

Regional impact of Artificial Intelligence

Insights from JRC research

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Science for policy



ANTICIPATE



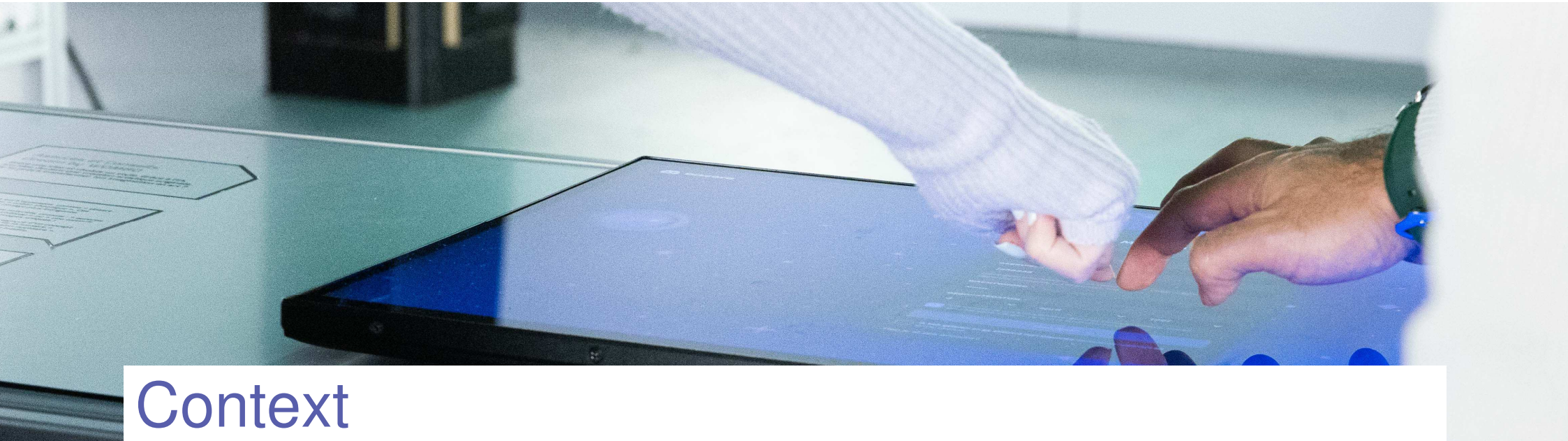
INTEGRATE



IMPACT

Our purpose

The Joint Research Centre provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.



Context

By studying the **regional dynamics of AI adoption and investment**, policymakers and stakeholders can identify **areas of strength and weakness**, address **potential disparities**, and develop **targeted strategies** to support regional growth and development.

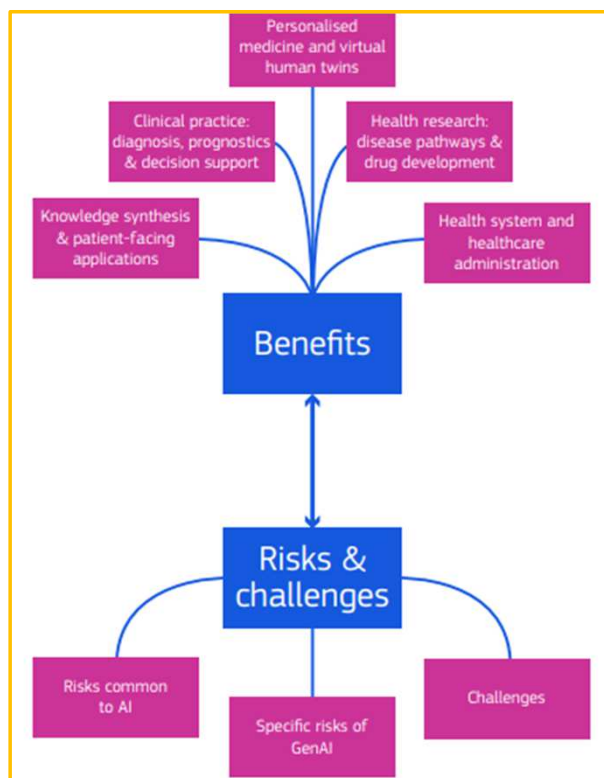


Generative AI Outlook Report

Exploring the Intersection of Technology, Society, and Policy



Generative AI Outlook Report: Highlights



Benefits, risks and challenges of GenAI for Health

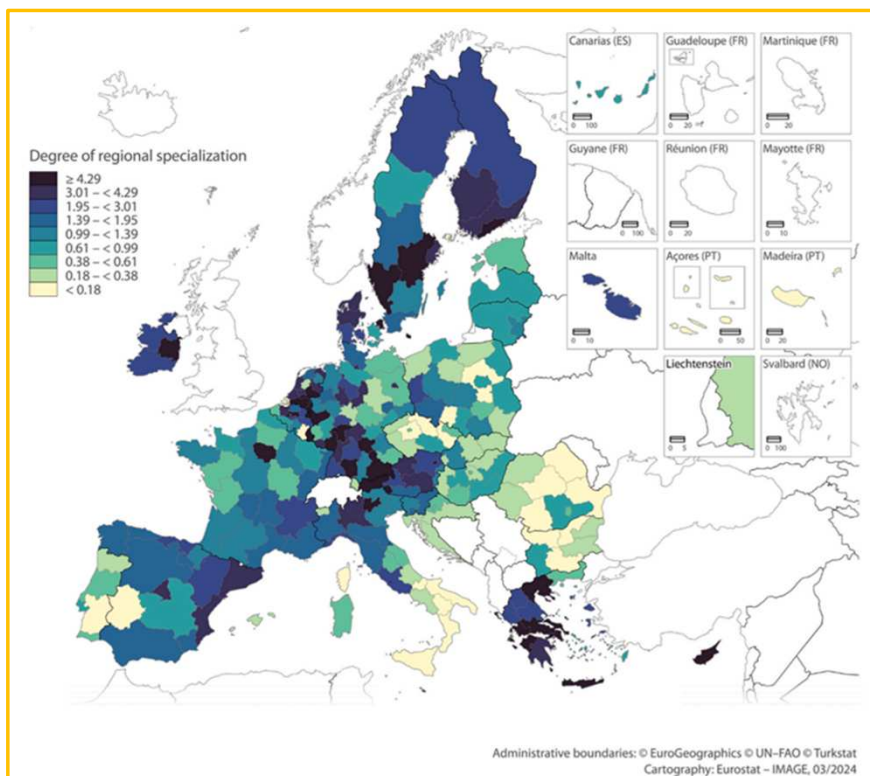
- Generative AI is impacting specific sectors, like healthcare, education and manufacturing.
- Is causing a **shift in the demand of skills**.
- Any policy response needs to consider the complexities of Generative AI, **prioritising transparency and accountability, but also diversity, fairness and equality**.



EU-funded investment in Artificial Intelligence and regional specialisation

- Analysis on 244 EU regions
- 2 main funding programmes:
 - Horizon 2020
 - Cohesion policy (2014-2020)

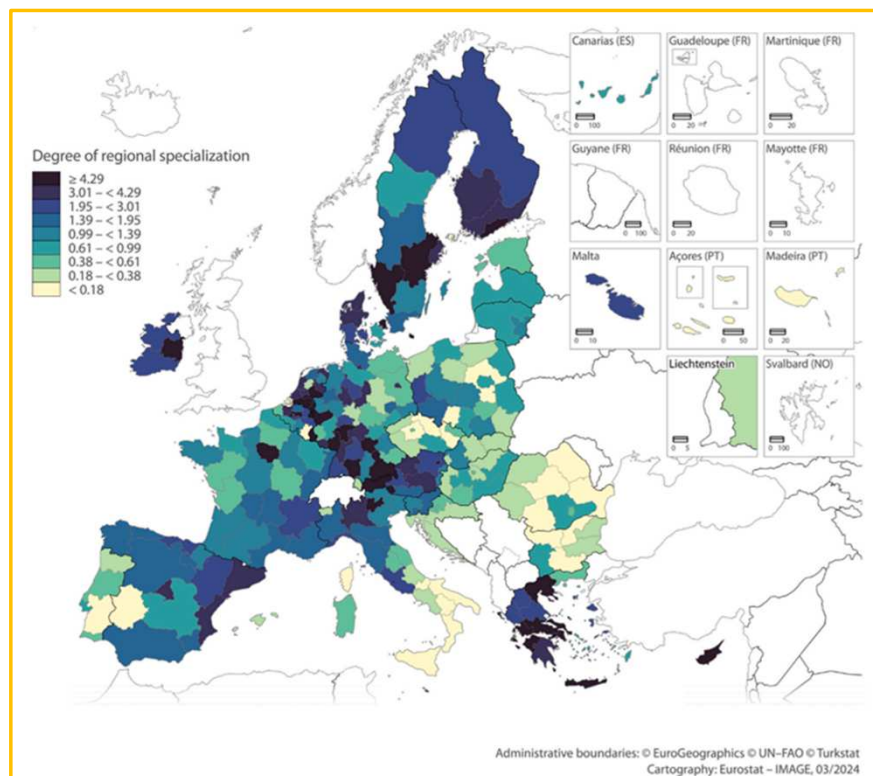
Main results of the study



Degree of regional specialization on AI funded investment (benchmark: EU average), programming period 2014–2020, by Nuts 2 level

- EUR **8 billion** targeted for AI investments
- Some countries/regions are **more dependant on EU funds** to finance AI investments
- Higher **share of EU funding** in the total AI investment in Central and Eastern Europe

Main results of the study



Degree of regional specialization on AI funded investment (benchmark: EU average), programming period 2014–2020, by Nuts 2 level

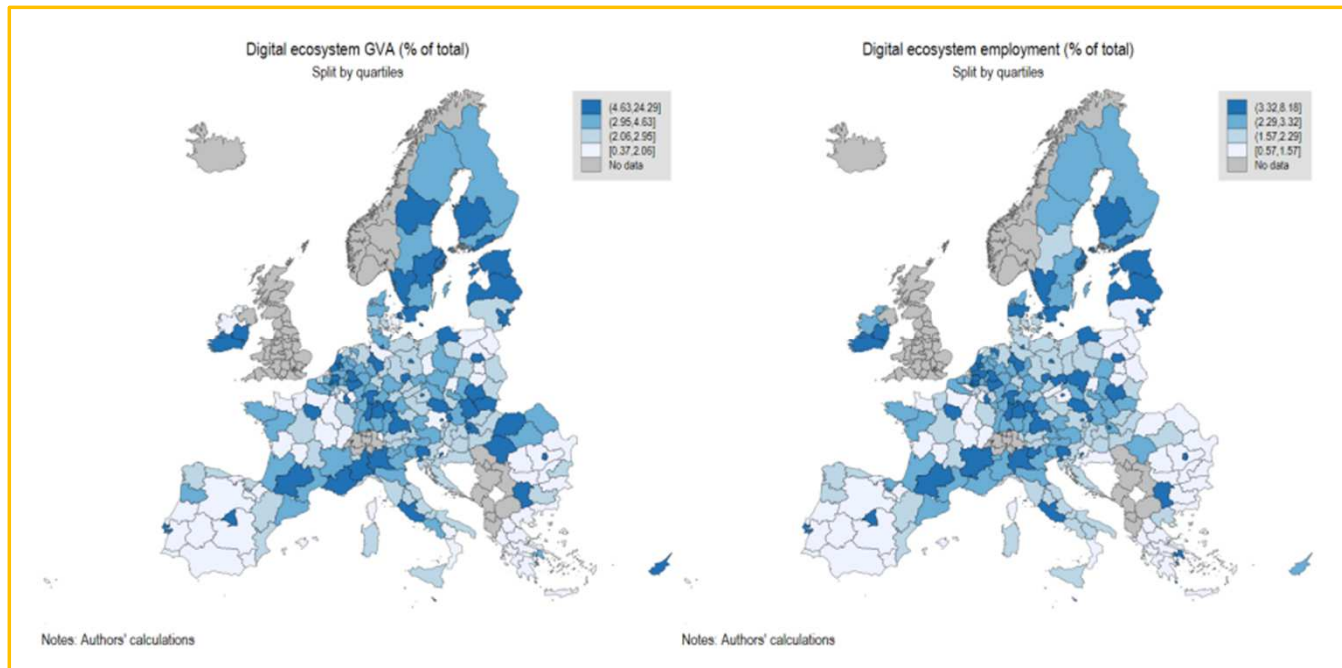
- **More developed regions** have a higher specialisation in AI EU-funded investments.
- AI-related investments are **more concentrated in regions with a higher concentration of ICT activities** and that are more innovative - agglomeration effects



Policy implications

- Public policies at EU, national and regional levels should address **spatial concentration** of AI-related investments
- Importance of **investing** in digital skills, ICT qualifications and digital infrastructures
- Avoid creating conditions for **excessive competition** that could discourage additional investment in AI.

Economic Performance of Digital Ecosystems

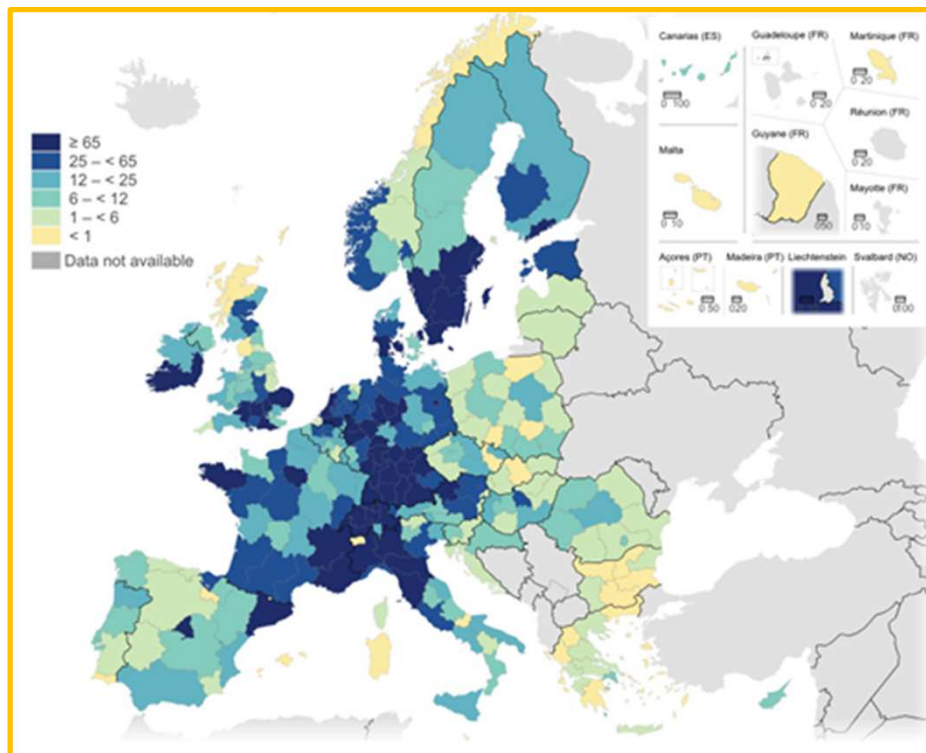


Digital GVA and employment as shares of total by NUTS2 regions (2019)

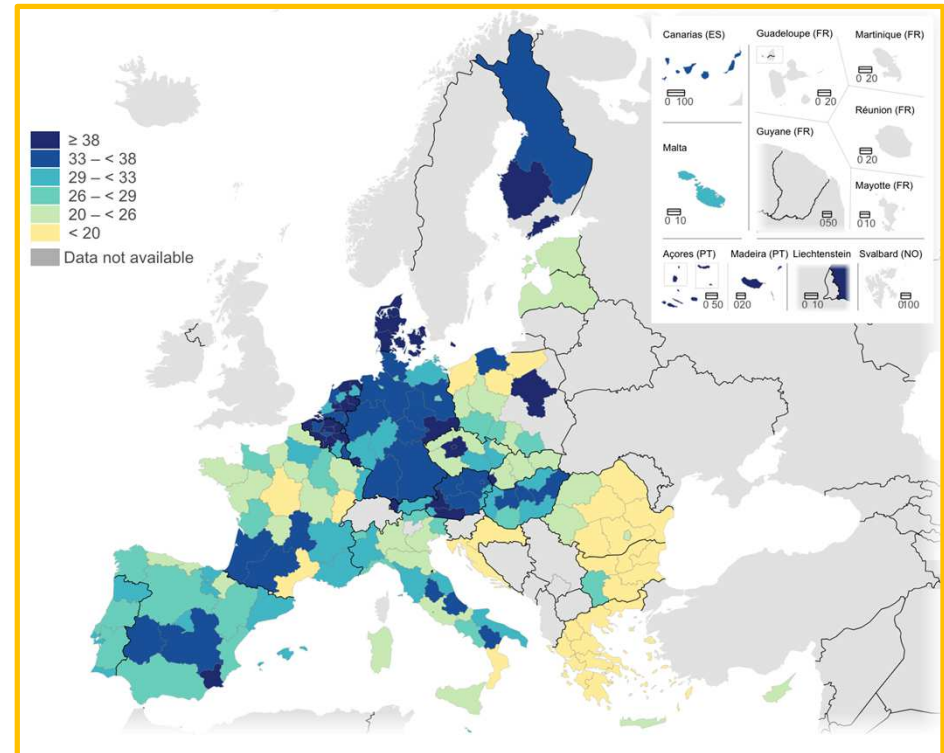


JRC Working Paper
'An Assessment of the Economic
Performance of Industrial Ecosystems'

AI across EU regions (preliminary work)

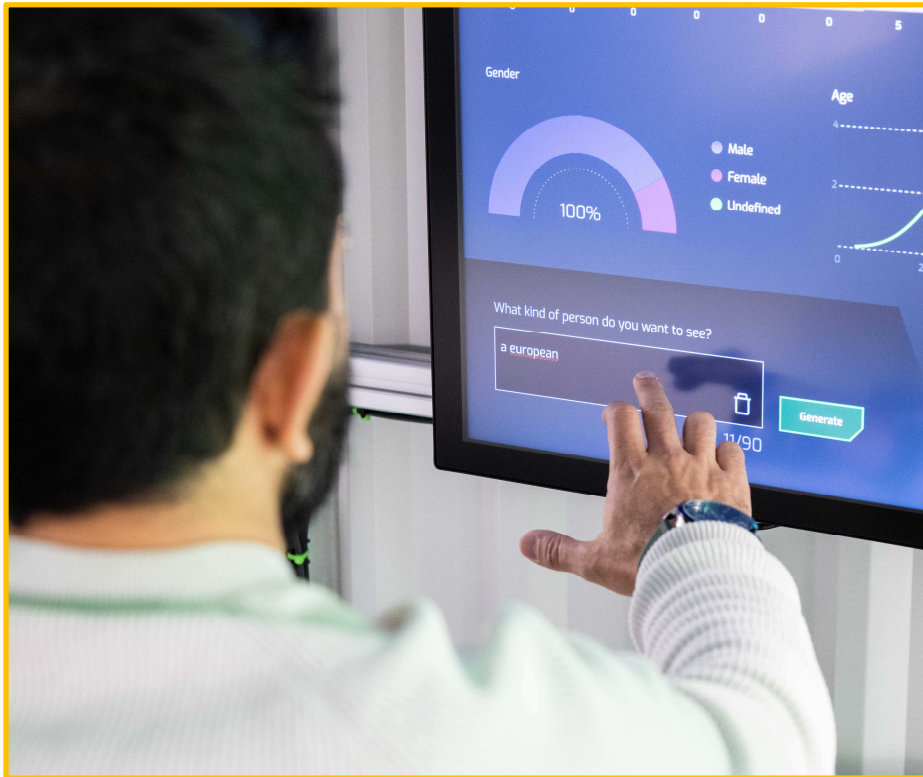


AI patents registration by region



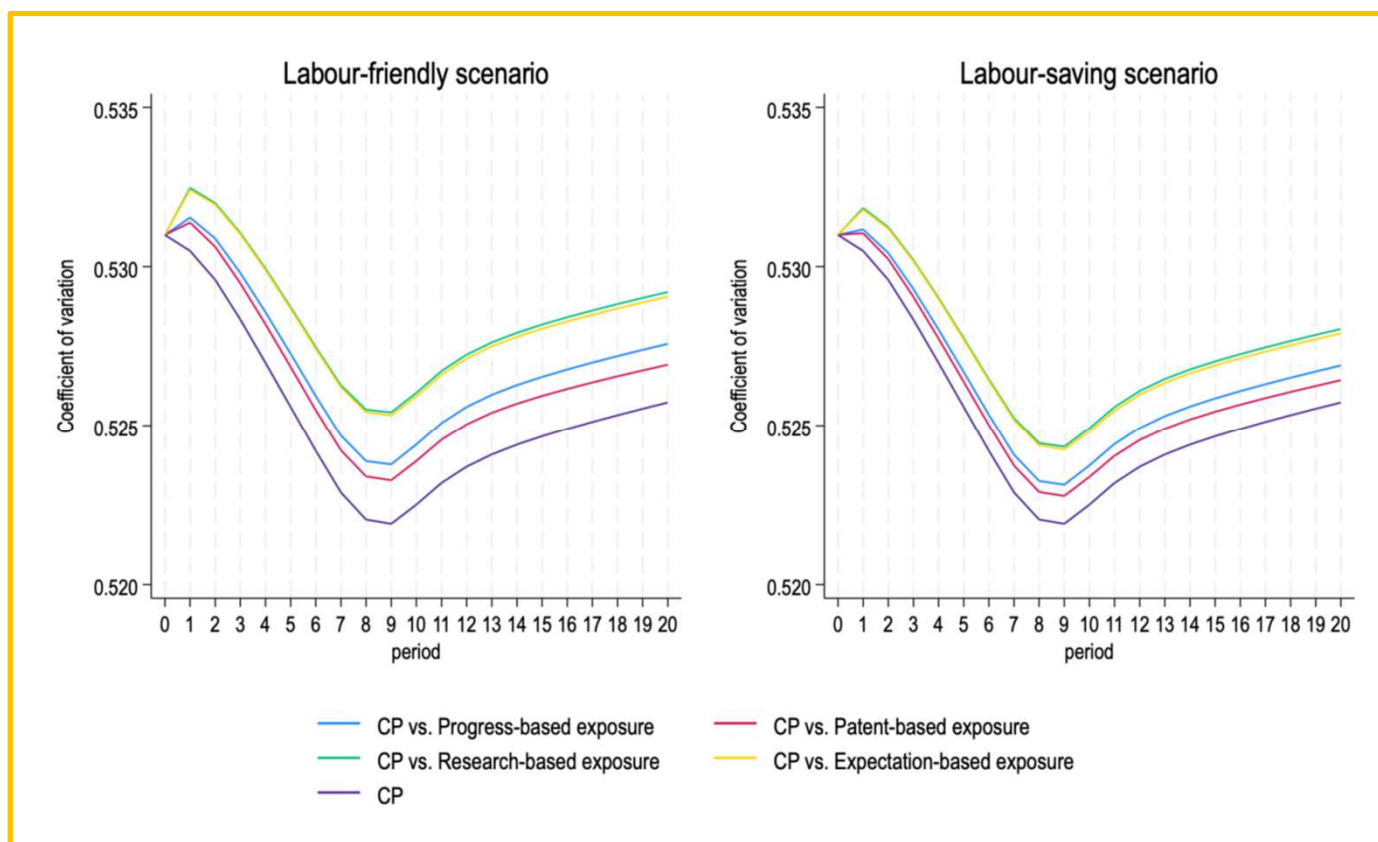
Worker AI usage by region

AI across EU regions (preliminary work)



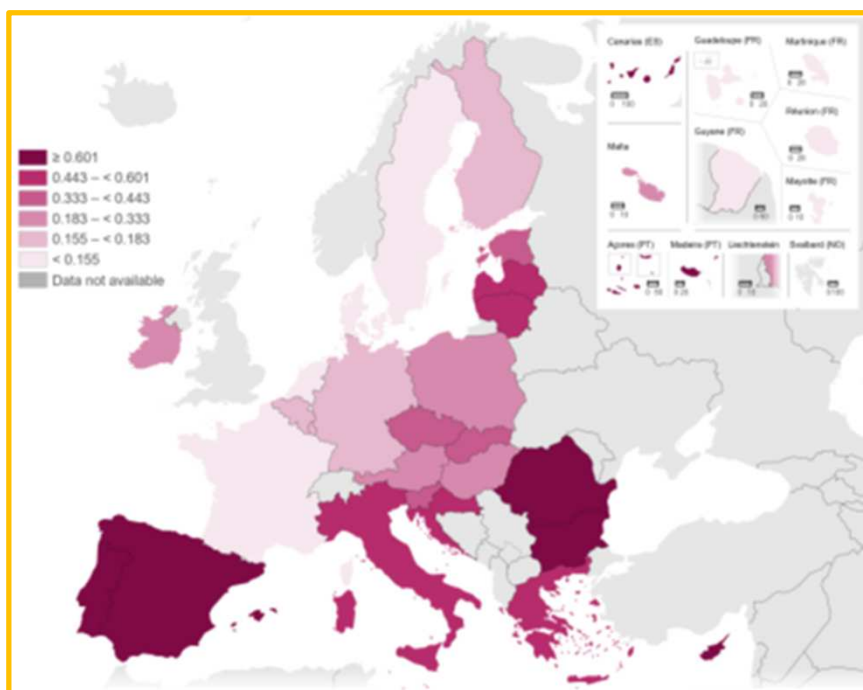
- **Regional clustering:** high AI exposure, innovation, and use are concentrated in the same regions.
- Central and western European regions: **key AI innovation hubs**

AI and regional disparities (preliminary work)

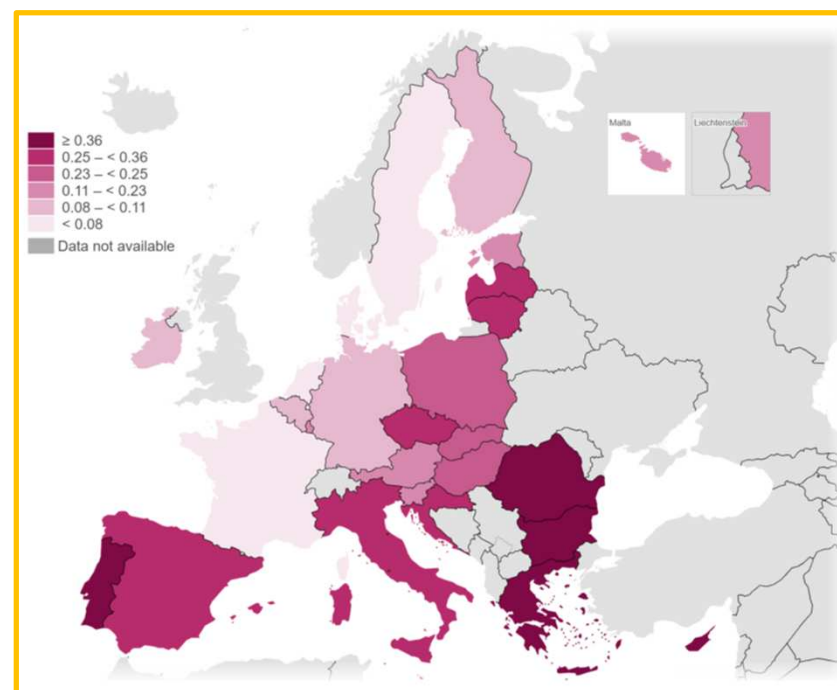


Macroeconomic impact of digital investments

Analysis of **five major EU funds** (nearly €175 billion)



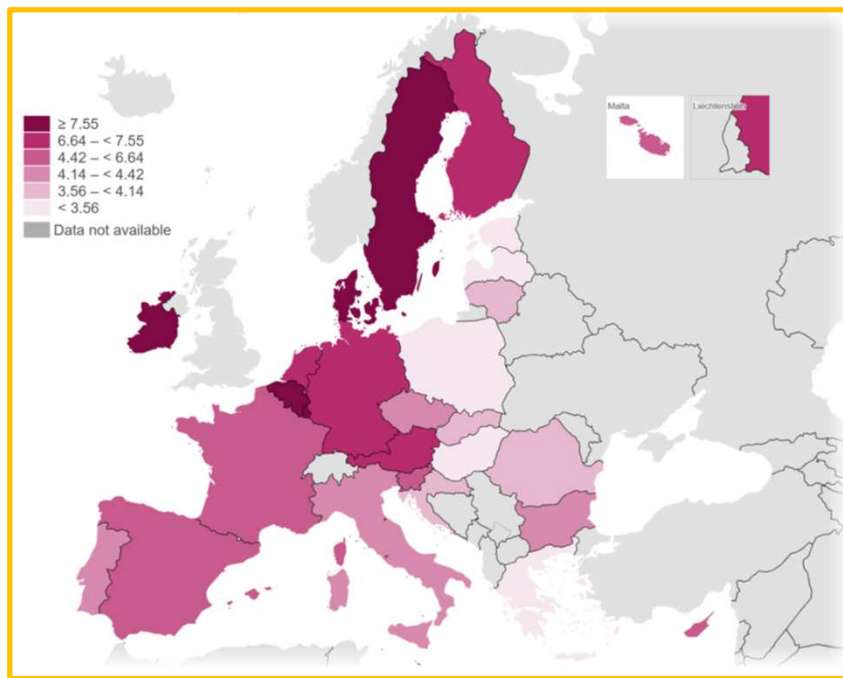
Long-run impact of the digital investments on **GDP**



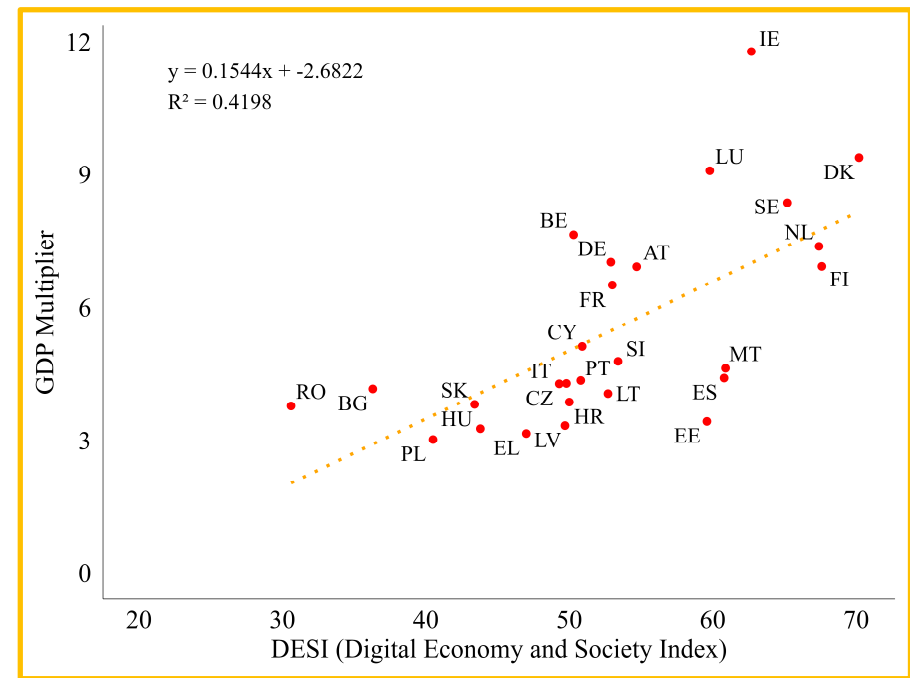
Long-run impact of the digital investments on **productivity**

Macroeconomic impact of digital investments

Analysis of **five major EU funds** (nearly €175 billion)



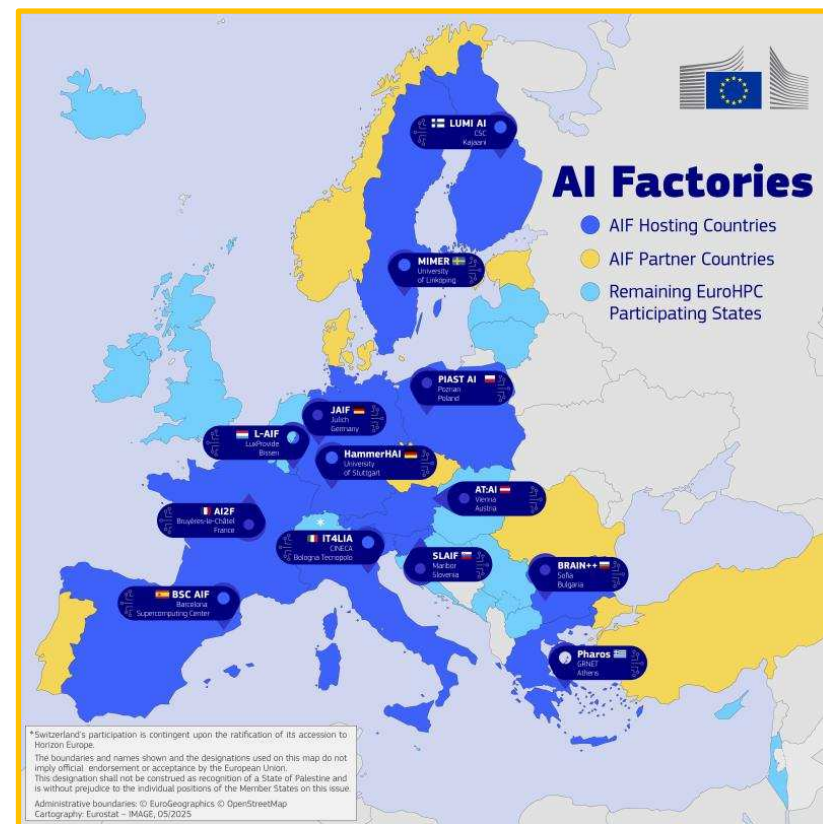
Long-run GDP multiplier



Long-run GDP multiplier vs DESI index

Towards a European economic geography of AI

- Highly qualified poles of excellence represent an opportunity for Europe to compete globally
- However, AI can also exacerbate the regional digital divide between EU regions
- To tap into all available EU potential, it is crucial **not to leave any territory behind**



Thank you



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