

# *DIGITALISATION AND DIGITAL TRANSITION*

## *FIRST FINDINGS IN THE ETF PARTNER COUNTRIES*

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# SUMMARY OF THE PRESENTATION

- The *ESJS in a nutshell*. What's in for the ETF partner countries?
- The post-pandemic remote work: *a new digital divide?*
- Technological changes and *digital upskilling* on the ETF/EU labour markets
- The *digital transition*: the main challenges in the EU/ETF partner countries
- Digitalisation, *skills gaps* and the *learning potential*: ESJS and the *EU agenda*



*... in numbers*

1

35 COUNTRIES SURVEYED BY 2023

About 50,000 employees surveyed (sample size 1000 - 3000/country)

Job-skill requirements (skills demand approach), skills mismatch (vertical, gaps, horizontal), digitalisation, workplace learning in one highly versatile statistical tool



relevant (EU Skills Agenda, EU Digital Strategy, European Education Area)

Conducted in two rounds (6 countries 2022/23 & 3 countries\* 2024/25)

*\*Subject to discussion and confirmation of ETF's Single Programming Document (SPD)*

# WHAT DO WE WANT TO FIND OUT ? *ETF PCs vs EU*

Workers holding  
higher  
qualifications than  
needed



Jobs requiring manual  
skills ...

... or computerized  
machines

Jobs with low/high  
digital needs ...

... or workers writing  
code at workplace



European  
skills & jobs  
survey



The pandemic: its  
impact on workers ...

... and those working  
now remotely

# IN A NUTSHELL

**SOCIO-DEMO**  
(ex. age, sex,  
education,  
urbanisation..)

**JOB-RELATED INFO**  
(ex. sector,  
occupation, tenure,  
firm-size, contract  
type, working hours,  
earnings, job  
satisfaction...)



**NATURE OF WORK**  
(ex. routine,  
autonomous,  
standardised,  
learning-intensive)

**JOB-SKILL  
REQUIREMENTS  
SKILLS MISMATCH  
DIGITALISATION  
WORKPLACE  
LEARNING**



# DIGITALISATION AND DIGITAL TRANSITION

Post-pandemic remote work: a new digital divide?

Digital upskilling: which are main changes at the workplace?

Digitalisation in the EU/ETF labour markets

The digital transition: what to expect?

Going digital: fear, facts or fiction?

The digital transition: what challenges for ETF?





# The digital transition in 2022: **a skills revolution?**



## Digitalisation

The post-pandemic digital transformation in the Western Balkans countries\*

**WB5: 62% (EU: 82%)**

Use of Internet at workplace

**WB5: 27% (EU: 44%)**

New digital technologies introduced at workplace

**WB5: 33% (EU: 42%)**

Training for digital skills



## Digital transition

Main findings and challenges in the Western Balkans countries\*

**WB5: 45% (EU: 63%)**

Need to develop their overall skills

**WB5: 38% (EU: 52%)**

Need to develop their digital skills

**WB5: 15% (EU: 35%)**

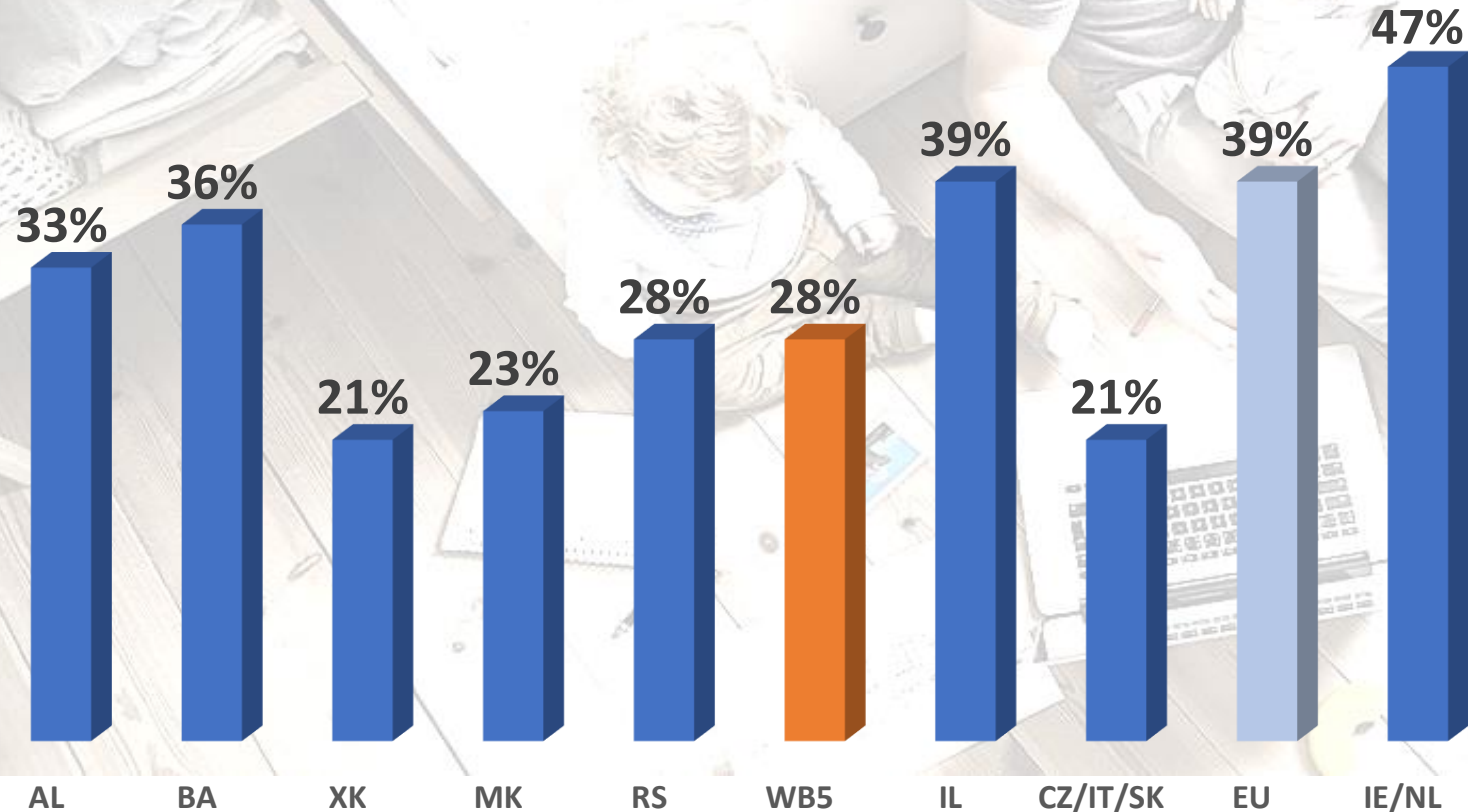
Digital upskilling (ie had to learn)

**WB5: 35% (EU: 45%)**

Job insecurity-lack of digital skills

# Remote work: *a new digital divide?*

In the last year, did you do any work as part of your main job from a location other than your employer's premises?



28% of employees in WB5 countries\* have worked away from their employer's premises in 2022 (EU: 39% in 2021)

*WFH accentuated existing labour market inequalities*

31% EDU-high

24% EDU-low

32% Skilled occupations

21% Elementary occupations

54% Computer programmers

32% Financial/Insurance

19% Health/Care

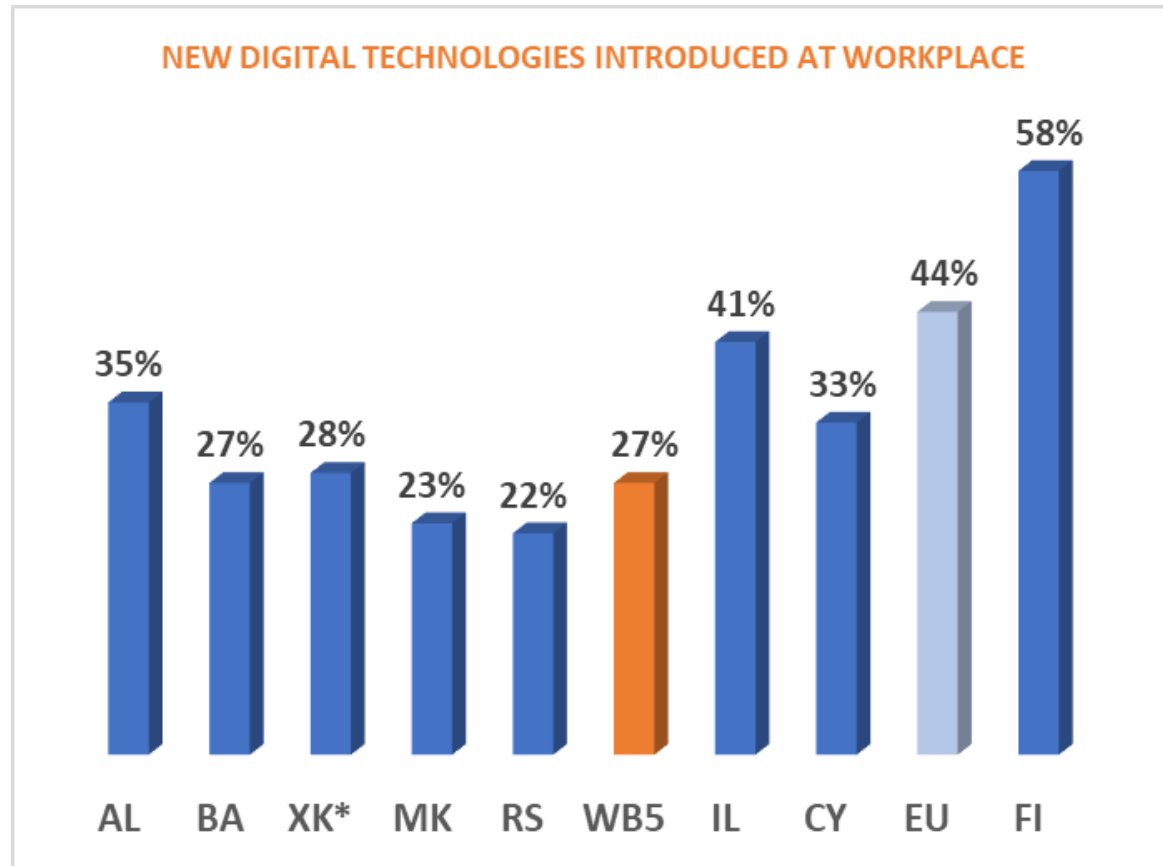
17% Education

9% Accommodation/Food



# Digital upskilling changes at workplace

In the last year, did any of the following changes took place in your workplace?

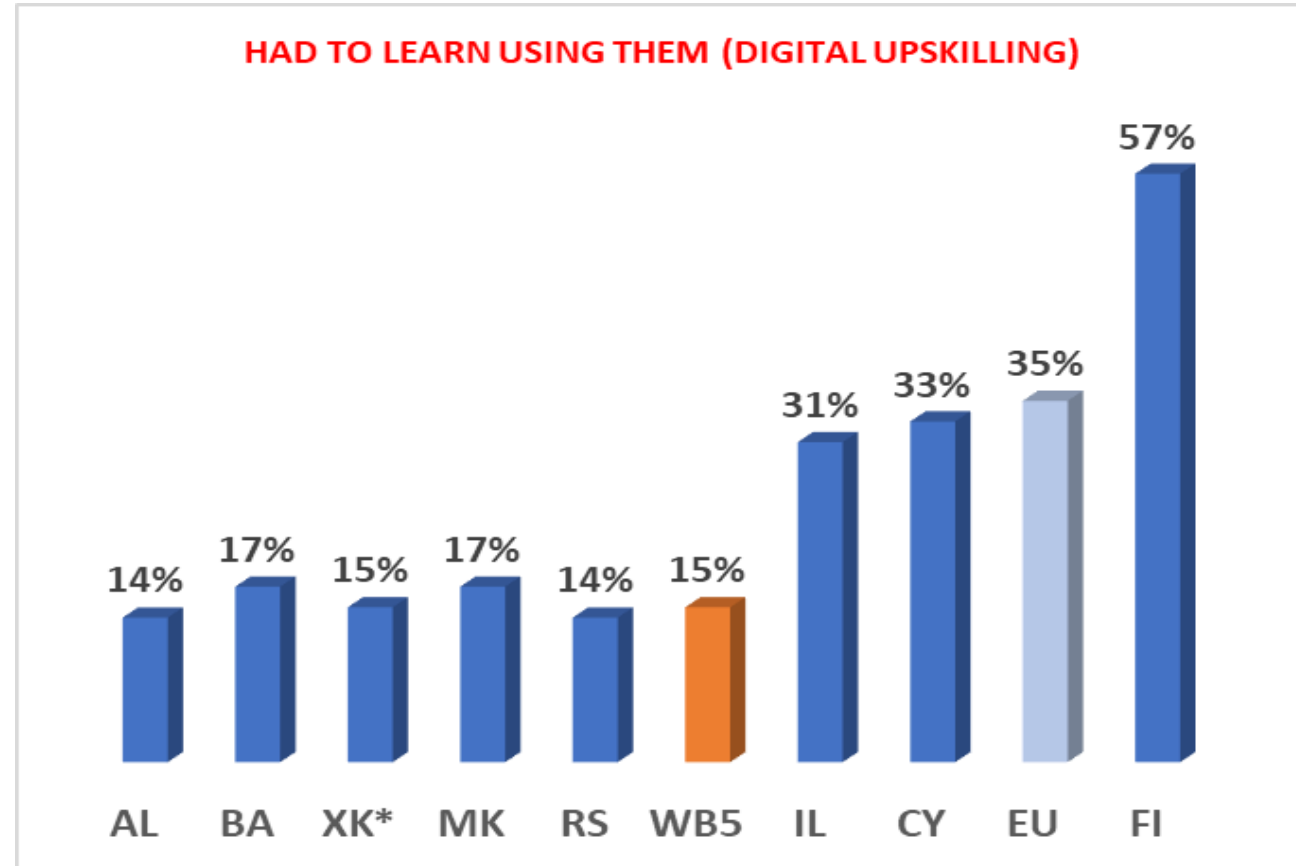


Source: Cedefop-ETF, European Skills and Jobs Survey (2021/2022)

15% of employees in WB countries\* had to learn to use new digital technologies at work in 2022

New digital technologies (ex. new computer systems/devices or programmes, but not minor updates)

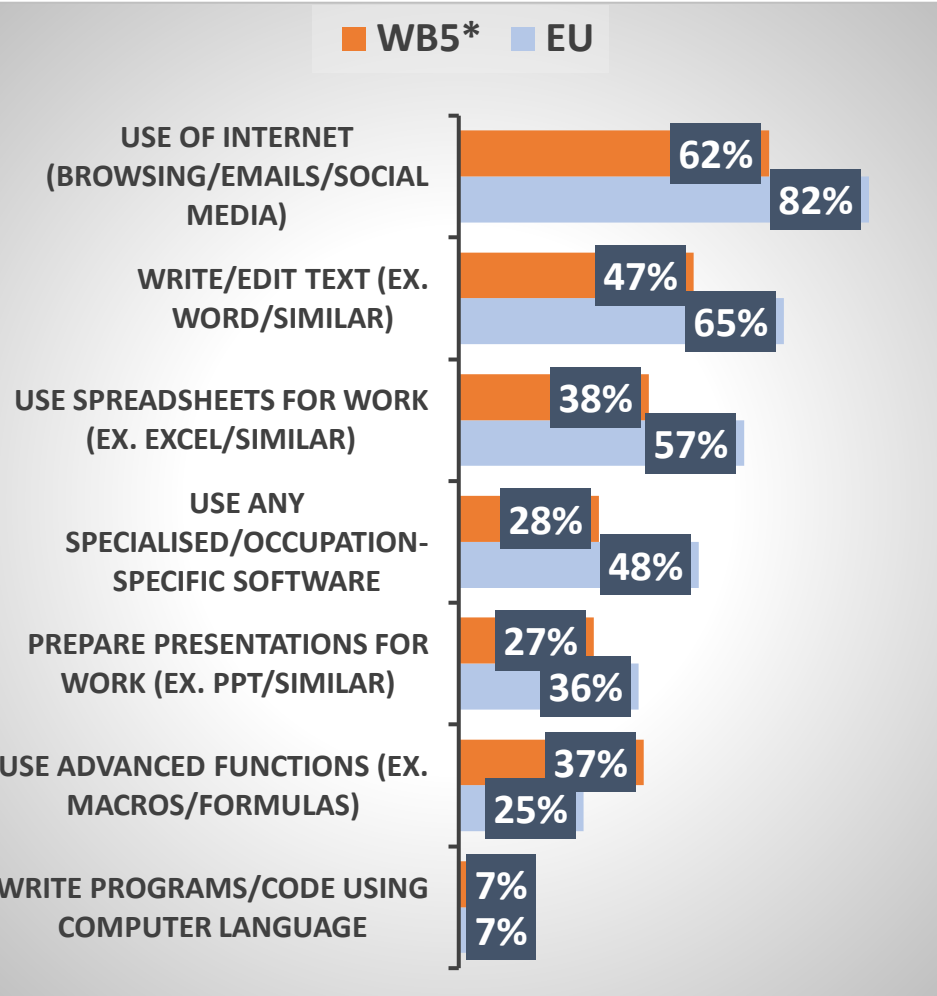
If digital upskilling had a substantial change/tangible impact on the jobs and likely triggering up/re-skilling



\*Albania, Bosnia & Herzegovina, Kosovo\*, N. Macedonia, Serbia (2022, *provisional data*), EU average (2021)

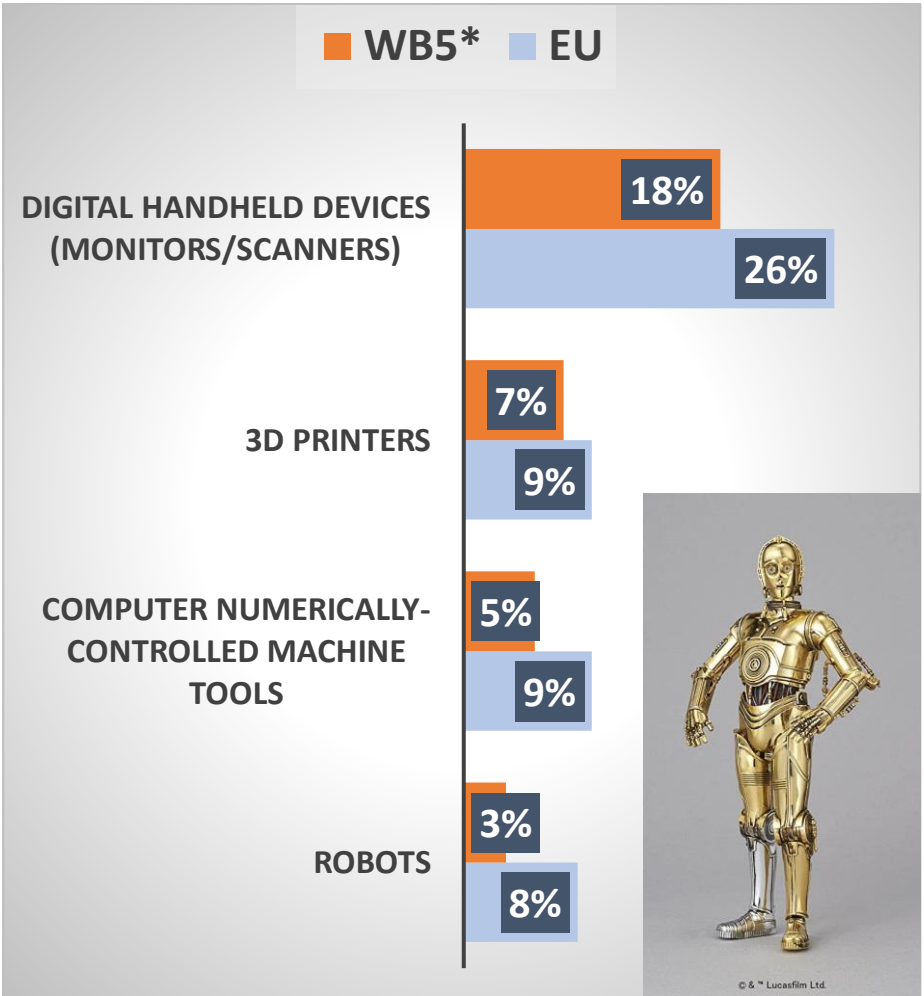
# (Low) digitalisation in the EU/ETF jobs?..

Did you use computing devices to do the following activities as part of your main job in the last month?



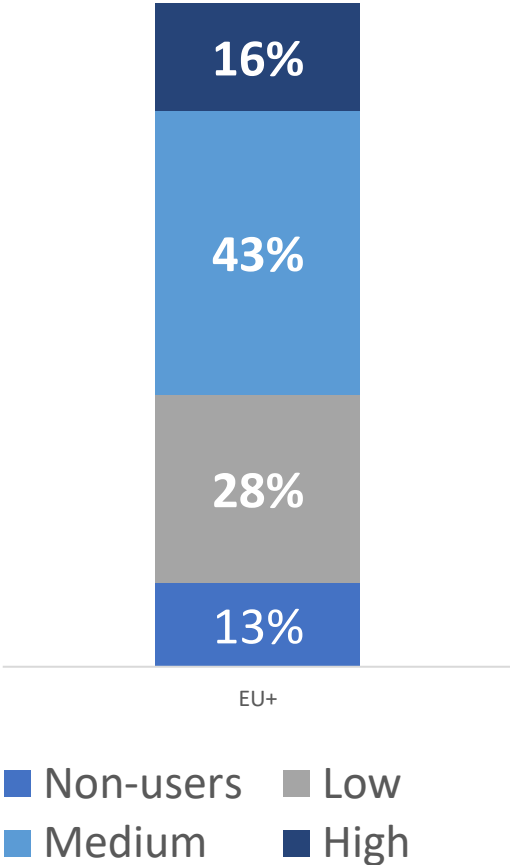
Source: Cedefop-ETF, European Skills and Jobs Survey (2021/2022)

As part of your main job, did you work with or operate any of the computerised machinery below in the last month?



\*Albania, Bosnia & Herzegovina, Kosovo\*, N. Macedonia, Serbia (2022, provisional data), EU average (2021)

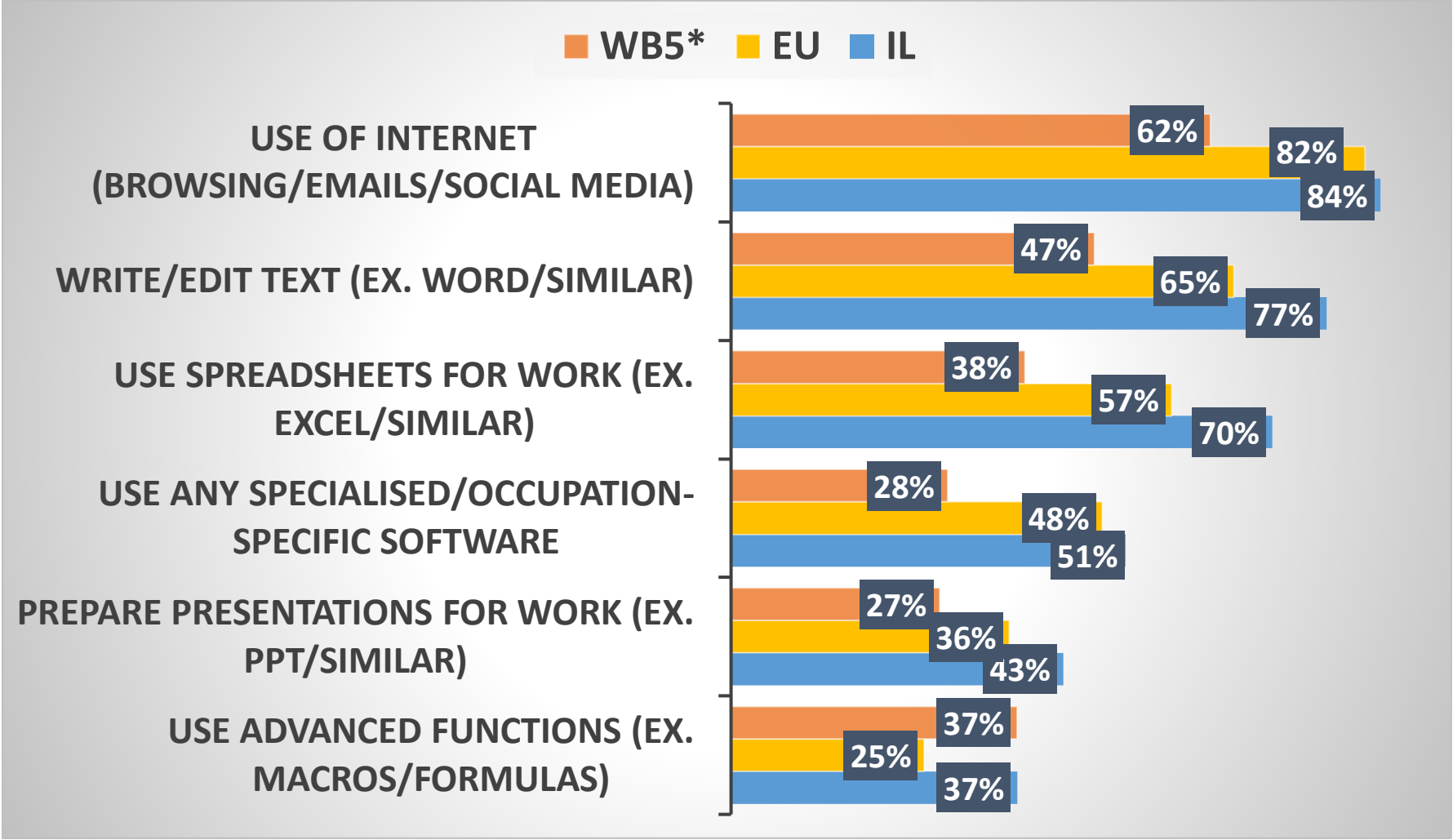
Digital Skills Intensity index, EU+ countries  
Source: Cedefop



# ..but not in all partner countries

Did you use computing devices to do the following activities as part of your main job in the last month?

Four in five Israeli employees use the Internet at work and ~one in twenty use robots or 3D printers



Use of computerised machineries

13%

Monitors/Scanners

6%

3D printers

6%

Robots

4%

CNC machines

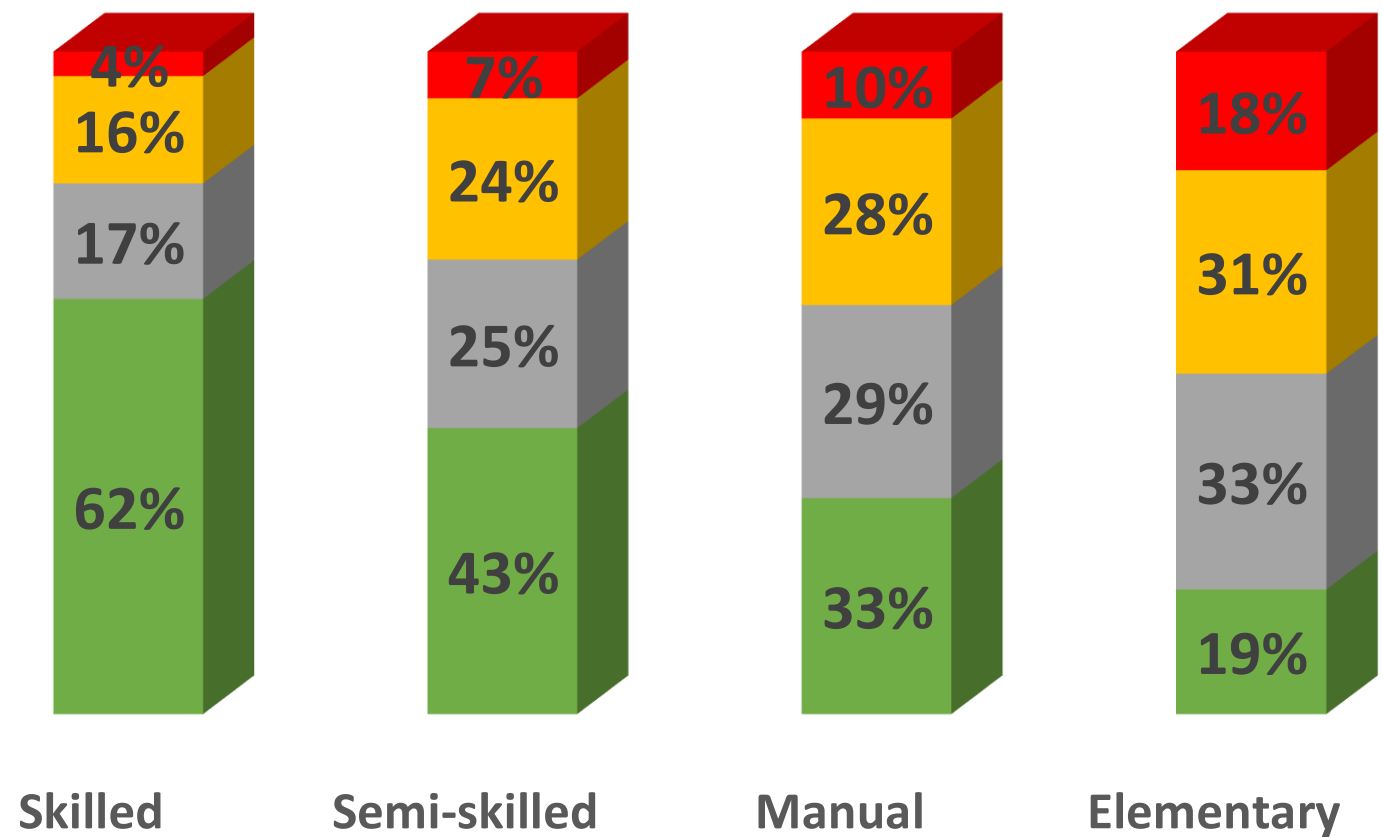
Source: Cedefop-ETF, European Skills and Jobs Survey (2021/2022)

\*Albania, Bosnia & Herzegovina, Kosovo\*, N. Macedonia, Serbia (2022, provisional data), EU average (2021)

# Digitalisation drives skill gaps..

To what extent do you need to further develop your overall level of knowledge/skills to do your job better? 45% of WB5\* adult employees have ‘learning potential’ while indicating substantial unmet learning needs

Greatly Moderately Slightly Not at all



**38%**  
Computer/ICT skills

**35%**  
Social skills

**23%**  
Job-specific skills

**23%**  
Numeracy skills

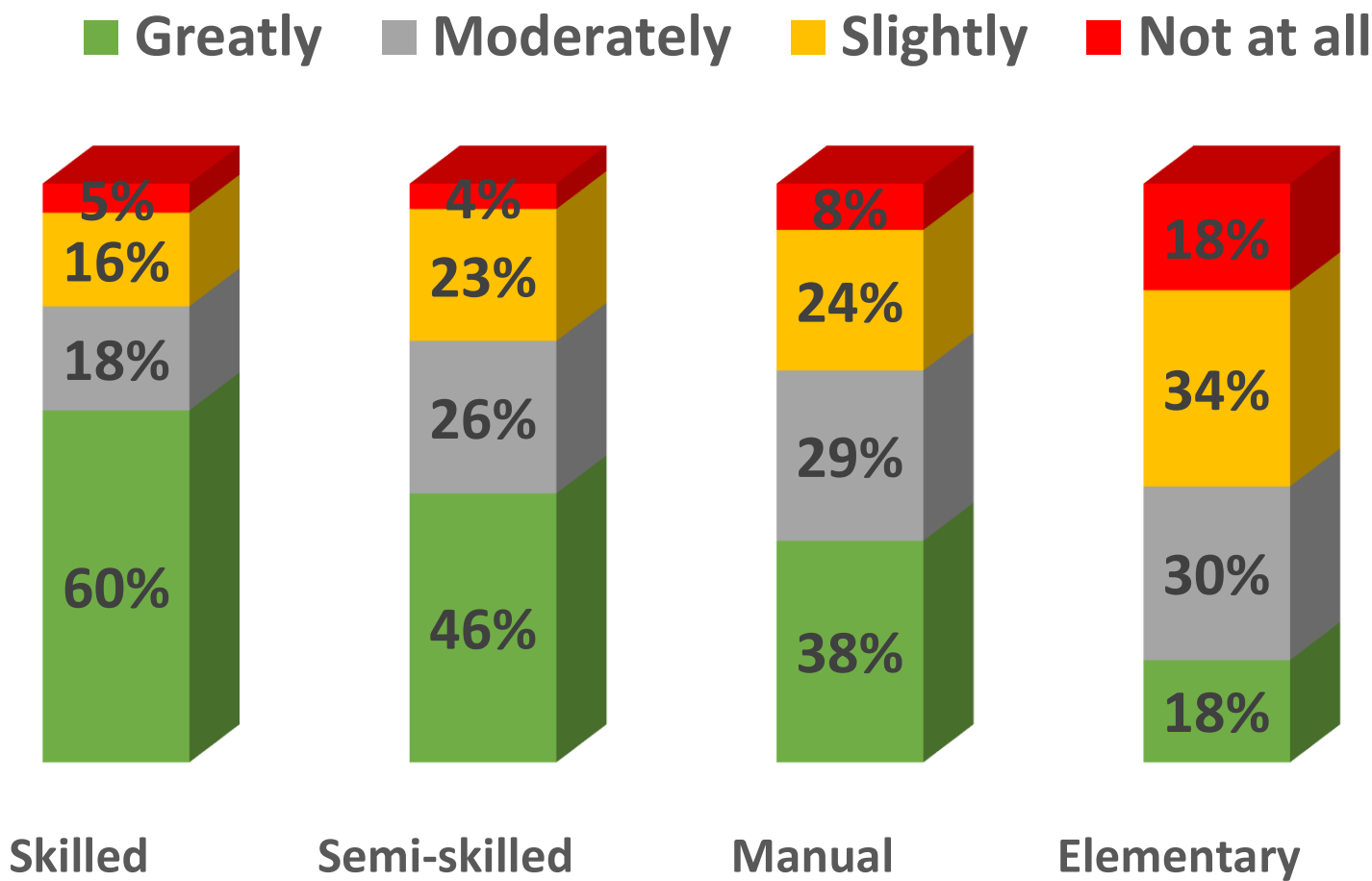
Source: Cedefop-ETF, European Skills and Jobs Survey (2021/2022) \*Albania, Bosnia & Herzegovina, Kosovo\*, N. Macedonia, Serbia (2022, provisional data)  
Note: Totals don't add up to 100 due to those with an unknown/unidentifiable status/no response

# ..sizeable & (often) dynamic (Despite) low/modest digital demands

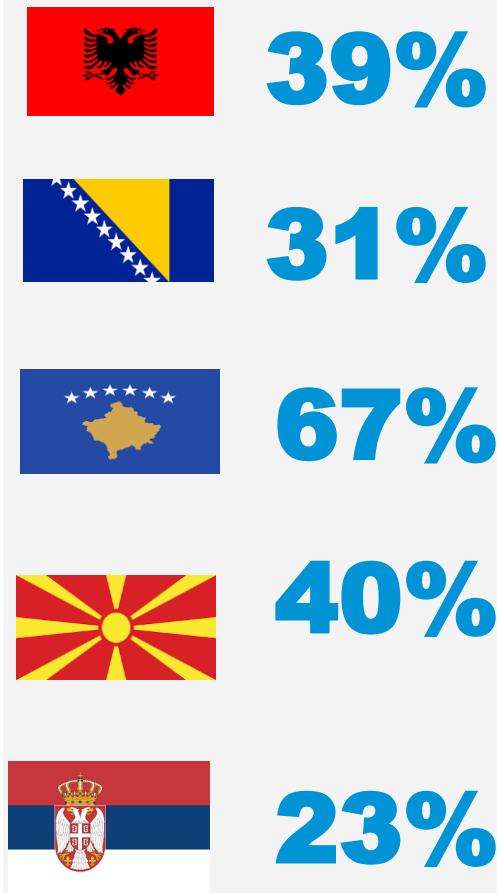


To what extent do you need to further develop your computer/IT skills to do your job better?

learning potential esp. for high-skilled\*



Greatly & Moderately



Source: Cedefop-ETF, European Skills and Jobs Survey (2021/2022)

\*Albania, Bosnia & Herzegovina, Kosovo\*, N. Macedonia, Serbia (2022, provisional data)

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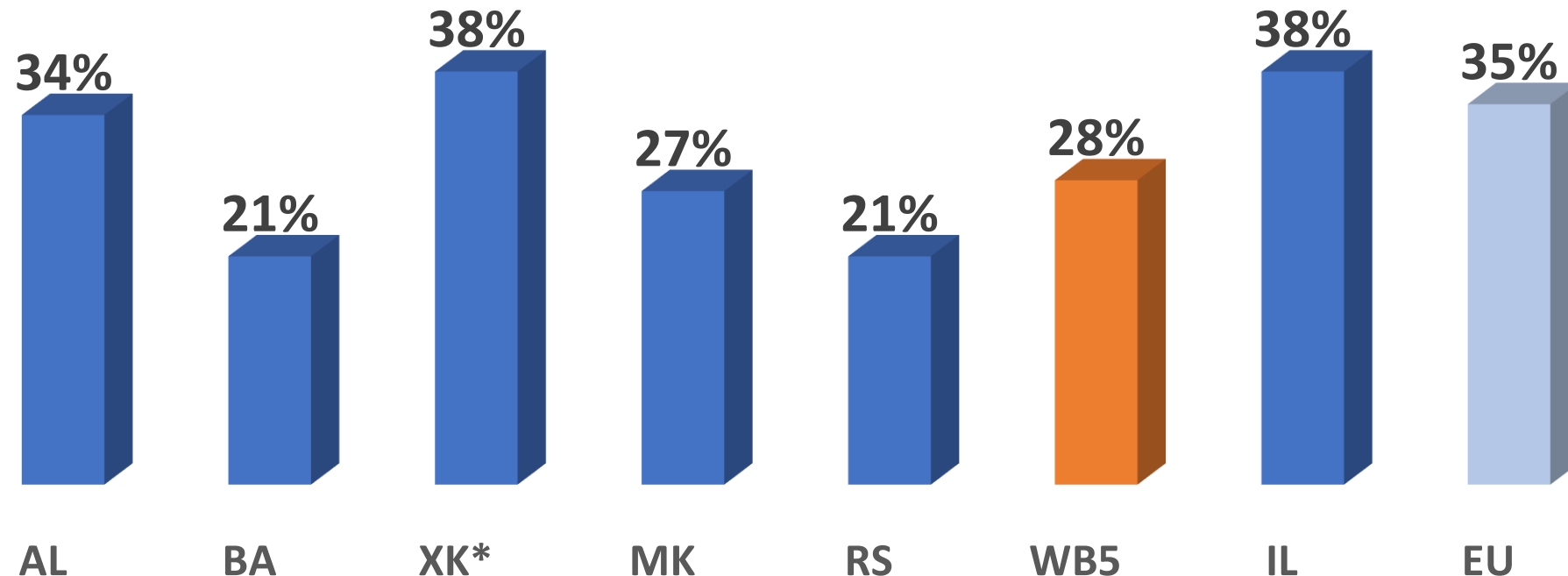
# Digital transition *more job insecurity?*

Do you think you may lose your current job because new digital/computer technologies will do your work?

28% of employees in WB5\* show a high or moderate job insecurity linked to digital transition in 2022 (EU: 35% in 2021)

*Most are aware of work changes/fearing losing job but job insecurity is non-uniform by type of digital technologies used; it's more pronounced for those holding routine jobs while others (ex. programmers) feel less insecure*

## DIGITAL TRANSITION: JOB INSECURITY



# Going digital

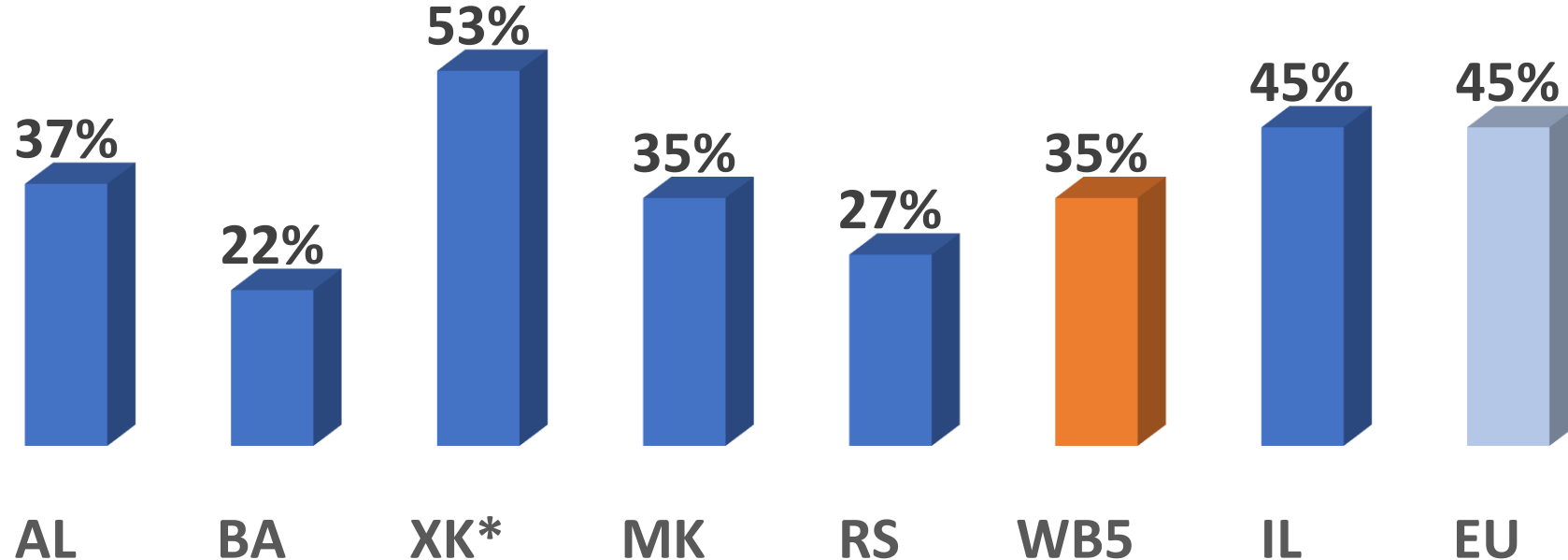
## *fear, facts or fiction?*

Do you think you may lose your current job because new digital/computer technologies will also need new skills/knowledge which you don't currently hold?

For 1/3 of WB5\* employees, insecurity is mainly linked to their lack of new skills linked to the digital transition (EU: 45%)

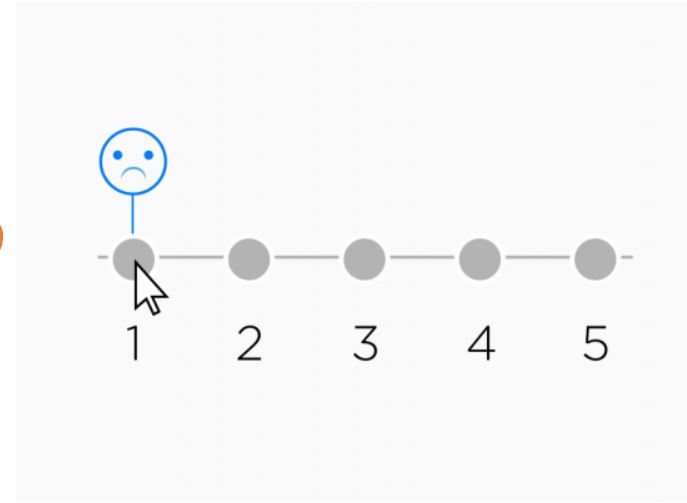
Those working in manual/routine jobs, not using digital technologies lack awareness of new realities in the world of work or are oblivious to automation risks. They are also less inclined to invest in (up)reskilling (more soon)

### JOB INSECURITY: LACK OF NEW DIGITAL SKILLS



# Digital transition

What  challenges?



*Increase of work routinisation/job insecurity*

**with some forms of digital technology**

*particularly in manual/routine occupations, less in non-routine/analytical jobs*

*Non-users of digital technologies are oblivious to automation risks*

**or lack awareness of new realities in the world of work**

*Seven in ten employees in WB5\* believe that new digital technologies would result only in small improvements*

*Only one in four EU employees is concerned that technology can/will (partly) do their tasks*

*Skill underutilisation is (usually) linked to less digitalisation at work*

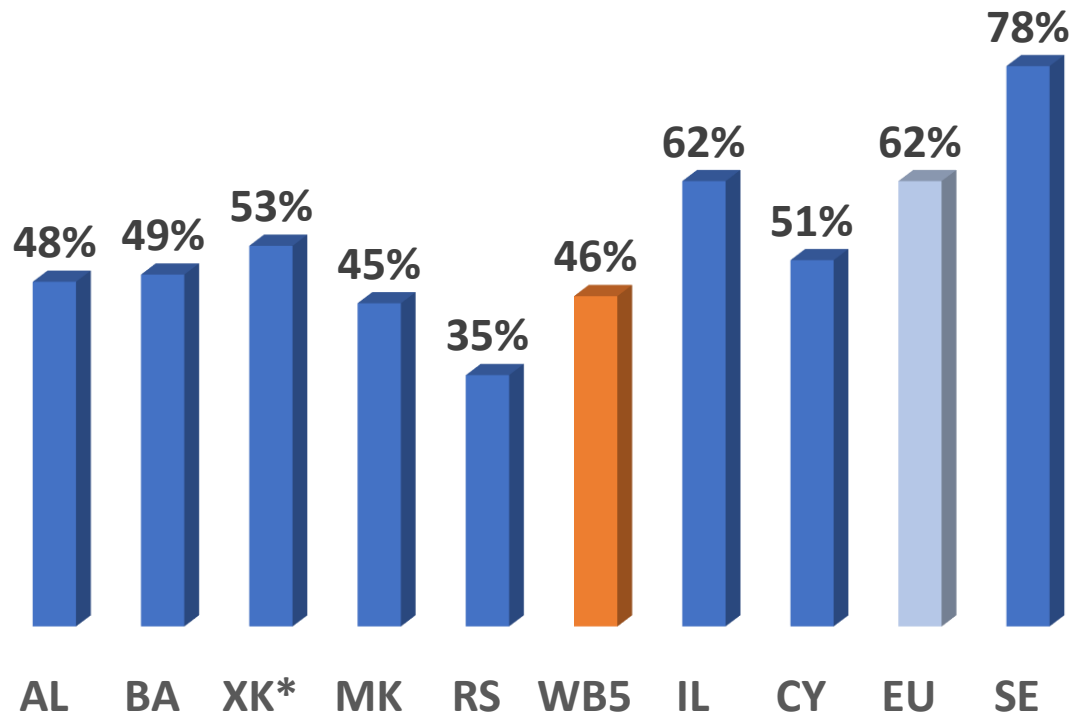
*Adults non-exposed to digitalisation are less willing to adopt digital innovation and to invest in up/reskilling*

# Investing in skills

## *it takes two to tango*

In the last 12 months, have you participated in any education/training to learn new job-related skills?

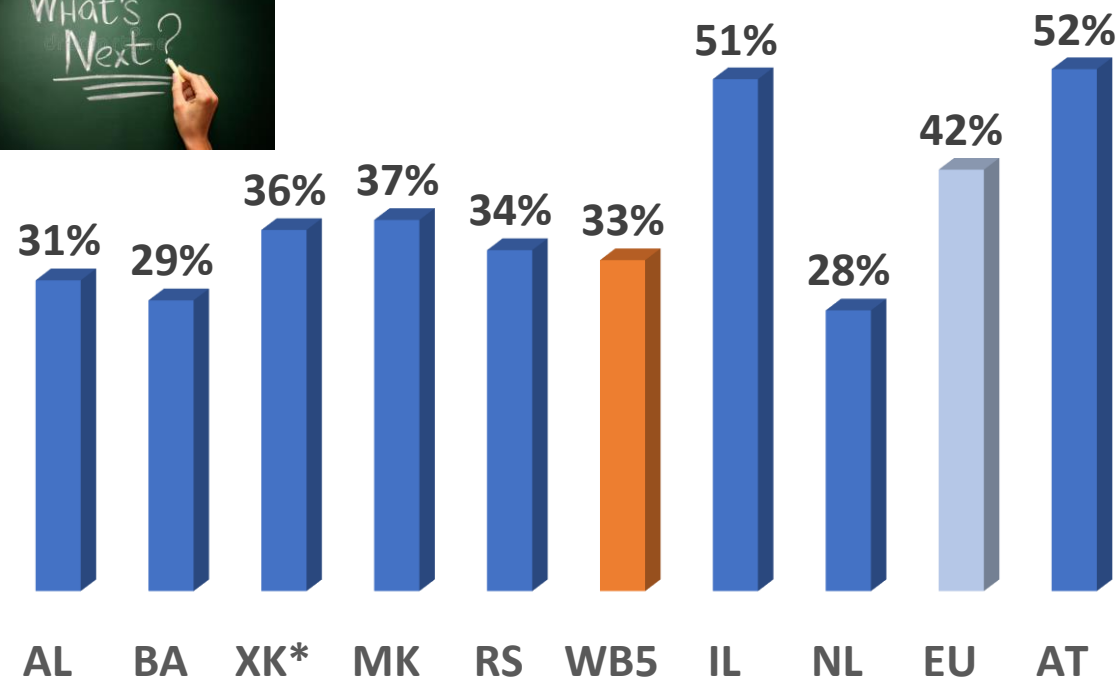
### ANY EDUCATION/TRAINING ACTIVITY



One in two employees in WB5 countries\* was trained to learn new job-related skills and one in three to develop digital skills

And was at least one of these trainings done to further develop your computer/IT skills needed for your job?

### TRAINING TO DEVELOP DIGITAL SKILLS



# The digital transition

*What policy pointers?*



**DURING**



**IT HAS ENABLED A SORT  
OF RESILIENCE OF THE  
LABOUR MARKETS**

*Sizeable skills gaps*



*modest digital training  
esp. for the low-skilled*



**Requiring a skills  
revolution?**

**LOWER SKILL DEMAND &  
LIMITED JOB COMPLEXITY**

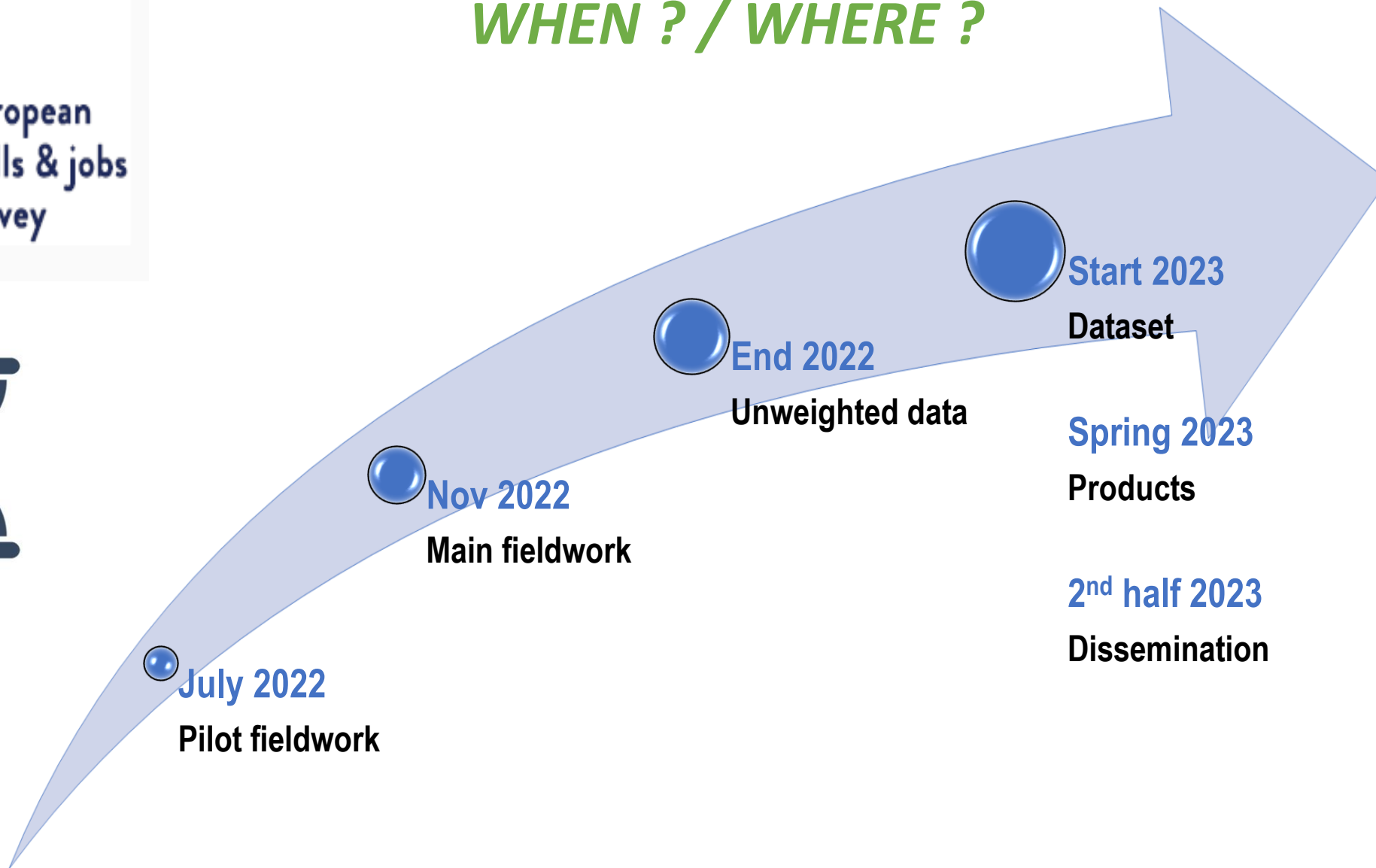


**SKILLS UNDERUTILISATION &  
HINDER DIGITAL TRANSITION**

**CHOOSE**



# WHEN ? / WHERE ?



ALBANIA



BOSNIA AND  
HERZEGOVINA



ISRAEL



KOSOVO\*



NORTH  
MACEDONIA



SERBIA



# ESJS in ETF Partner Countries

## Methodology

National representative survey of adults aged 25-64 in wage and salary employment (i.e. paid employees), who live in private households.

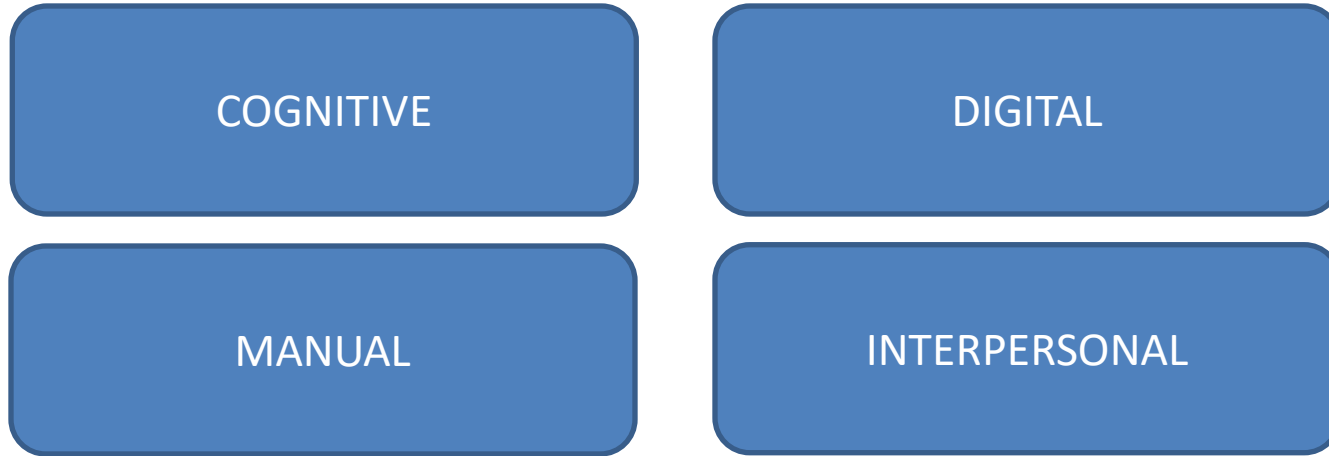
- Multistage cluster sample + CAPI (WB economies)
- Online panel + CAWI (Israel)

Sample of approx. 1000 respondents per country  
Main fieldwork – end November 2022 to January 2023

*Based on CEDEFOP methodology applied in EU countries*



# ESJS allows to measure job-skill requirements



## Task-based approach

*Did you use any of the computing devices (...) to do the following activities as part of your main job in the last month?*

- Use the internet for browsing, sending emails or using social media for your work
- Write or edit text, for instance using Word or similar software
- Use the more advanced functions of spreadsheets, for instance macros or complex formulas (...)

## Or incidence of digitalisation and the impact of automation on job tasks

- *In the last 12 months, did you learn to use any **new computerised machinery** to do your main job?*
- *In the last 12 months, did you learn to use any **new computer programs or software** to do your main job?*
- *As a result of the [above] you learnt for your main job, did your job tasks change in any of the following ways?*

*Source: Cedefop (ESJS)*

# JOB-SKILLS REQUIREMENTS IN THE ESJS: *THE META-SKILLS*

|  |   |  |   |
|--|---|--|---|
| <b>Cognitive</b><br><br>Reading<br>Writing<br>Maths<br>Problem-solving<br>Creativity | <b>Manual</b><br><br>Lifting<br>Dexterity<br>Repetitiveness /<br>standardisation<br>Use of computerised<br>machines | <b>Interpersonal</b><br><br>Counselling<br>Selling<br>Serving<br>Presenting<br>Teaching/training<br>Persuading / negotiating<br>Caring<br>Team-working | <b>Digital</b><br><br>Email / Internet / Social<br>media<br>Word processing<br>Spreadsheets<br>Data management<br>Occupation-specific<br>software<br>Programming (AI) |
|--|---|--|---|

|                               |   |
|-------------------------------|---|
| Reading                       | <i>In your main job, did you do any of the following during the last month?</i><br><br>...read texts that are at least ><5 pages long?  |
| Manual                        | ...lift or carry heavy loads, without the help of machines?   |
| Digital                       | Did you use any computer device to do the following activities for your work in the last month?<br><br>...send emails?...<br>...write or edit text using a word processor?<br>...<br>...write a program or code using a computer language |
| <b>Source: Cedefop (ESJS)</b> |   |



## *Incidence & complexity*

# *Measuring digitalisation*

In the last 12 months since you started your main job, did you have to **learn to use any new** [computer programs or software][computerised machinery] to do your main job?

By 'new' we mean those you started using for your main job. Please **exclude minor or regular updates**.

About **how long did it take you to learn to use it well** for your main job? By well we mean **with no/few errors and at the expected speed**.



## *Automation impact*

As a result of the [new computer programs or software] [or] [new computerised machinery] you learnt for your main job [in the last 12 months], **did your main job tasks change in any of the following ways?**

- **No longer do some tasks** I did before
- Do **some new or different tasks**
- Did my **job tasks faster than before**



# ESJS allows to measure skill mismatch

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## ***Vertical mismatch***

What is the level of education usually needed nowadays to do a job like your main job?

## ***Horizontal mismatch***

Considering your main subject or field of study at your highest level of education (business, engineering, health etc.), how relevant is it for doing your main job

## ***Skills utilisation***

To what extent can you use your current knowledge and skills in your main job?

## ***Specific skill gap***

Do you need to further develop any of the following skills to do your main job even better?

- technical/job-specific, computer/IT, social, numeracy skills

*Source: Cedefop (ESJS)*



**TO BE  
CONTINUED...**

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