



CEDEFOP

European Centre for the Development  
of Vocational Training

50  
YEARS  
SHAPING LEARNING AND  
SKILLS IN EUROPE

# Cedefop's European skills and jobs survey



# Strengthening skills intelligence for Europe



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# Cedefop surveys make it possible to analyse **jobs and skills mismatch from various angles**



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# Second European skills and jobs survey

## Digitalisation and skill mismatch

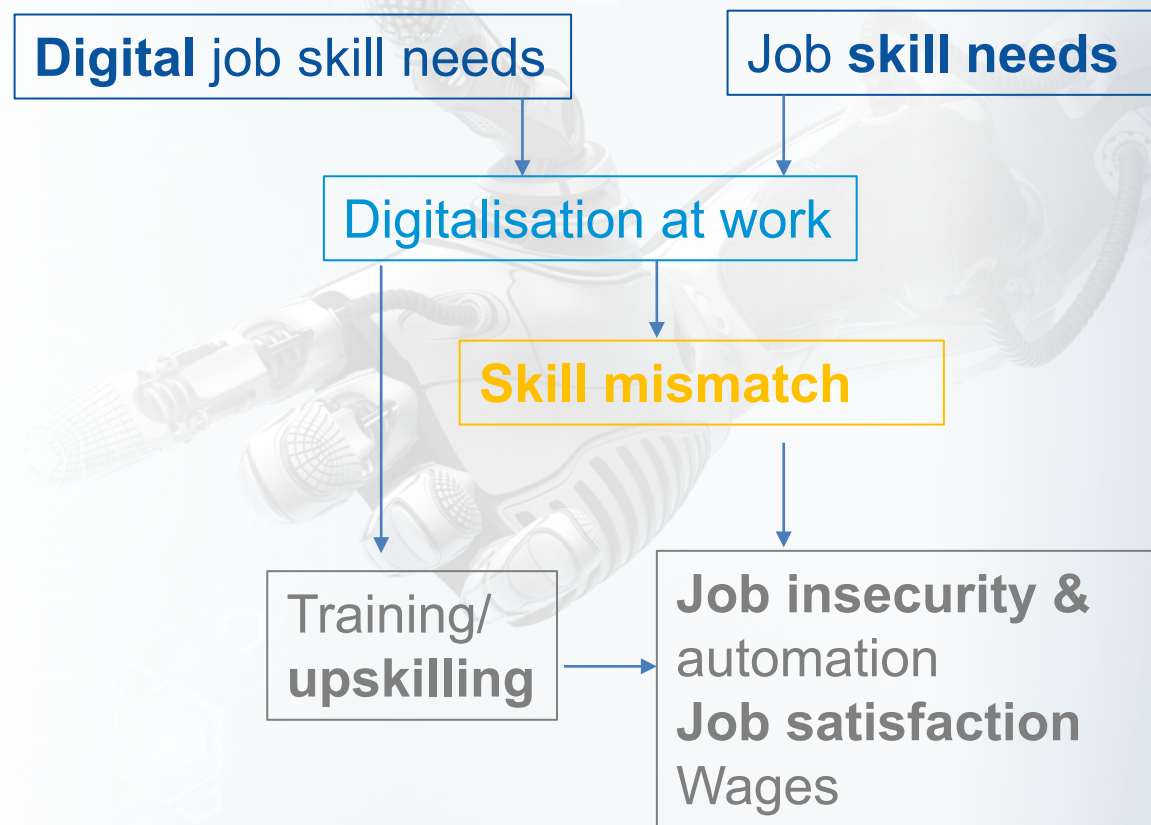
### Main research questions:

- What do EU workers do at work?
- Basic or complex(digital) skills use?
- New digital technologies?
- Skill gaps and remedial learning?

### Better measurement of:

- Job-skill requirements
- Digitalisation/digital work
- (Digital) skills complexity
- Work organisation
- Skill mismatches / training

### Pillars and conceptual design



# Survey development

Factual questions

Explicit scaling

Generalisable

Common-objective scales

Discrete responses

Short time window

Minimal prospective Q's

Job as reference



**Expert  
group**



**Extensive  
pre-testing**



**High quality  
translation**



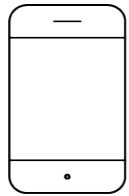
**Robust  
fieldwork**

**EUROPEAN SKILLS & JOBS SURVEY**

# ESJS2 survey ID

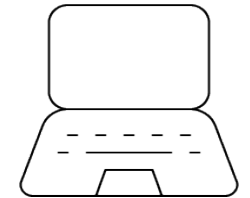
## SURVEY METHOD

RDD CATI



Weighting

ONLINE (CAWI)



PSM

### COUNTRIES SURVEYED

EU-27  
+ Iceland  
+ Norway

### TARGET NUMBER OF INTERVIEWS

Ranging from 1 000 to 3 000 –  
total of **46 213 observations**.  
500 by RDD CATI  
(except 1000 in MT, CY)

### TARGET POPULATION

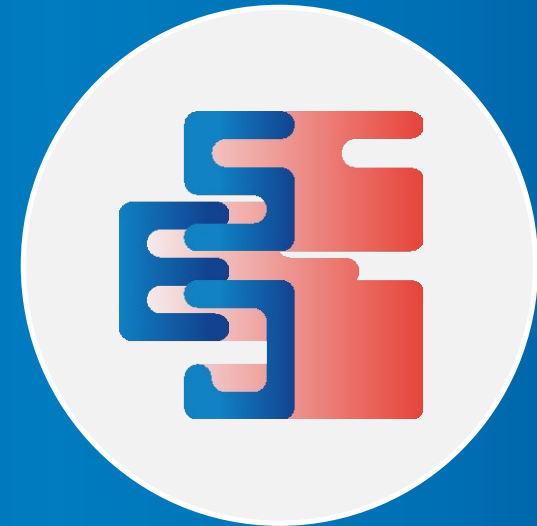
All adults (aged 25-64) in  
wage and salary employment  
(i.e. paid employees, excluding  
self-employment and family  
workers), who live in private  
households

### DURATION

About 20-25 min

# ESJS2 note of caution

- Mixed mode (CATI-CAWI) sampling (PSM, weighting)
- Some variables only in online sample
- Small country sample sizes
- Digitalisation – ‘major’ changes
- Digital activities – not DigComp approach
- Skill mismatch – subjective
- Only task – not job - automation



# ESJS2 online tool



**29**  
countries  
EU-27 plus  
Norway and  
Iceland

**46 213**  
EU+  
adult workers

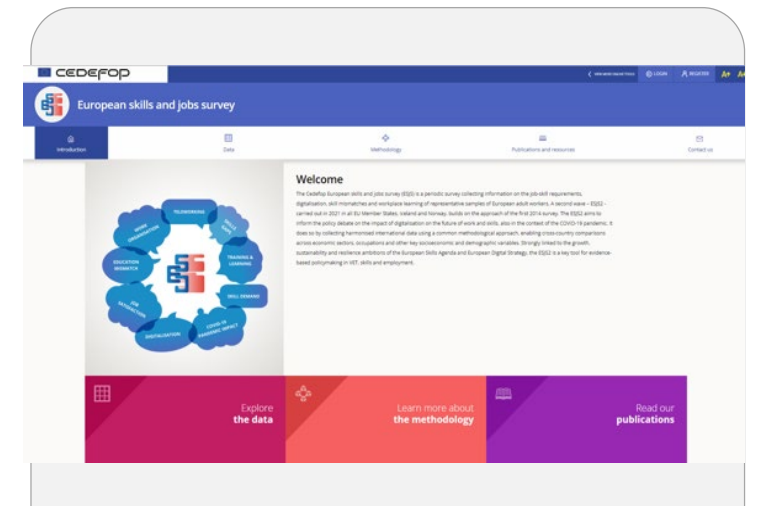
**Representative  
data**  
of EU+  
labour markets

**More  
than  
80**  
indicators

## COMPARATIVE EU+ INFORMATION ON

- Skill demands
- Work organisation
- Remote work
- Digitalisation and automation
- Skill gaps and mismatch
- Training and learning for work
- Covid-19 pandemic impact

<https://www.cedefop.europa.eu/en/tools/european-skills-jobs-survey>



# ESJS2

## research and policy analysis

[Challenging digital myths](#)

[Setting Europe on course for a human digital transition](#)

[Untangling labour shortages in Europe: unmet skill demand or bad jobs?](#)

VET needs to go digital: Upgrading the backbone of Europe's twin transition

[What drives workers' participation in digital skills training? Evidence from Cedefop's second European skills and jobs survey \(JRC-Cedefop\)](#)

Divergent or convergent? Gaps in skilled work between EU and Western Balkans (ETF-Cedefop)

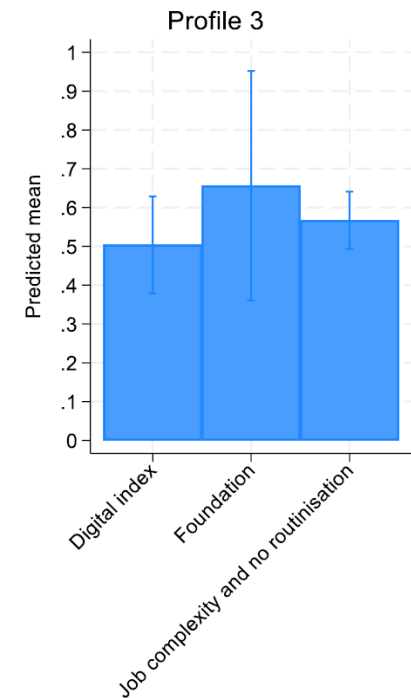
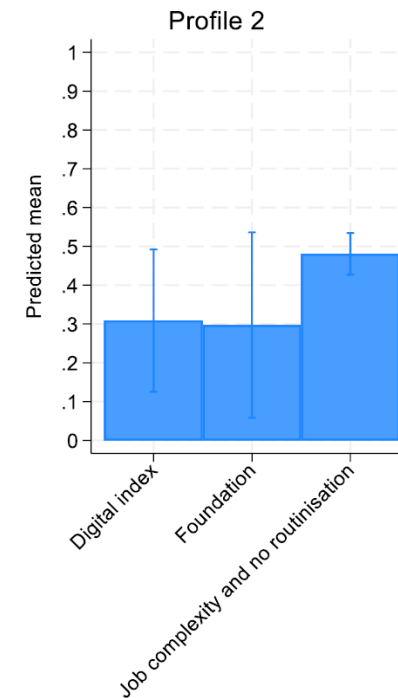
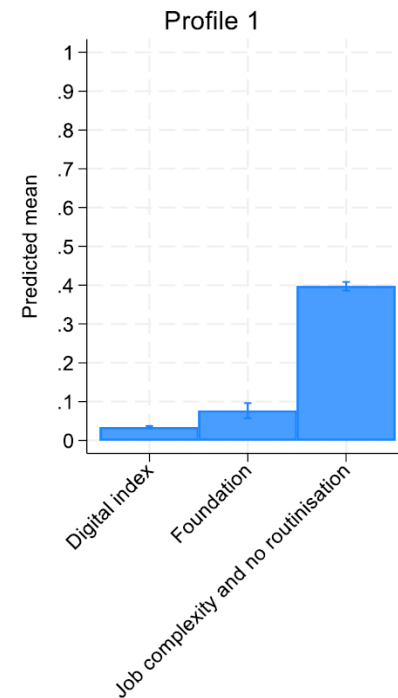


### Under review

- Human-centred technological change?  
Using skills as an agent for change
- Are AI skills a reward or a gamble?  
Deconstructing the AI wage premium in Europe

# Human-centred technological change?

- We identify a latent categorical variable representing technology-job design worker profiles.
- We use #ESJS2 information on:
  - Digital skill needs
  - Foundation (literacy, numeracy) skill needs
  - Job complexity
- We examine the relationship between technology-job design profiles and labour market outcomes:
  - Job satisfaction
  - Hourly wage
  - Automation expectations



# Technology complements skills, but digital transition needs to be well-managed

Variables	(1) Job satisfaction	(2) Fear of being displaced	(3) Hourly wage (ln)
Profile 1	0 (.)	0 (.)	0 (.)
Profile 2	0.00988 (0.24)	0.268*** (5.43)	0.0305** (2.68)
Profile 3	-0.0179 (-0.37)	0.346*** (6.52)	0.101*** (6.27)
Wages			
Under lowest quartile	0 (.)		
Between lowest quartile and median	-0.00900 (-0.09)		
Between median and highest quartile	0.158 (1.30)		
Above highest quartile	0.394** (3.09)		
New digital technologies	-0.0910** (-3.04)	0.0452* (1.98)	-0.000520 (-0.05)
More frequent use of dig. tech. due to Covid-19 pandemic	0.0249 (1.05)	0.281*** (10.51)	0.0578*** (7.19)
Skills utilisation (great extent)	0.312*** (12.19)	-0.156*** (-4.43)	0.0364*** (4.50)
Satisfaction with relations with supervisors	0.325*** (23.92)	-0.0300*** (-6.55)	
Observations	28772		

Standard errors in parentheses

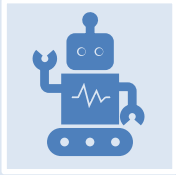
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Demographic characteristics include: gender, age, quadratic age, highest level of education, required level of education, type of area.

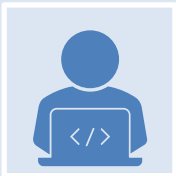
Job characteristics include: hours worked, type of contract, firm size, private sector, tenure, remote work, new working methods.

NACE, ISCO, and country codes are also included.

# AI skills wage premium



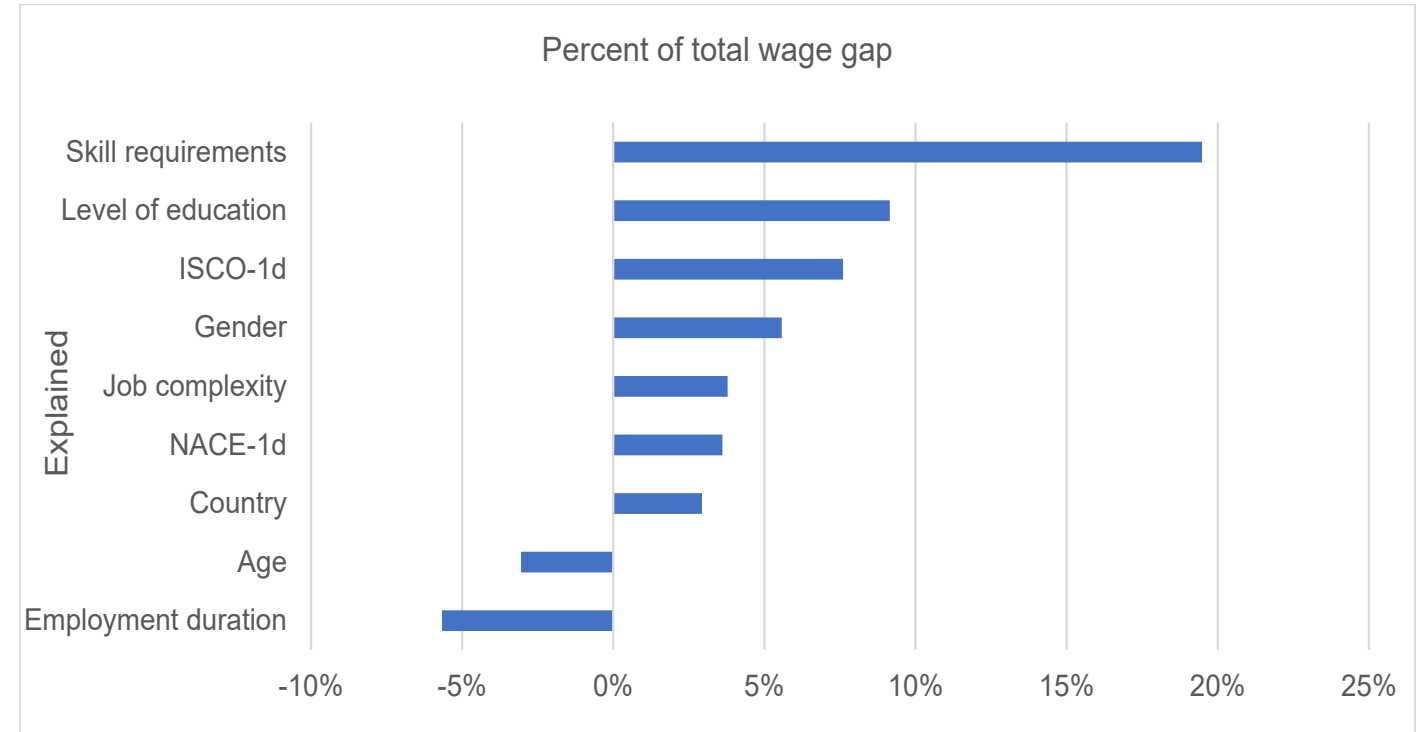
AI programmers are employed in **more diverse, new jobs** and with more **variable pay** than non-AI programmers.



**4-8% higher wages** than non-AI programmers.

**12-24% higher wages** than similarly educated workers.

Figure A1 Percentage contributions of predictors to the explained component



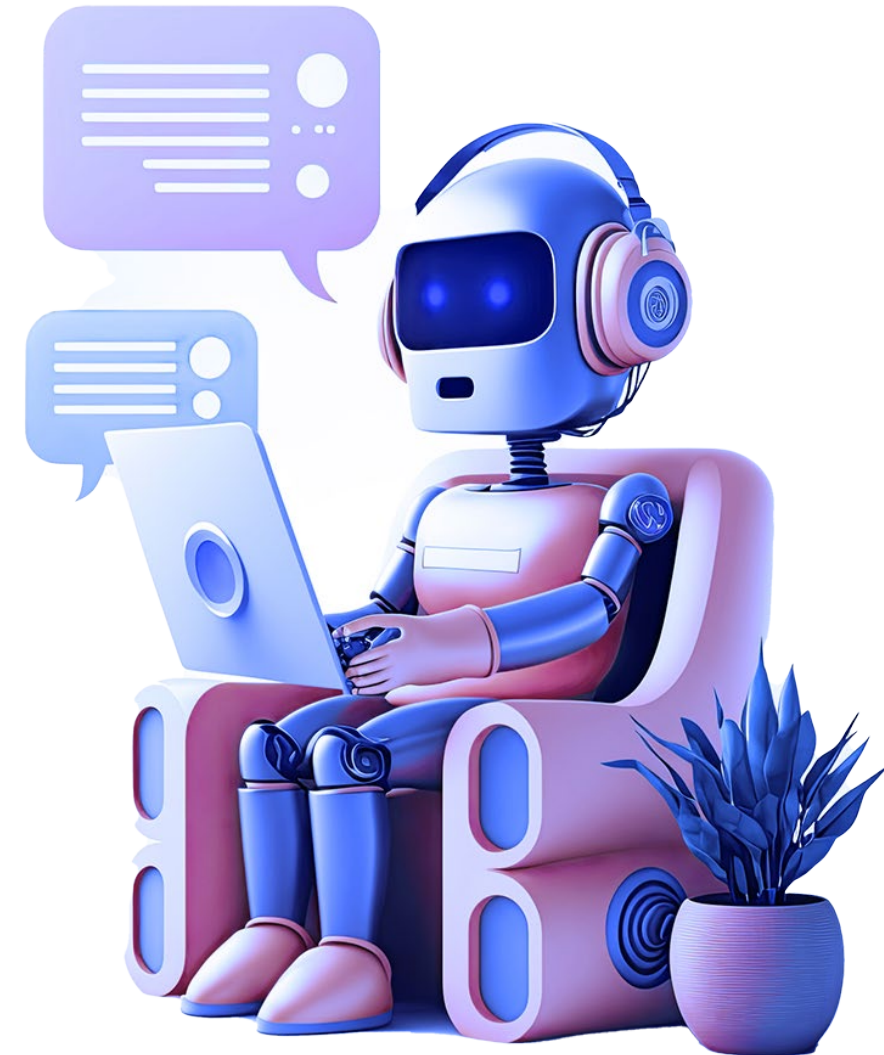
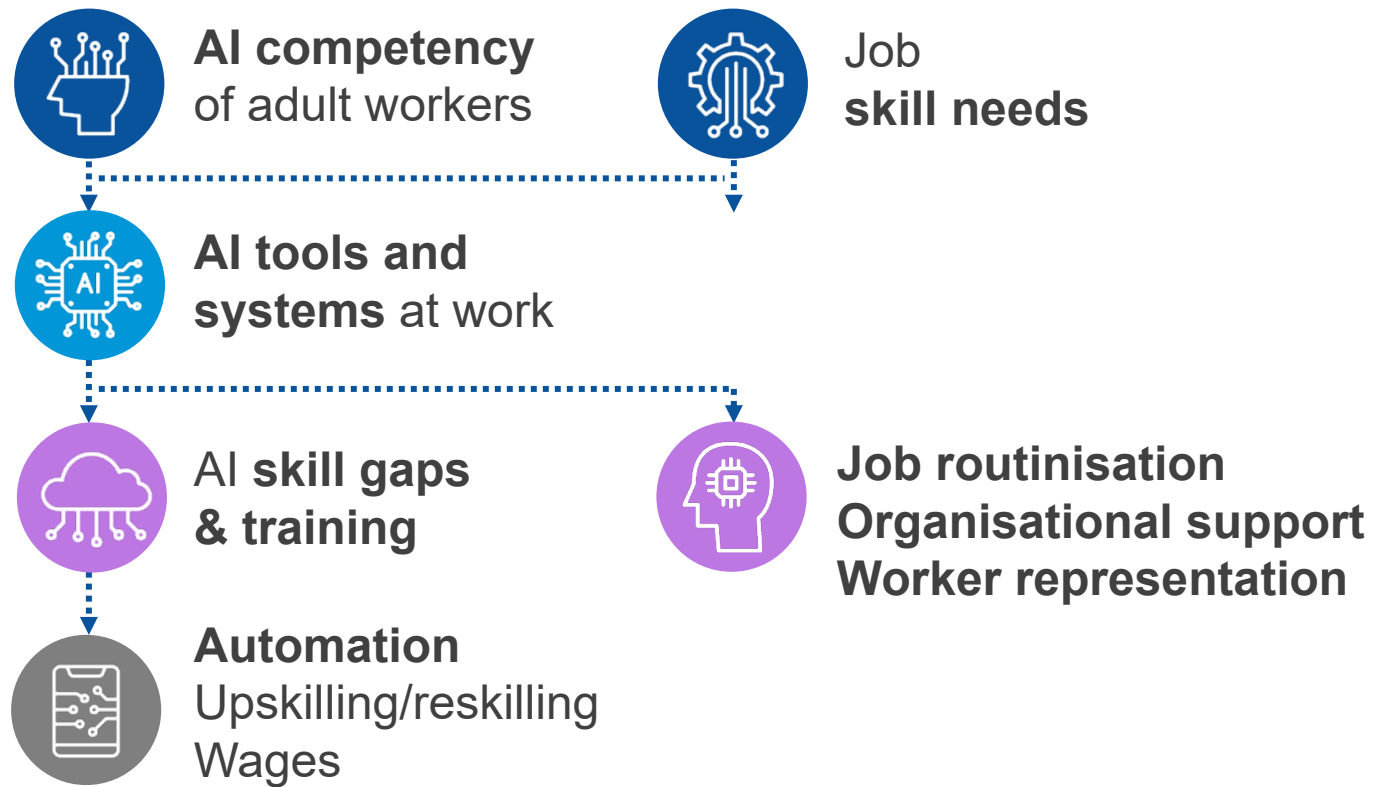
NB: OB decomposition of equation (1) using the log hourly wage as dependent variable and specification (4). The construction of the job complexity and job-skill requirements indices is described in Cedefop (2024a). The detailed decomposition is subsumed by sets of covariates. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ ; Robust standard errors in parenthesis.

Source: Cedefop second European skills and jobs survey (ESJS2)

# ESJS2 supplement

## Artificial Intelligence

### Cedefop AI skills survey (2024)



# Conference outcomes

- **Cedefop working paper series** – conference proceedings
  - light editing
  - papers submitted by spring 2025
  - publication in Q3-4 2025
- **Journal of Education and Work** (eds. Craig Holmes, University of Oxford & Cedefop)
  - limited number of papers following peer-review
  - papers submitted by summer 2025
  - publication end of 2025 or early 2026

# Thank you

[www.cedefop.europa.eu](http://www.cedefop.europa.eu)

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