

High or low? Approaches to measuring skills of labour force

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Measuring skills: motivation

Problematique:

- Skills is an important variable in explaining productivity and wages;
- Yet, there is lack of adequate instruments to measure skills of labour force:
 - Human capital approach: skills = highest level of education

Definitions:

- Qualifications: formally recognised outcomes of education or training (Tessaring 2004).
- Skills (in the broadest sense): combination of knowledge and abilities that affect speed and quality of performance of a tasks.

Conceptualisation (1)

Human capital approach:

- Underlying logic: E&T → accumulation of skills → human capital owned by an individual;
- Measurement strategy: highest level of qualification, performance in int. tests (Hanushek Kimko, 2000), incidence of training and years in employment (Portela 2001).

Adult competences approach:

- Underlying logic: assess the level of transferable skills of adults
- Measurement strategy: PIAAC surveys of literacy, numeracy and problem solving skills in technology rich environments.

Conceptualisation (2)

Job requirements approach:

- Underlying logic: E&T, previous experience indicate individual potential to act that may or may not be realised subject to performance domain (task, work organisation, technology, etc.);
- Reference system: skills used in workplace represent the skills a person has (Felstead et. al. 2007);
- Measurement strategy: tailor made questionnaires.

Implications:

1. Level of skill depend on:

- a) characteristics / potential of individual (E&T; past experience, etc.);
- b) Performance domain (technology, work organisation, etc.).

2. Skills are dynamic:

- a) Increase due to: quantity and quality of E&T + upgrading of work;
- b) Decrease with deskilling of work.

3. Two-way dependence between skills and economic development.

Job requirements approach: measurement (1)

Overall idea: attempt to capture characteristics of work

Dimensions (Martinaitis, 2014):

- Degree of uncertainty at work (complexity of tasks)
- Level of autonomy
- Continuous skill-building (i.e. opportunities to learn)

Data:

- European Working Conditions Survey, 2015
- Carried out by Eurofound and contains info on working arrangements of almost 45 thousand respondents from 35 European countries.

Job requirements approach: measurement (2)

Dimen.	Questions in the EWCS (2015)	Coding
Degree of uncertainty	Q53c. Generally, does your main paid job involve solving unforeseen problems on your own?	Yes (1) No (0)
	Q53e. Generally, does your main paid job involve complex tasks?	
Level of autonomy	Q54a. Are you able to choose or change your order of tasks?	Yes (1) No (0)
	Q54b. Are you able to choose or change your methods of work?	
	Q54c. Are you able to choose or change your speed or rate of work?	
	Q61c. You are consulted before objectives are set for your work?	Always (1) M.o.t. (0.75) Somet. (0.5) Rarely (0.25) Never (0)
	Q61d. You are involved in improving the work organisation or work processes of your department or organisation?	
	Q61e. You have a say in the choice of your work colleagues?	
	Q61i. You are able to apply your own ideas in your work?	
Q61n. You can influence decisions that are important for your work?		
Continuous skill-building	Q53f. Generally, does your main paid job involve learning new things?	Yes (1) No (0)
	Q65a. Over the past 12 months, have you undergone any training paid for or provided by your employer?	
	Q65c. Over the past 12 months, have you undergone any on-the-job training (co-workers, supervisors)?	
	Q65d. Over the past 12 months, have you undergone any other training?	

Construction of index

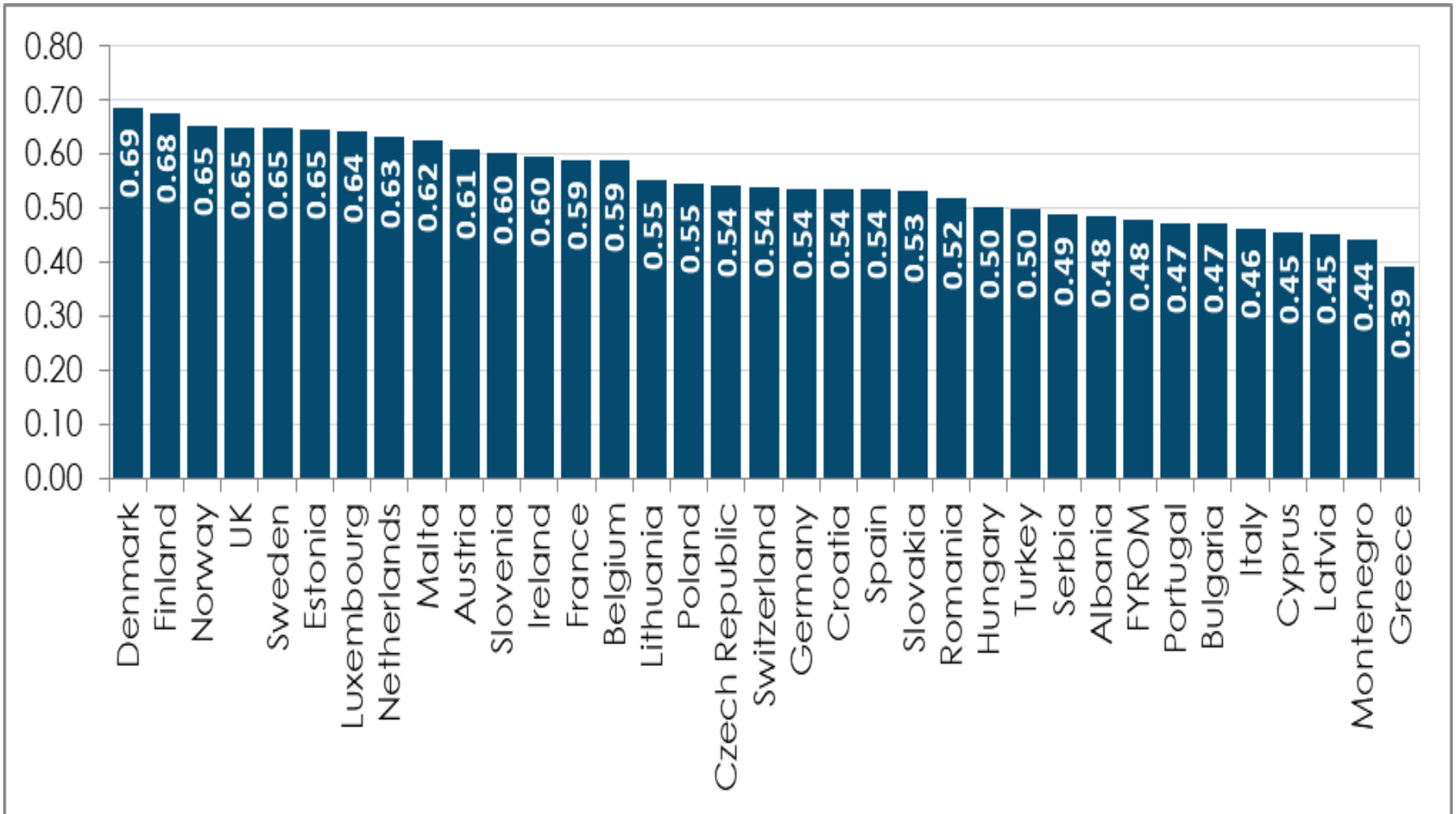
Dimension	Cronbach alfa	Accuracy
Uncertainty	.5	67%
Autonomy	.83	Spear. Cor. .34
Skill building	.59	60%

Sub-indices for each dimension:

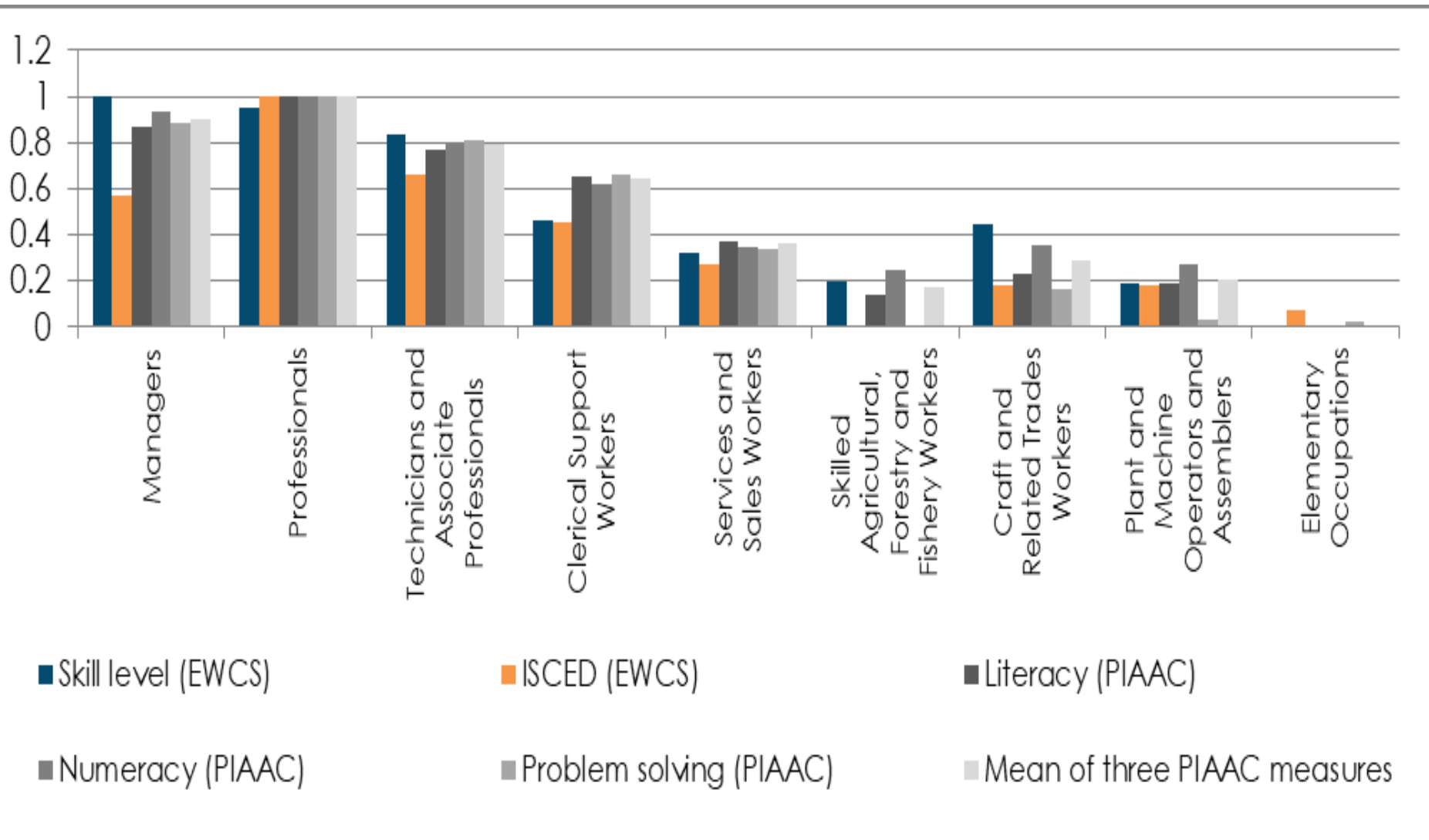
	Autonomy	Uncertainty	Skill building
Autonomy	1	-	-
Uncertainty	0.174*	1	-
Skill-building	0.277*	0.234*	1

Aggregate index assigns each dimension equal weights

Skills level: basic results



Skills level: basic results by occupational group



External validity

	Pearsons's correlation with wage (ISCO-08 level two)	Spearman's correlation with wage (individual level)**
Skill level	0.905***	0.384***
ISCED	0.877***	0.282***
PIAAC Literacy	0.876***	-
PIAAC Numeracy	0.900***	-
PIAAC Problem solving	0.802***	-
Mean of the PIAAC measures	0.886***	-