



European  
Commission

# European Innovation Scoreboard **2023** Country profile **Denmark**



Innovation

## European Innovation Scoreboard 2023 – Country profile Denmark

European Commission

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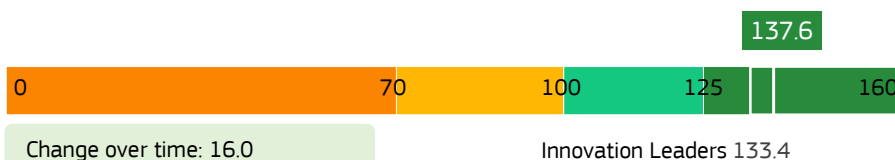
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The European Innovation Scoreboard report and annexes, and the indicators database are available at:

[https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard\\_en](https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en)



## Denmark

	Performance relative to EU in 2023	Performance change 2016-2023	Performance change 2022-2023
<b>SUMMARY INNOVATION INDEX</b>	<b>137.6</b>	<b>16.0</b>	<b>2.8</b>
<b>Human resources</b>	<b>176.7</b>	<b>-0.6</b>	<b>4.3</b>
Doctorate graduates	144.5	-34.3	-22.9
Population with tertiary education	140.5	-4.2	-4.2
Lifelong learning	256.9	61.5	61.5
<b>Attractive research systems</b>	<b>189.5</b>	<b>17.9</b>	<b>-11.2</b>
International scientific co-publications	274.9	90.9	0.0
Most cited publications	127.0	-23.1	-17.4
Foreign doctorate students	210.8	44.1	-7.3
<b>Digitalisation</b>	<b>145.6</b>	<b>2.4</b>	<b>0.0</b>
Broadband penetration	143.3	4.7	0.0
People with above basic overall digital skills	148.6	0.0	0.0
<b>Finance and support</b>	<b>111.9</b>	<b>42.6</b>	<b>3.1</b>
R&D expenditures in the public sector	146.9	1.6	-1.6
Venture capital expenditures	130.1	111.2	6.2
Government support for business R&D	46.7	26.6	6.4
<b>Firm investments</b>	<b>114.4</b>	<b>27.2</b>	<b>-4.5</b>
R&D expenditure in the business sector	118.1	-8.5	-5.4
Non-R&D Innovation expenditures	101.6	47.6	25.3
Innovation expenditures per employee	121.2	43.8	-30.7
<b>Use of information technologies</b>	<b>149.8</b>	<b>14.2</b>	<b>11.4</b>
Enterprises providing ICT training	162.6	25.5	19.7
Employed ICT specialists	136.7	3.4	3.4
<b>Innovators</b>	<b>117.2</b>	<b>63.4</b>	<b>-2.0</b>
Product innovators (SMEs)	120.2	46.2	-0.1
Business process innovators (SMEs)	114.5	81.7	-4.0
<b>Linkages</b>	<b>216.2</b>	<b>12.3</b>	<b>2.3</b>
Innovative SMEs collaborating with others	127.6	15.7	5.9
Public-private co-publications	468.0	89.1	0.0
Job-to-job mobility of HRST	181.3	-26.5	0.0
<b>Intellectual assets</b>	<b>136.9</b>	<b>-13.8</b>	<b>-11.9</b>
PCT patent applications	141.0	-0.6	2.5
Trademark applications	112.3	4.2	-5.4
Design applications	157.7	-44.8	-35.3
<b>Employment impacts</b>	<b>107.9</b>	<b>6.6</b>	<b>-5.5</b>
Employment in knowledge-intensive activities	120.5	0.0	0.0
Employment in innovative enterprises	97.5	12.8	-10.6
<b>Sales impacts</b>	<b>107.7</b>	<b>24.6</b>	<b>33.5</b>
Medium and high-tech goods exports	78.0	5.8	0.4
Knowledge-intensive services exports	140.8	10.8	5.6
Sales of innovative products	115.0	70.5	119.0
<b>Environmental sustainability</b>	<b>129.3</b>	<b>5.0</b>	<b>0.4</b>
Resource productivity	65.0	12.1	3.4
Air emissions by fine particulate matter	131.0	5.1	-1.0
Environment-related technologies	190.8	0.0	0.0

The second column shows performance relative to that of the EU in 2023. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2023; light green: between 100% and 125%; light orange: between 70% and 100%; dark orange: below 70%. The next columns show performance change over time between 2016 and 2023 and between 2022 and 2023, with scores relative to those of the EU in 2016. Positive (negative) performance changes are shown in green (red).

**DENMARK** is an **Innovation Leader** with performance at 137.6% of the EU average. Performance is above the average of the Innovation Leaders. Performance is increasing at a rate higher than that of the EU (8.5%-points). The country's performance lead over the EU is becoming larger.

### Relative strengths

Public-private co-publications  
International scientific co-publications  
Lifelong learning  
Foreign doctorate students  
Environment-related technologies

### Relative weaknesses

Government support for business R&D  
Resource productivity  
Medium and high-tech goods exports  
Employment in innovative enterprises  
Non-R&D Innovation expenditures

### Strong increases since 2016

Venture capital expenditures  
International scientific co-publications  
Public-private co-publications

### Strong decreases since 2016

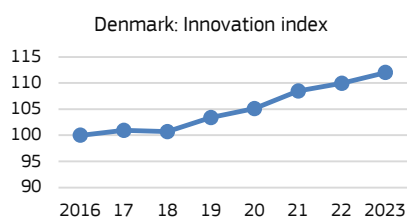
Design applications  
Doctorate graduates  
Job-to-job mobility of HRST

### Strong increases since 2022

Sales of innovative products  
Lifelong learning  
Non-R&D Innovation expenditures

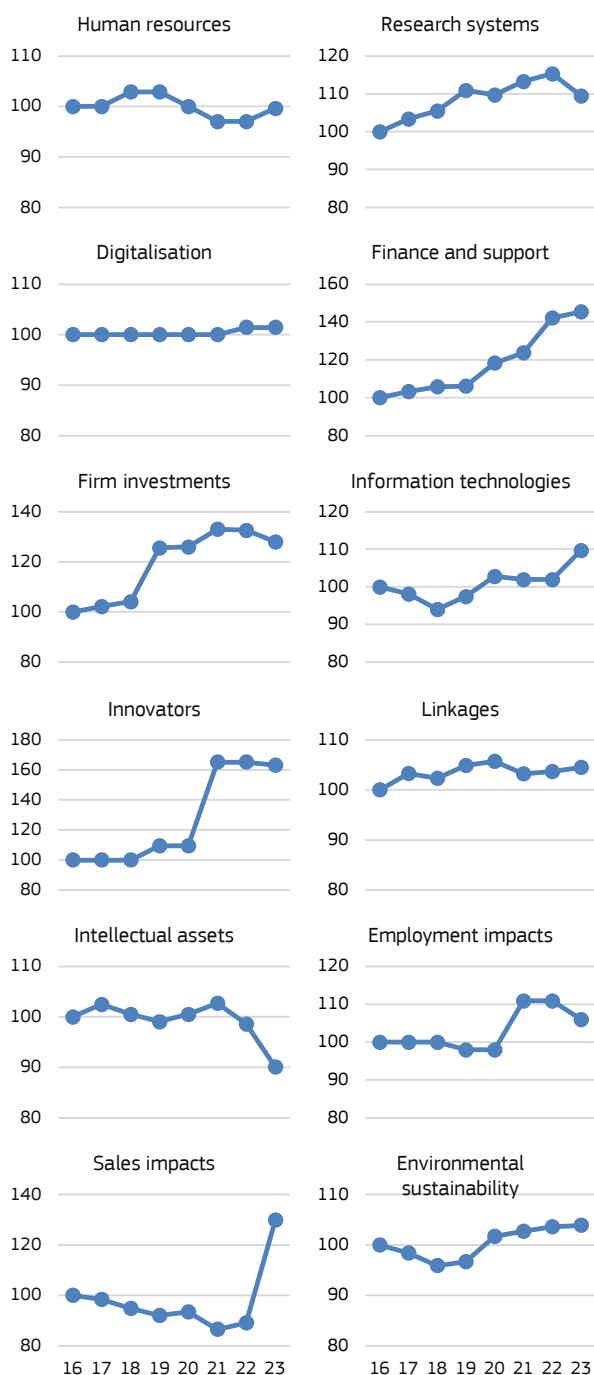
### Strong decreases since 2022

Design applications  
Innovation expenditures per employee  
Doctorate graduates



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2016. Innovation performance did not change between 2016 and 2018 and then started to increase resulting in a 12% increase in 2023.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2016. Performance improved strongly for Finance and support and Innovators, and did almost not change for Human resources and Digitalisation and even declined for Intellectual assets.





Performance is measured relative to that of the country in 2016 (=100).

**Structural differences** with the EU are shown below:

- Denmark has higher per capita income but a lower growing economy. Manufacturing takes up a smaller share of the economy, with SMEs accounting for a larger share of turnover.
- The presence of top R&D spenders adds positively to the innovation climate, enterprise births and entrepreneurial activities add negatively.
- Information on Innovation profiles is not available.
- Entrepreneurial training and rule of law are above the EU average as drivers of research and innovation.
- Denmark shows a mixed performance on Climate change related indicators with a below average share of material resources coming from recycled waste materials, a stronger reduction in greenhouse gas emissions, and an above average score on environmental innovation.

	DK	EU
<b>Performance and structure of the economy</b>		
GDP per capita (PPS)	43,700	32,600
Average annual GDP growth (%)	3.7	4.4
Employment share Manufacturing (NACE C) (%)	11.3	16.4
of which High and Medium high-tech (%)	43.1	38.0
Employment share Services (NACE G-N) (%)	41.3	41.1
of which Knowledge-intensive services (%)	36.0	35.8
Turnover share SMEs (%)	40.5	34.1
Turnover share large enterprises (%)	43.3	49.6
Foreign-controlled enterprises – share of value added (%)	11.7	11.8
<b>Business and entrepreneurship</b>		
Enterprise births (10+ employees) (%)	0.3	1.0
Total Entrepreneurial Activity (TEA) (%)	5.5	6.8
FDI net inflows (% GDP)	1.0	2.1
Top R&D spending enterprises per 10 mln. population	101.9	20.3
Buyer sophistication (1 to 7 best)	3.9	3.7
<b>Innovation profiles</b>		
In-house product innovators with market novelties	n/a	12.2
In-house product innovators without market novelties	n/a	12.8
In-house business process innovators	n/a	16.5
Innovators that do not develop innovations themselves	n/a	6.5
Innovation active non-innovators	n/a	4.1
Non-innovators with potential to innovate	n/a	17.2
Non-innovators without disposition to innovate	n/a	30.7
<b>Governance and policy framework</b>		
Corruption Perceptions Index (0 to 100 best)	88.7	64.0
Basic school entrepreneurial education and training	5.2	3.3
Govt. procurement of advanced tech. products	3.5	3.5
Rule of law (-2.5 to 2.5 best)	1.9	1.0
<b>Climate change indicators</b>		
Circular material use rate	7.6	11.8
Greenhouse gas emissions intensity of energy consumption	64.6	82.8
Eco-Innovation Index	137.9	100.0
<b>Demography</b>		
Population size	5.8	447.1
Average annual population growth (%)	0.4	-0.1
Population density	137.9	108.8



This report provides the Country profile from the 2023 European Innovation Scoreboard for Denmark.

*Studies and reports*