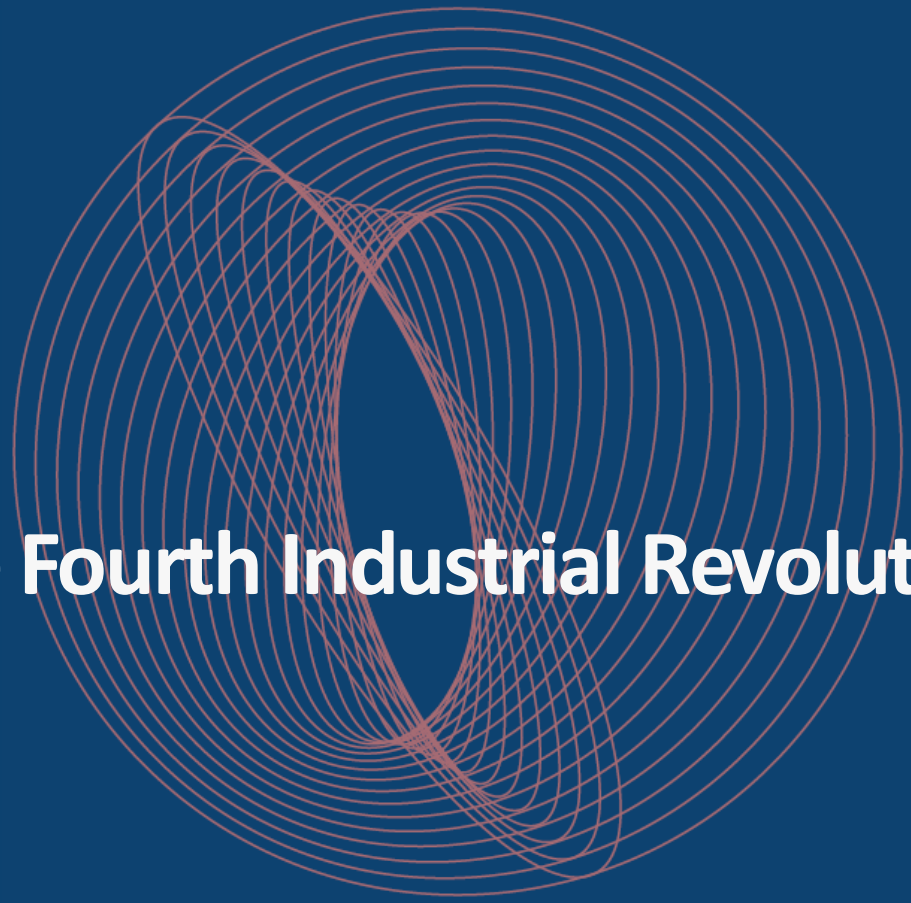
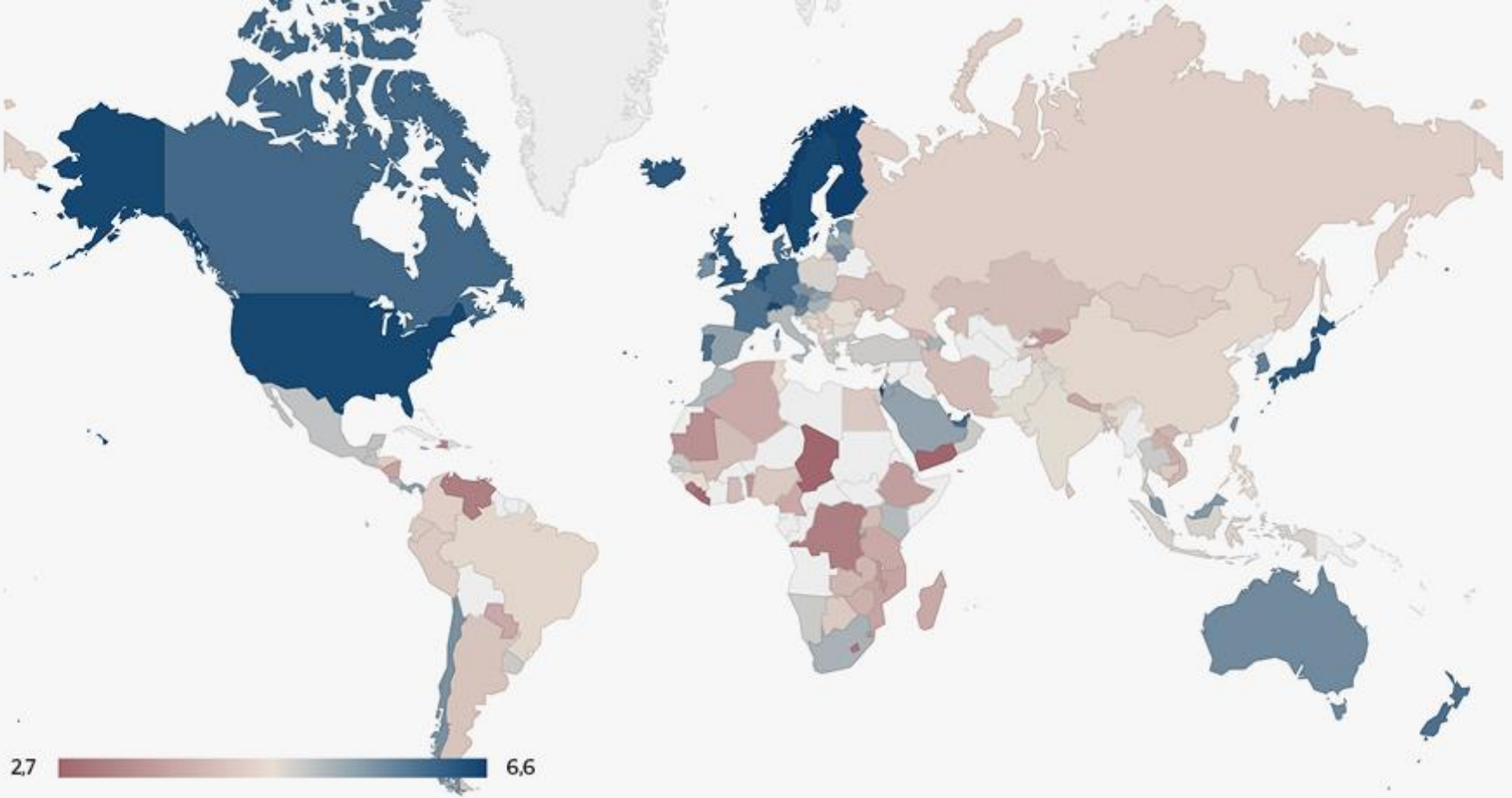


The Fourth Industrial Revolution

Dr. Huginn Freyr
Þorsteinsson

Industrial revolutions

- First (steam power) 1760-1870
- Second (electricity) 1870-1970
- Third (information technology) 1970-2010
- Fourth (artificial intelligence) 2010-

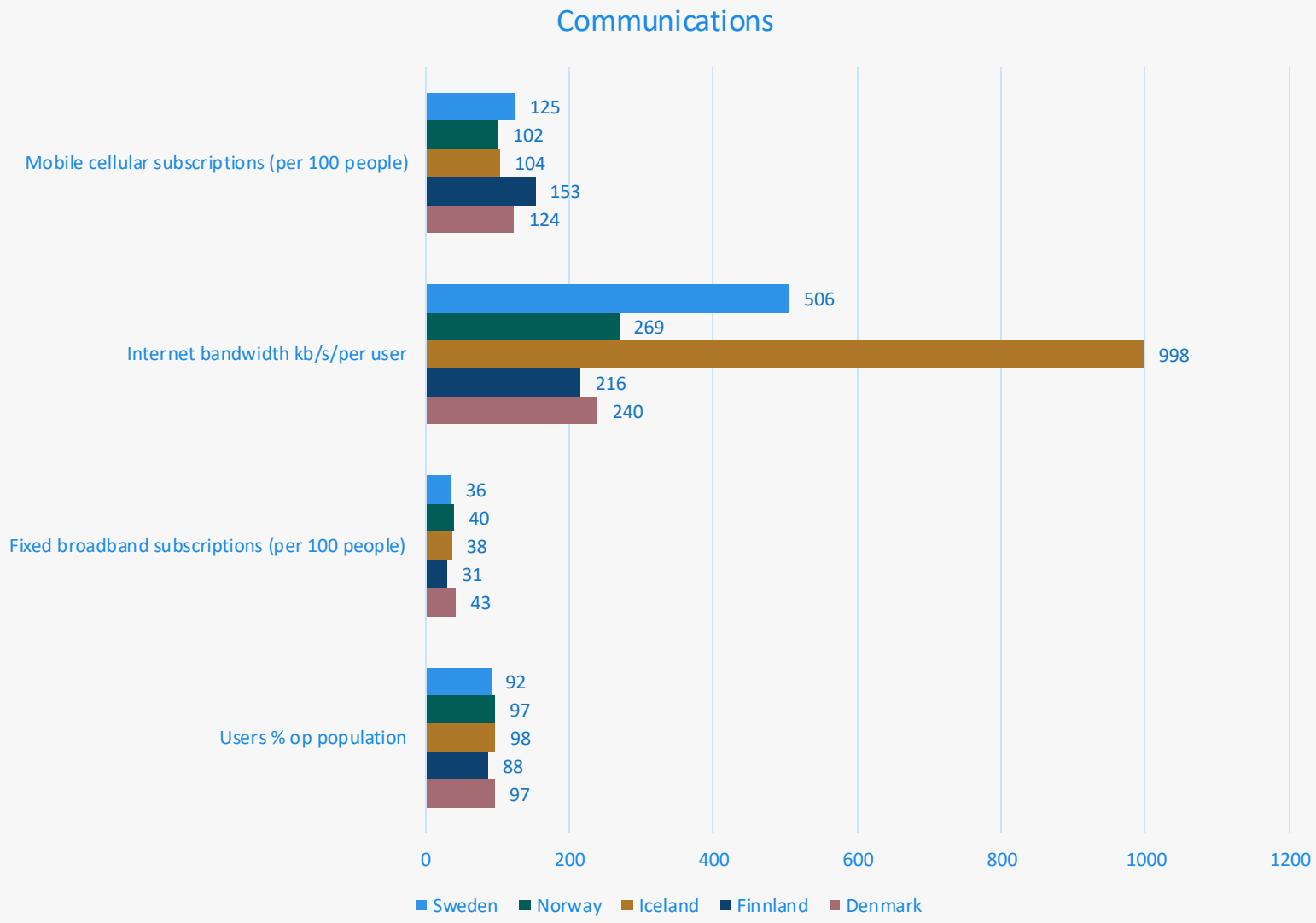


Technological readiness in the world varies greatly

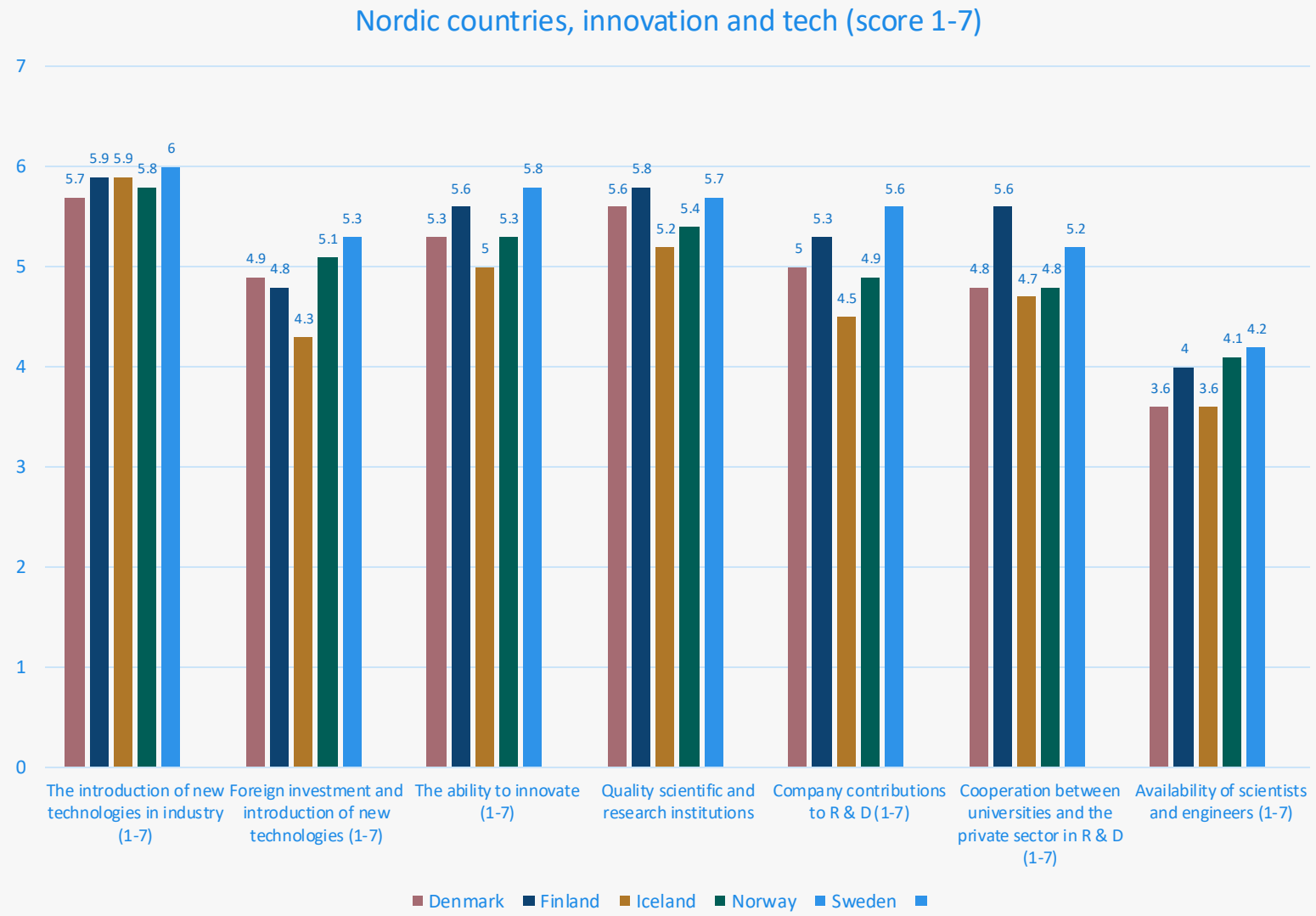
- Nordic countries well prepared for the fourth industrial revolution if we look at indicators like technological readiness.

The Nordic countries

- The Nordic countries are ready for the fourth industrial revolution.
- Several indicators show that the Nordic countries are leaders.
- Technological infrastructure one of the best in the world.



Innovation and the Nordics



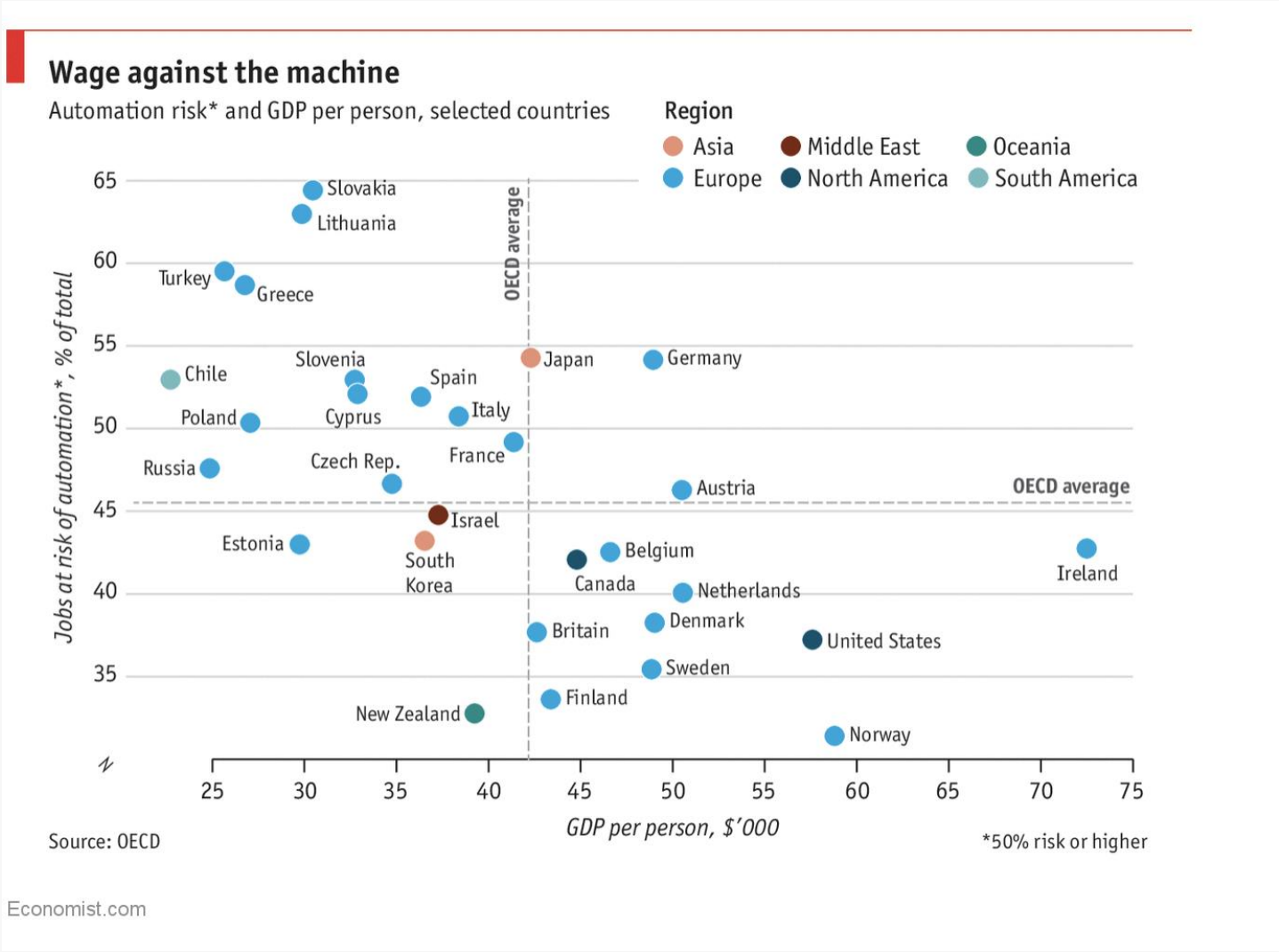
Fourth industrial revolution

- New technology
  - AI
  - Nano- and biotechnology
  - Augmented and virtual reality
  - Big data
  - 3D & 4D Printing
  - Internet of things
  - 5G

- Key concepts to understand
  - Artificial intelligence
  - Exponential growth
  - Disruption

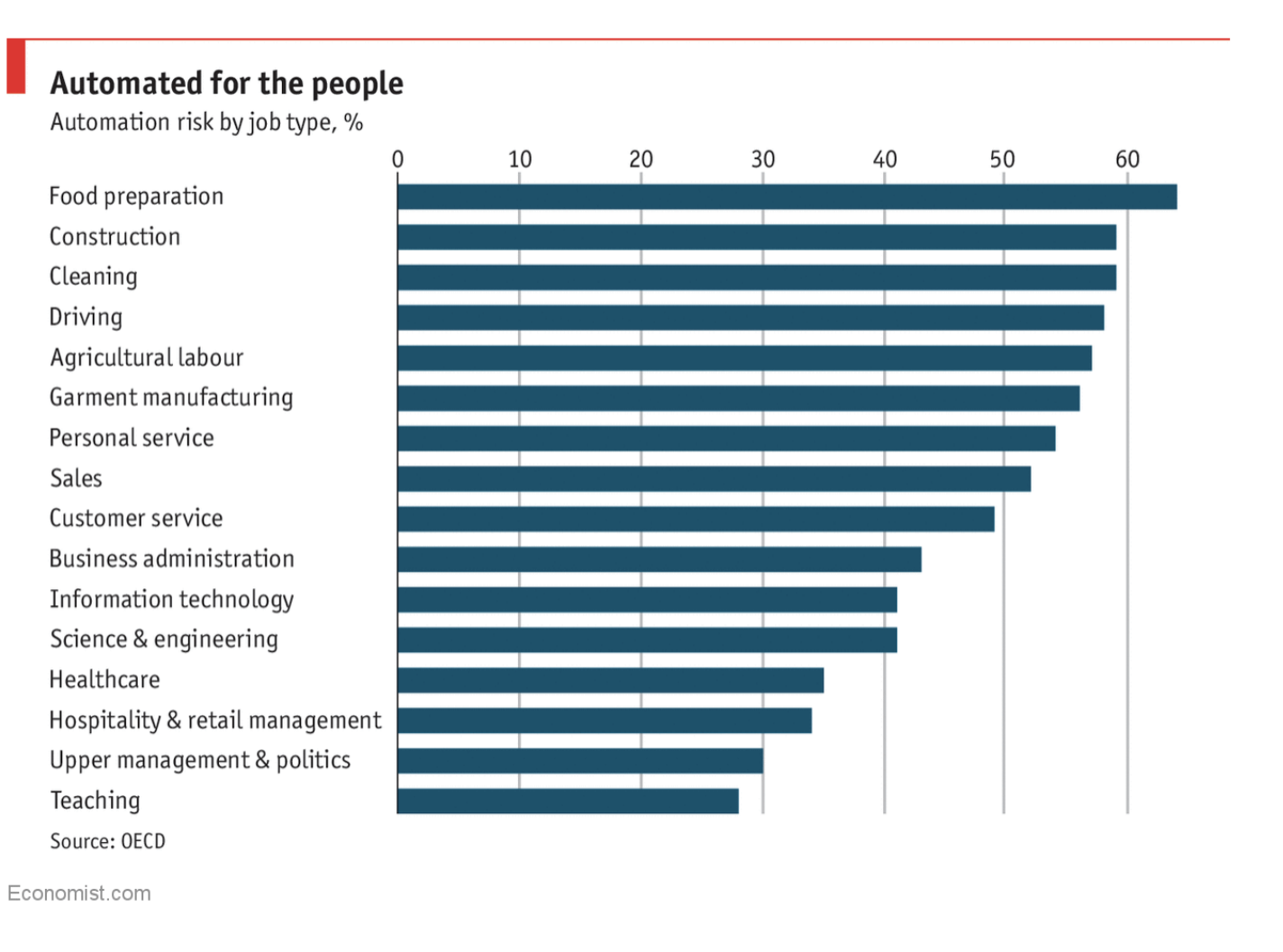
Automation and jobs

- Automation will have a huge impact on the labour market.
- Similar effects of automation in the Nordic countries.
- Nordic countries are advanced economies with even distribution of income and strong welfare systems.
- Effect of automation greater in other parts of the world.
- However, automation in fishing sector will lead to great changes.



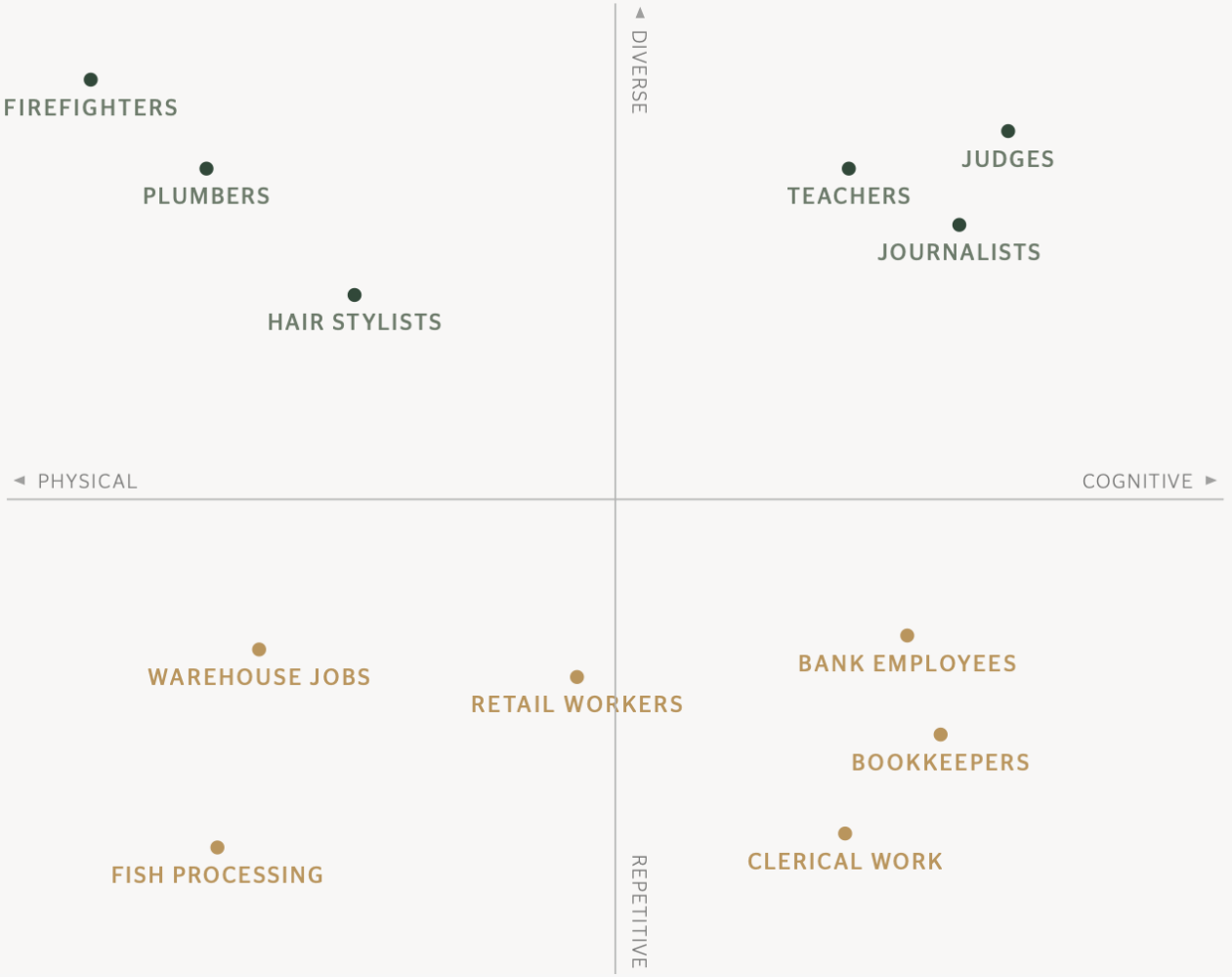
Automation and job sectors

- Food preparation is at the top of the list when looked at across countries.
- In the fourth industrial revolution automation will replace or change jobs that are cognitive and repetitive.
- Previous revolutions automation was on manual and repetitive tasks.



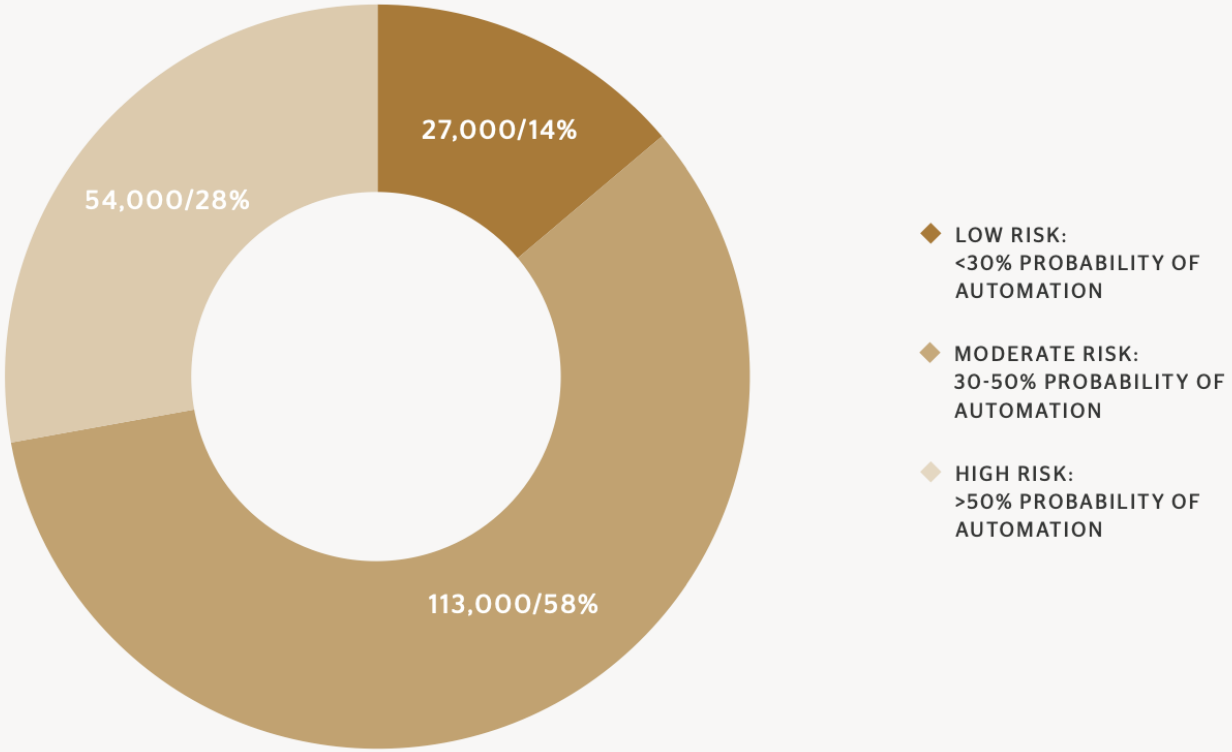
Cognitive vs manual

Figure 5 Impact of automation on labour market .[15]



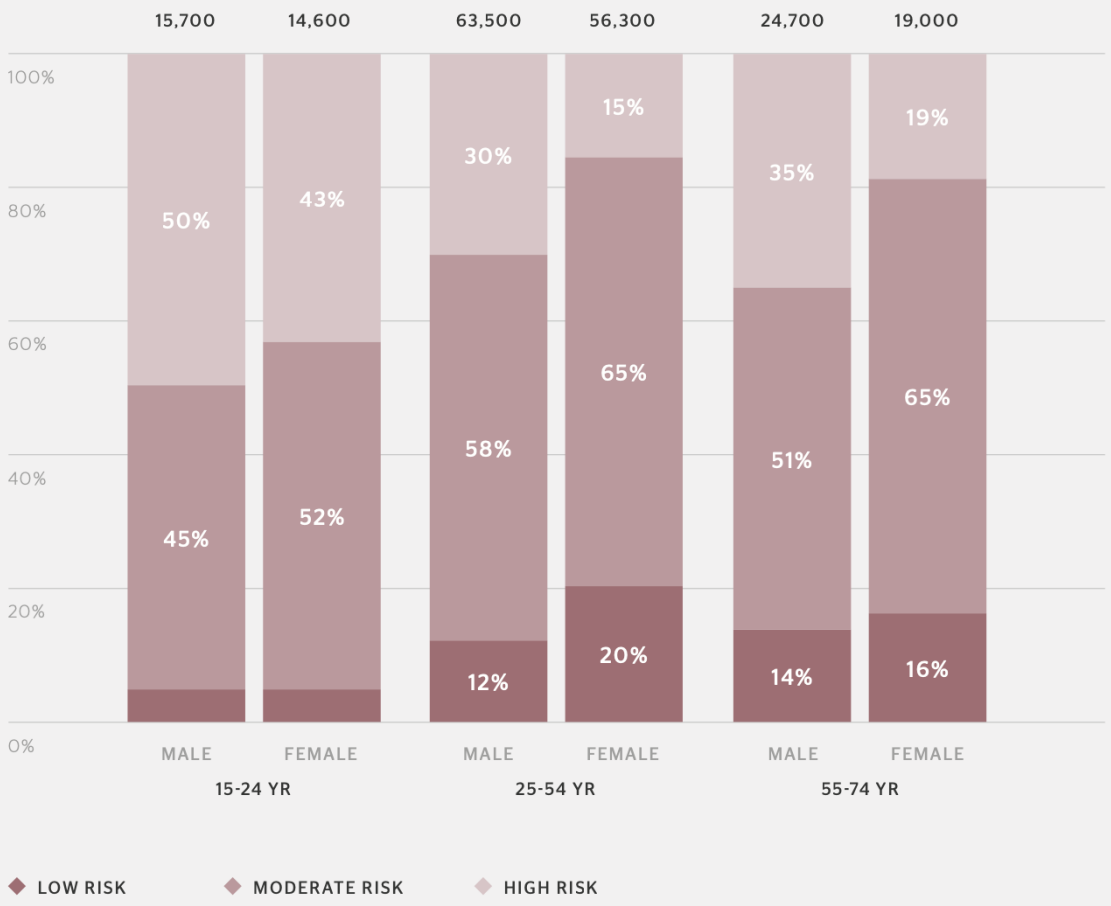
Automation of Icelandic

Figure 6 / Probability of automation of Icelandic jobs (Number of jobs and percentage, 2017)



Gender and age

Figure 11 Impact of automation, by gender and age.



Disruption

- Rural areas vs. high tech development.
- Shift in jobs. Traditional jobs automated but increase in high tech jobs.
- Competition with labour in other countries.
- Change of relation with consumer.
- Disruption of the traditional value chain.
- See report: https://www.government.is/library/01-Ministries/Prime-Ministrers-Office/Fjorda-idnbyltingin-skyrsla-enska_HQ.pdf