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THE IMPACT OF INSUFFICIENT DIGITAL SKILLS ON UNIVERSITY DIGITAL TRANSFORMATION: EXPLORING PERSONAL AND ORGANIZATIONAL BARRIERS

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Topicality

The Europe Digital Decade policy programme sets out digital ambitions for the next decade in the form of clear, concrete targets:

- a digitally skilled population and highly skilled digital professionals;
- secure and sustainable digital infrastructures;
- digital transformation of businesses;
- digitalization of public services (The Digital Decade Policy Programme 2030).

Digital skills are the key to achieving a successful green and digital transition. (Virkkunen, 2024)

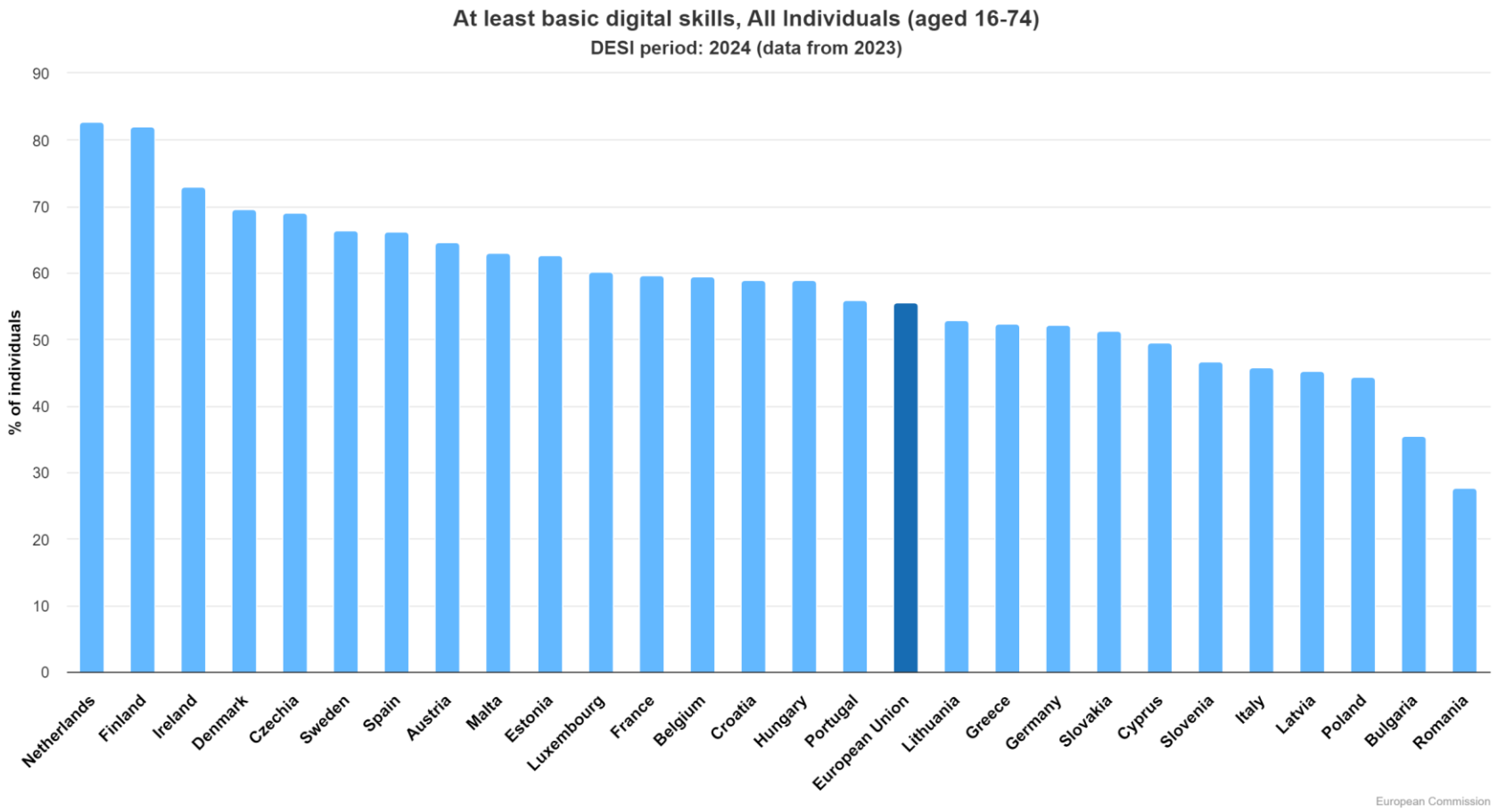
In 2023, only 55.6% of EU citizens had at least basic digital skills, up from 53.9% in 2021. In a couple of years, the EU has experienced a mere 1.5% annual progression, far below the necessary average annual growth of over 4.5% over a decade to meet the target. (Report on the state of the Digital Decade 2024)

Digital skills

Digital skills, sometimes also called digital competences or competencies, encompass the “knowledge and skills required for an individual to be able to use ICTs to accomplish goals in his or her personal and professional life” (Commission on Science and Technology for Development, 2018, p. 4). Given the pace of change in technology and digital work opportunities, digital skills denote a broadening spectrum of skills, which changes over time.

Digital skills include a “combination of behaviours, expertise, know-how, work habits, character traits, dispositions and critical understandings” (Broadband Commission for Sustainable Development, 2017, p. 4). They thus include not only technical skills but also cognitive skills as well as non-cognitive soft skills such as interpersonal skills and communication skills.

DESI indicator: At least basic digital skills



Source: European Commission, 2024

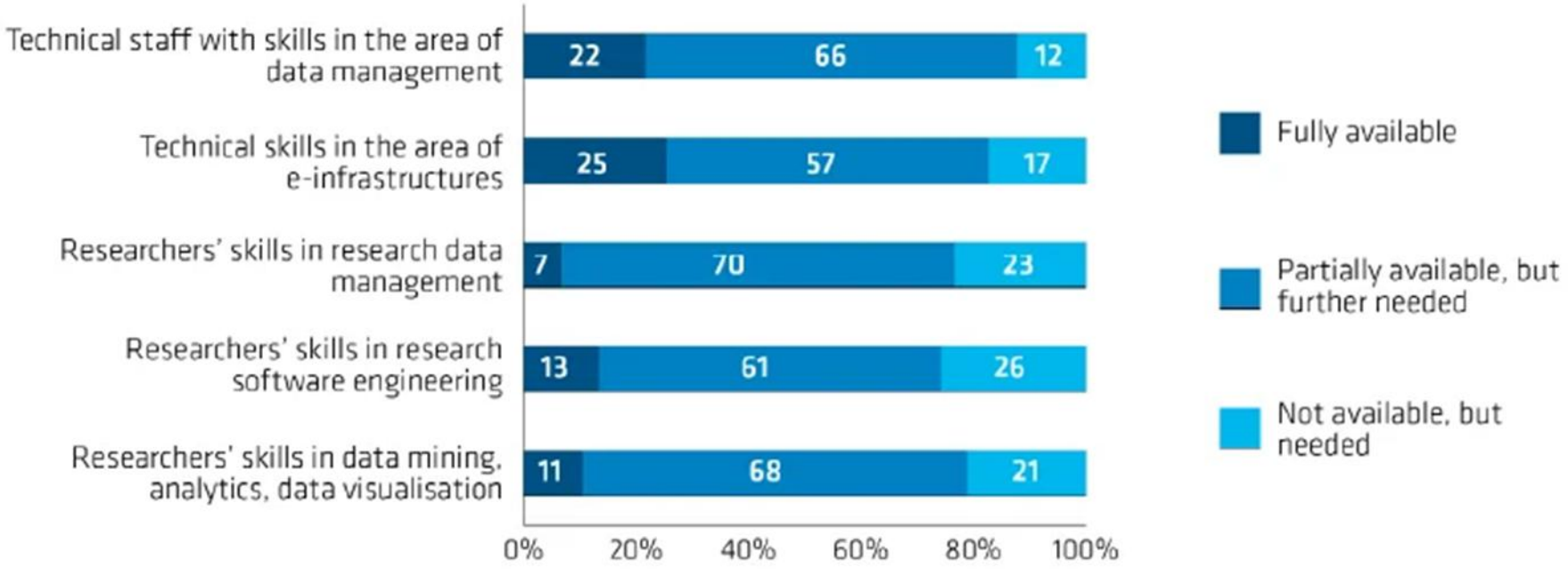
Latvia's progress towards a digital transformation, as set out in the Digital Decade Policy Programme 2030

Digital Decade KPI (1)	Latvia			EU		Digital Decade target by 2030	
	DESI 2023	DESI 2024	Annual progress	DESI 2024 (year 2023)	Annual progress	LV	EU
Fixed Very High-Capacity Network (VHCN)	62.7%	71.5%	13.9%	78.8%	7.4%	53%	100%
Fibre to the Premises (FTTP) coverage	60.9%	61.9%	1.6%	64.0%	13.5%	x	-
Overall 5G coverage	42.0%	53.1%	26.5%	89.3%	9.8%	70%	100%
Semiconductors		NA					
Edge Nodes		3		1 186		x	10 000
SMEs with at least a basic level of digital intensity	38.1%	48.2%	12.5%	57.7%	2.6%	90%	90%
Cloud	22.2%	29.0%	14.3%	38.9%	7.0%	75%	75%
Artificial Intelligence	3.7%	4.5%	10.3%	8.0%	2.6%	75%	75%
Data analytics	NA	36.9%	NA	33.2%	NA	75%	75%
AI or Cloud or Data analytics	NA	48.2%	NA	54.6%	NA		75%
Unicorns		0		263		2	500
At least basic digital skills	**50.8%**	**45.3%**	**-5.5%**	**55.6%**	**1.5%**	**70%**	**80%**
ICT specialists	4.4%	4.4%	0.0%	4.8%	4.3%	10%	~10%
e ID scheme notification		Yes					
Digital public services for citizens	87.2	88.2	1.2%	79.4	3.1%	100	100
Digital public services for businesses	85.8	87.2	1.6%	85.4	2.0%	100	100
Access to e-Health records	78.8	84.8	7.6%	79.1	10.6%	100	100

Source: Report on the State of the Digital Decade 2024

Digital skills for the universities

Many digital skills are needed by the entire higher education community, such as digital and media literacy, use of digital resources, content creation, responsible use of digital material, data management and analysis, communication in digital settings, problem solving and critical thinking, to name but a few. Other skills may be specific to the target group, such as staff, researchers or students, or specific to disciplines.

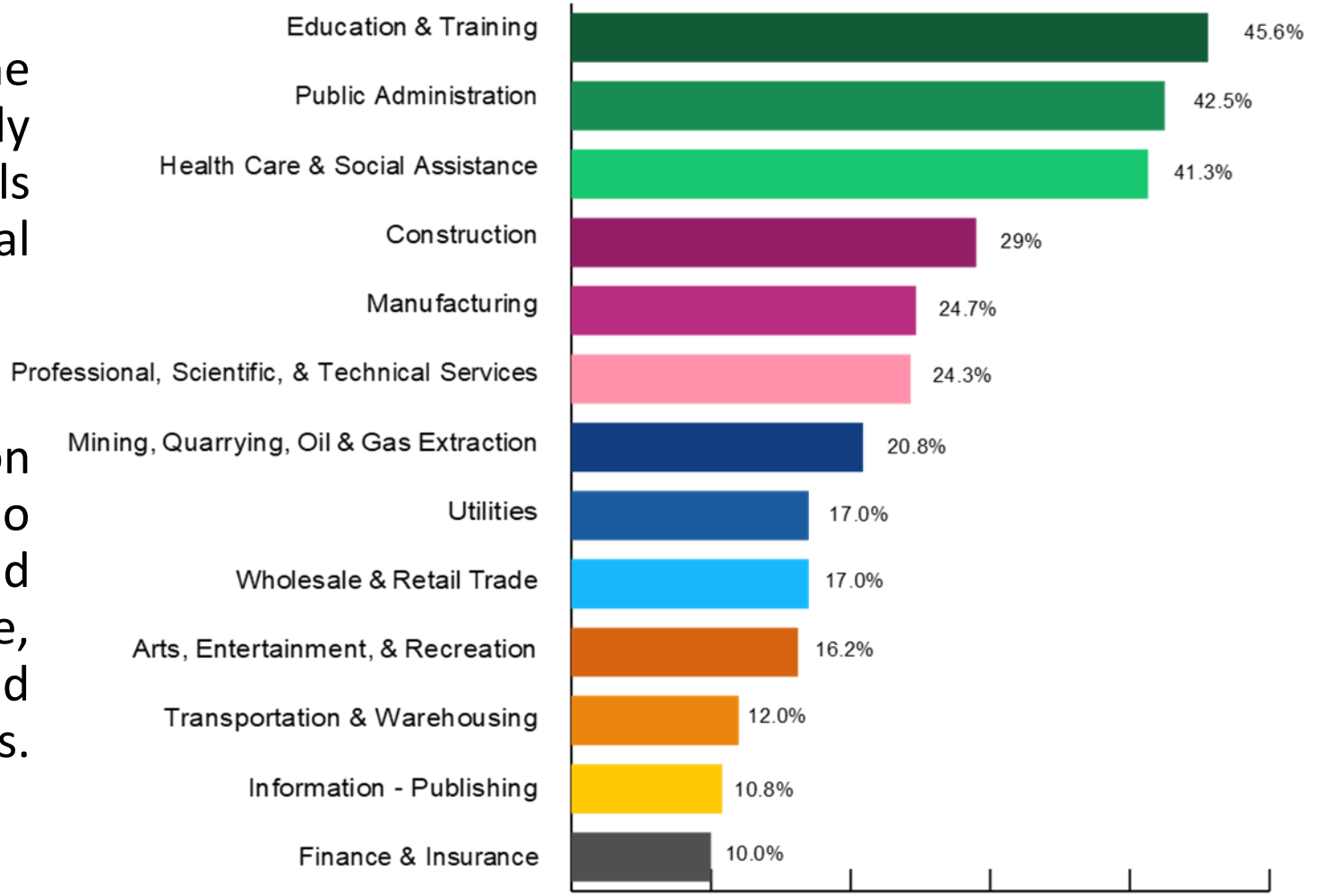


Source: EUA Open Science Survey Results, 2021

Digital skills gap

"Digital skills gap" is defined as the gap between the demand and supply of workers with the digital skills sought by employers. (Wiley Digital Skills Gap Index, 2022)

The digital gap describes a situation where a person has limited or no access to digital technologies and services due to lack of knowledge, insufficient network coverage, limited financial resources or other reasons. (Brusbārde, 2023)



Source: Wiley Digital Skills Gap Survey, 2022

Impact of the Digital Skills Gap

Economic Consequences:

- **Productivity Loss**: Organisations struggle to implement digital transformation due to insufficient skilled labour.
- **Missed Opportunities**: Businesses fail to capitalise on emerging technologies, stalling innovation.

Social Inequality:

- **Digital Divide**: Those without digital skills are excluded from many modern job opportunities, amplifying income inequality.
- **Education Divide**: Children from underprivileged backgrounds often lack access to digital learning tools.

Workforce Displacement:

- Automation and AI are eliminating some roles while creating others, but workers without relevant skills risk unemployment. (APM GROUP, 2025)

Impact of the Digital Skills Gap

The level of digital skills of their employees' impacts the business performance of their companies, recognizing that these skills positively influence their efficiency and productivity and that keeping up with the digital revolution is essential. (UNDP, Digital Skills. Needs and Opportunities, 2022)

Employers and workers require the necessary digital and soft skills to take advantage of the new opportunities they are expected to face (Deloitte Insights, Expected skills needs for the future of work, Moueddene et.al., 2019)

The most frequently reported impacts by businesses across the Member States were loss of productivity (46%), an expected decrease in the number of customers (43%), unspecified negative impacts (41%), and a decrease in the number of contracts (32%)(Vihar, 2025).

A lack of digital skills is jeopardizing industries' digital transformation initiatives(Law, 2022)

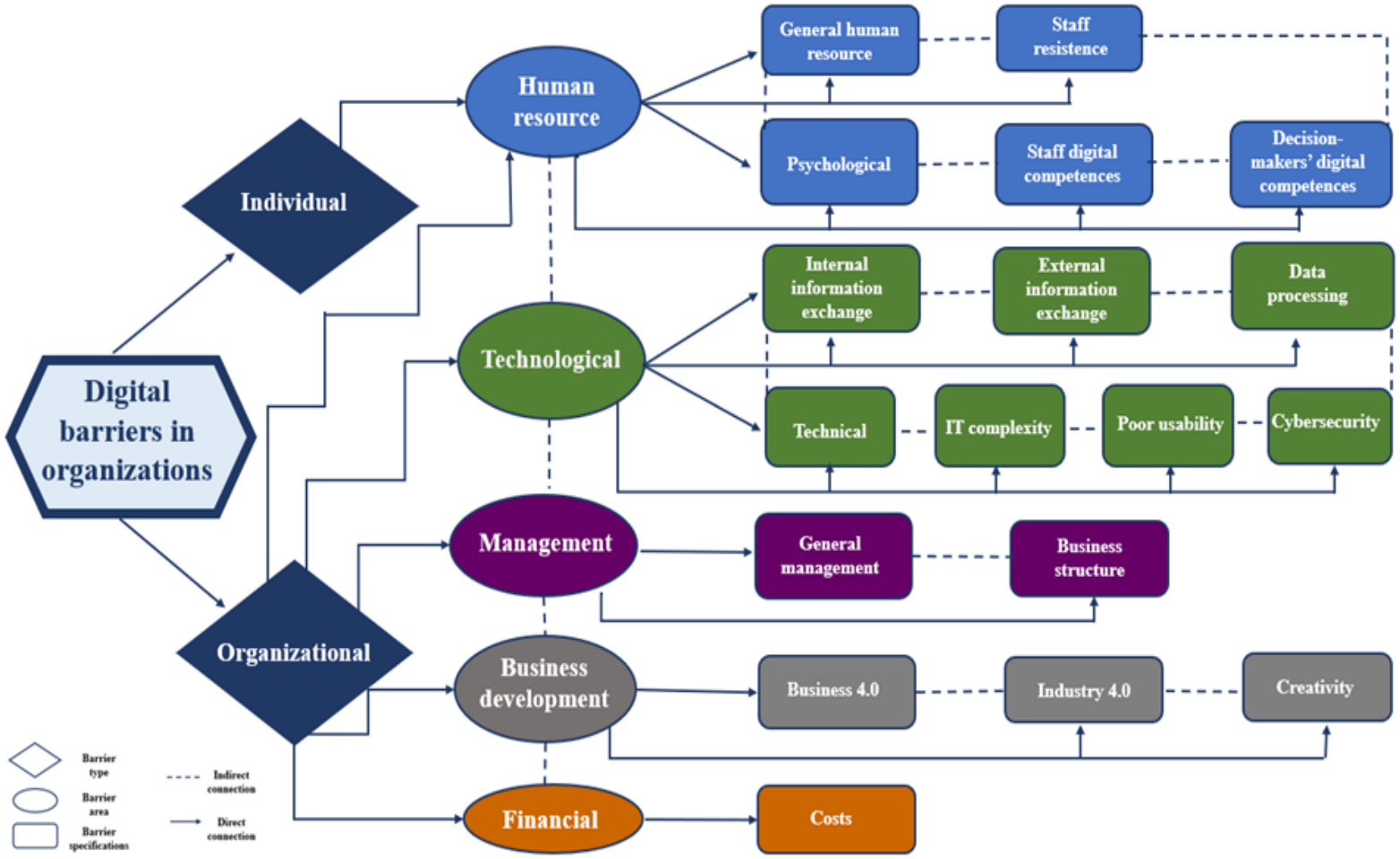
Research design

Part	Question	Type of the question; responses
A	Respondent profile	Age, gender, education level, HEI, position, work experience
B	Institutional barriers	22 barriers. Evaluation scale: level of agreement (1 – absolutely disagree; 5 – absolutely agree)
C	Personal barriers	18 barriers. Evaluation scale: level of agreement 1 – absolutely disagree; 5 – absolutely agree)

Institutional barriers: 22 (lack of knowledge in DT processes; lack of technological infrastructure; lack of clear vision/ DT strategy; lack of financial resources e.c.)

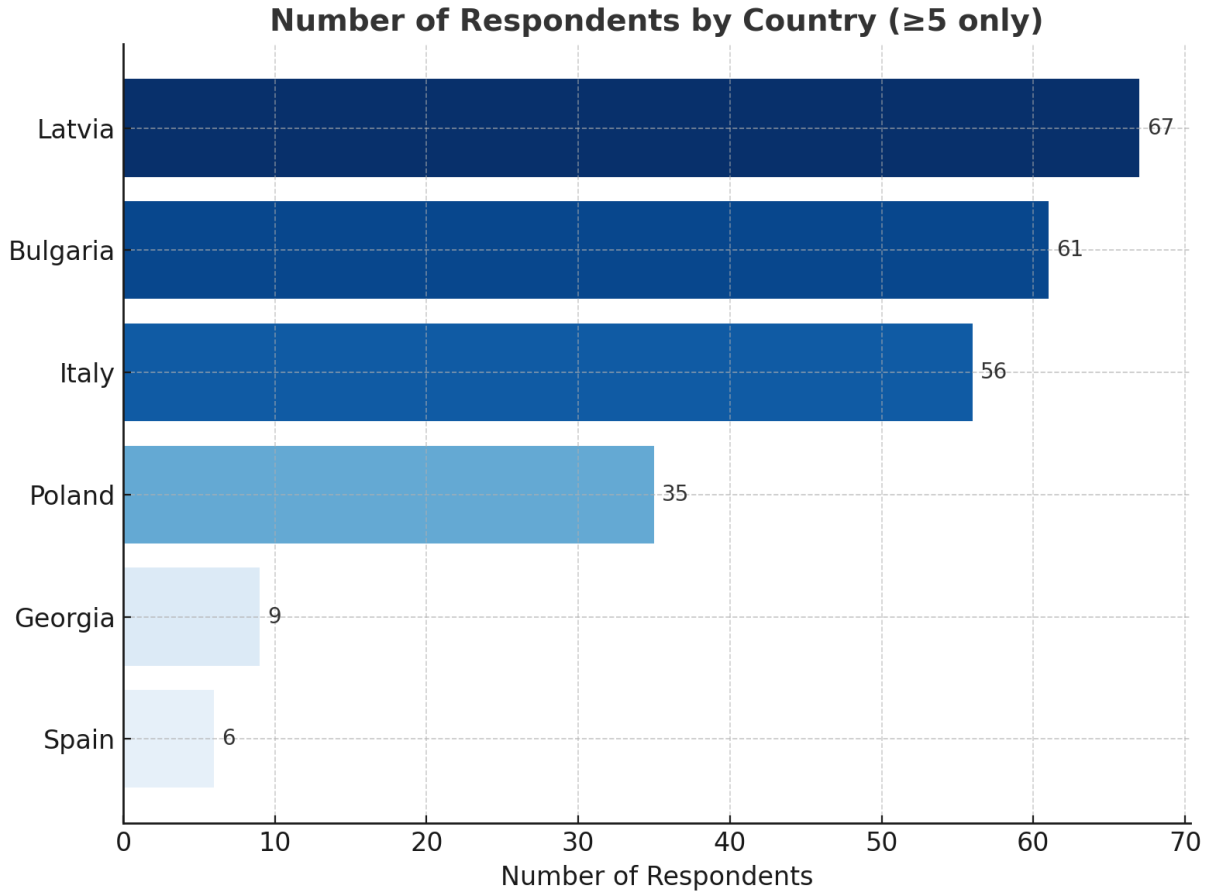
Personal barriers: 18 (fear of cyber security and data loss of control; fear of income reduction; lack of IT skills and knowledge e.c.)

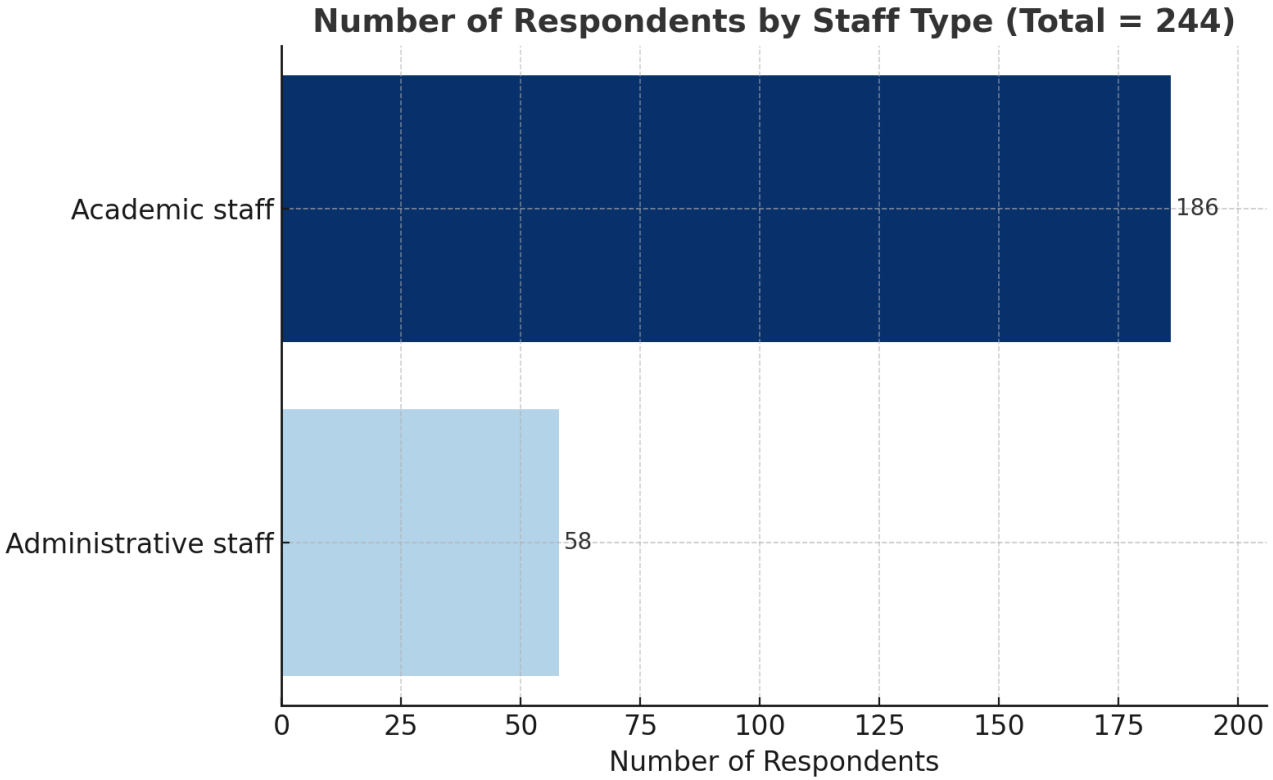
Background



Source: Užule, Verina, 2023

Survey results





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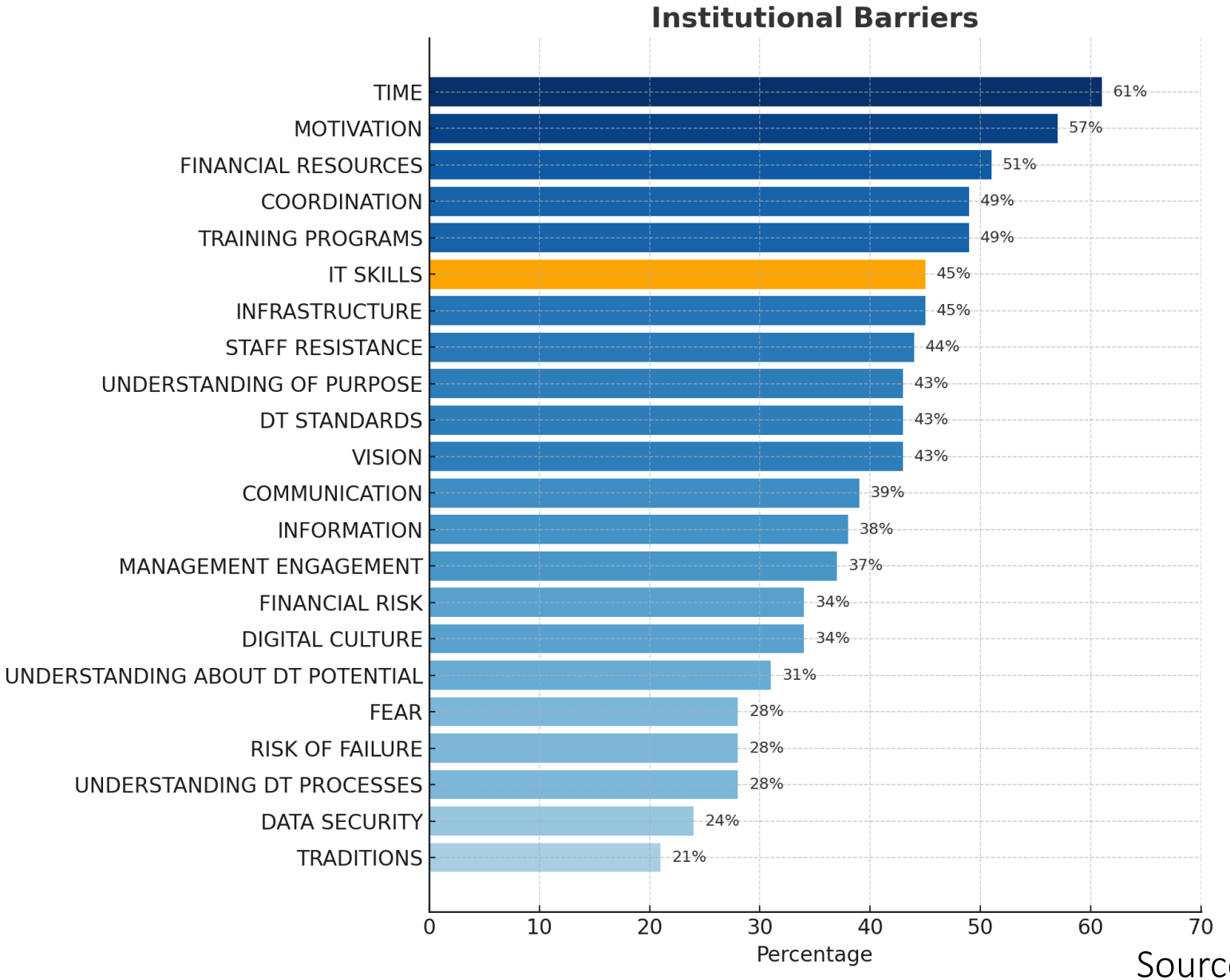

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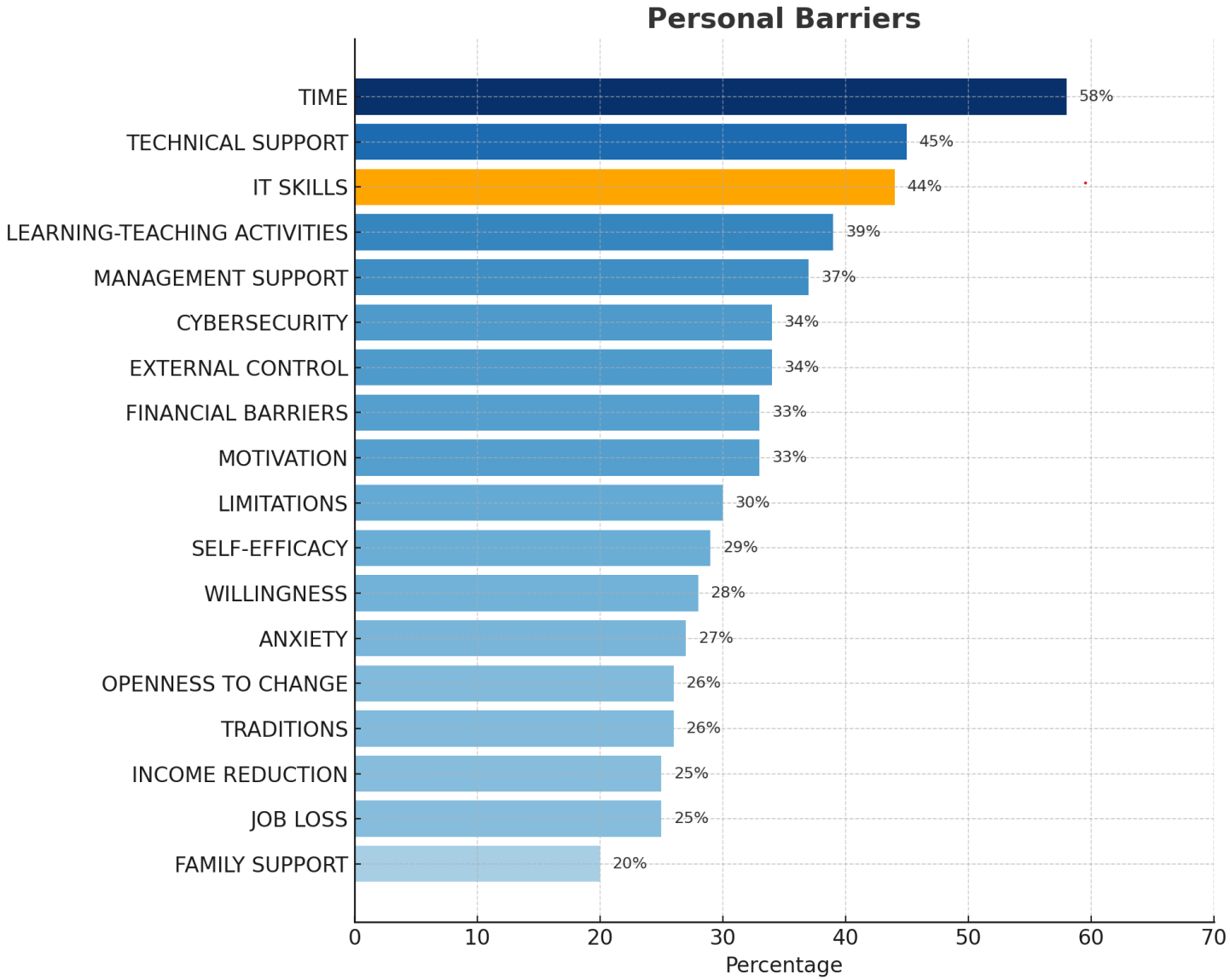

Source: Created by authors, 2025

Conclusions

Europe needs to develop a high performing digital ecosystem over the long term, guarantee universal access to digital education, and develop an inclusive and quality ecosystem that helps address the digital divide. Investments in digital infrastructure and digital equipment are crucial. (Virkkunen, 2024)

Universities should invest in systematic training and capacity building for both academic and administrative staff. At the same time, individuals must embrace lifelong learning and digital literacy development (Redecker, 2017)

Universities cannot succeed in DT without addressing human factors. While infrastructure is necessary, digital skills are perceived by staff as equally crucial. (Almeida et al., 2022)

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Thank You for attention!