Same job, different tasks?

26/04/2018 Research, European Skills Index, European Skills Index, People and Skills, Matching Skills and Jobs, Future Jobs, Labour Market Context, EU

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Understanding the effects of technological changes on skills stands high at policy debates. Different methodological approaches try to grasp these effects and facilitate evidence-based policy decisions.

Literature[i] supports that the extent of the impact of technological change depends more on the type of tasks performed in a job, and not merely on the level of workers' skills. This 'task approach' allows for a better understanding of recent changes in the employment structure (notably the phenomenon of "job polarisation[ii]); but it can also offer interesting insights on skills needs in the context of the policy debate on the future of work (for example, how does technology affect the specific tasks of this job? And thus what skills are necessary to perform these tasks?). Yet, despite the usefulness and potential of this methodological approach, there is still no comprehensive framework of task measures which can be used for a detailed characterisation of the nature of work activity across different jobs.

To fill this gap, Eurofound developed a new set of task indices presented in its2016 European Jobs Monitor report. The indices allow for measuring of the task content (*what people do at work*) and of the methods and tools (*how work is organised and done*) across jobs in Europe. Combining data from different international surveys (Eurofound´s European Working Conditions Survey, OECD's Survey of Adult Skills PIAAC and the US Occupational Information Network ONET database), more than 30 indicators were developed that measure task content in three broad dimensions (physical, intellectual and social); and task methods and tools in two dimensions (work organization and technology). The full framework is shown in figure 1 below.

Figure 1: A classification of tasks according to their contents and methods

A. In terms of the content	B. In terms of the methods and tools of work
1. **Physical tasks:** aimed at the physical manipulation and transformation of material things: a. *Strength* b. *Dexterity* 2. **Intellectual tasks:** aimed at the manipulation and transformation of information and the active resolution of complex problems: a. *Information processing:* I. Literacy: i. Business ii. Technical iii. Humanities II. Numeracy: i. Accounting ii. Analytic b. *Problem solving:* I. Information gathering and evaluation of complex information. II. Creativity and resolution. 3. **Social tasks:** whose primary aim is the interaction with other people: a. *Serving/attending* b. *Teaching/training/coaching* c. *Selling/influencing* d. *Managing/coordinating*	1. **Methods:** forms of work organisation used in performing the tasks: a. *Autonomy* b. *Teamwork* c. *Routine* *I. Repetitiveness* *II. Standardisation* 2. **Tools:** type of technology used at work: a. *Machines* (excluding ICT) b. *Information and communication technologies.* I. Basic ICT II. Programming

Source: Eurofound (2016). The database containing standardised measures for each indicator in each specific occupation and sector combination (i.e. what is defined as "job") at the European level can be freely downloaded here.

But most policy makers are called to take country- and not job-specific decisions. Are the same jobs identical in all European countries in terms of the work activity, the way work is organised and the tools used to perform it? Can the task approach give insights to these questions? The results show[iii] that, with the exception of problem solving and dexterity, roughly one third of the total variability observed at the individual level in the task content can be attributed to differences across jobs; while the remaining two thirds are due to differences within jobs.

Similarly, this is observed for the use of machines. In the case of the indices measuring the use of ICT tools at work, the between-job differences account for an even higher share of the total variance (around 50%). Instead, within-job variation (i.e. the differences in tasks performed by workers in the same occupation, but in different organisations/work settings) seems to be higher for the indices measuring task methods, particularly regarding teamwork and routine. This suggests that the way work is organised is much less job specific than the task content. On the contrary, very small differences are observed among countries (in most cases around 4-5% of the total or less), regarding the variation in tasks contents, methods and tools[iv].

Overall, this analysis confirms that occupation and (to a lesser extent) sector are much more important structuring factors for the distribution of tasks in a job than the country where the job takes place. These

findings highlight that a deeper understanding of the distribution of tasks in occupations and industries is needed in order to set policy priorities for skills and training needs. The findings also merit a more detailed analysis in future work, notably in relation to the importance of job management and HR practices in shaping the way work is structured.

Annex

References

[1] Eurofound (Dublin).

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[i] Acemoglu, D. and Autor, D. H. (2011), 'Skills, Tasks and Technologies: Implications for Employment and Earnings, in: O. Ashenfelter and D.E. Card (eds.) *Handbook of Labor Economics*, Vol. 4B, Amsterdam: Elsevier, 1043-1171.

[ii] More information on skills polarisation can be found in the Analytical Highlight*Focus on Polarisation of skills in the labour market*

[iii] Please see figure A.1 of the Annex.

[iv] Although it is not possible to construct a national version of Eurofound's entire framework of indices for the whole set of jobs in the economy, it is possible to construct country-specific indices for a subsample of big jobs. Please see figure A.2 of the annex for a relative example.