition or absence have serious implications for individual labour market success and overall inequality. Thus, the rather lacklustre performance of some European countries in the OECD assessment of ICT skills is worrying.’

‘At the same time, ensuring access to the internet is an effective way of reducing the wage gap between digital natives – those who are capable of using modern ICT tools to get along in a digital world – and digital illiterates. In the light of these results, policy-makers’ efforts to expand broadband access – for example, the European Union’s Digital Agenda – are likely to be more beneficial than we previously thought.'

**More…**

‘The new literacy’ is the term Neelie Kroes, former Vice President of the European Commission, uses to describe an individual’s skill in mastering information and communication technologies (ICT). She says ‘the online world is becoming a bigger part of everything we do. No wonder these skills are becoming central in the job market.’ But although there is the widespread belief that ICT skills matter for labour market outcomes, solid empirical evidence on their wage effects has yet to be found.

A new study by Oliver Falck, Alexandra Heimisch and Simon Wiederhold is the first to provide robust causal evidence on how the labour market rewards ICT skills. The researchers exploit data on ICT skills in 19 countries from PIAAC – the OECD’s ‘PISA for Adults’.

These data are unique as they provide objective measures of ICT skills, which can be compared within and across countries. Previous studies relied on measures of ICT skills reported by survey participants themselves, which are prone to substantial mismeasurement.

The authors show that ICT skills are substantially rewarded in modern labour markets. The results imply that if an average worker in the United States – a country with ICT skills below the OECD-average – increased her ICT skills to the level of an average worker in Japan – the top performer (see Figure 1) – her wages would increase by about 8%.
This effect size is similar to the wage effect of an additional year of schooling in developed countries. Estimated returns to ICT skills are very similar in an international setting, exploiting cross-country variation in ICT skills, and in a within-country setting, exploiting variation in ICT skills between German municipalities.

Importantly, the authors show that these results do not just reflect spurious associations between wages and ICT skills. To estimate a causal effect of ICT skills on wages, the researchers exploit technical peculiarities in the underlying broadband infrastructure, because of which some persons got access to broadband earlier than others by chance.

The study shows that having access to broadband kick-starts learning-by-doing in ICT skills. Consequently, people who were lucky enough to receive broadband access early have higher ICT skills than their unlucky counterparts, but do not differ from them in their numeracy or literacy skills (also tested in PIAAC).

Concerning the channels through which ICT skills affect wages, the study shows that positive wage returns can partly be attributed to the fact that individuals with higher ICT skills often work in jobs that involve abstract tasks (requiring problem solving, adaptability, and creativity), which pay substantial wage premia. At the same time, people with high ICT skills work less often in jobs that are routine in nature, and are therefore easily automatable.

ICT skills are going to become increasingly important in our increasingly technology-rich world and their acquisition (or absence) has serious implications for individual labour market success and overall inequality. Thus, the rather lacklustre performance of some European countries in the PIAAC assessment of ICT skills (see Figure 1) is all the more worrisome.

But this research shows that ensuring access to the internet so as to kick-start learning-by-doing is an effective way of reducing the wage gap between ‘digital natives’ – those who are capable of using modern ICT tools to get along in a digital world – and digital illiterates. In the light of these results, efforts by policy-makers worldwide to expand broadband access (for example, the EU’s ‘Digital Agenda’) are likely more beneficial than previously thought.

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Contact details:
Alexandra Heimisch
Phone (office): +49 (0)89 9224 1226
E-mail: Heimisch@ifo.de

Figure 1: ICT skills around the world
Notes: Average ICT skills across countries. Sample: employees aged 20-65 years, no first-generation immigrants. Data source: PIAAC.