



European Innovation Scoreboard **2024** Country Profile **Finland**

European Innovation Scoreboard 2024 – Country profile Finland

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Innovation Leader ●

Summary innovation index (relative to EU in 2017): **140.6**

Rank: **4**

Change vs 2023: ▼ **-0.7** Change vs 2017: ▲ **11.8**

Finland is an Innovation Leader with performance at 127.8% of the EU average in 2024. Performance is below the average of the Innovation Leaders (132.1%). Performance is increasing more than the EU (+10%).

Indicator	Performance relative to the EU in 2024	Performance change 2017-2024	Performance change 2023-2024
SUMMARY INNOVATION INDEX	127.8	11.8	-0.7
Human resources	136.0	-21.1	4.2
New doctorate graduates	126.2	-34.7	11.6
Population with tertiary education	78.8	-5.4	-9.0
Population involved in lifelong learning	212.6	-18.3	9.2
Attractive research systems	150.0	29.5	0.5
International scientific co-publications	219.5	68.7	-6.9
Scientific publications among the top 10% most cited	126.6	4.2	0.2
Foreign doctorate students as a % of all doctorate students	123.6	49.3	7.8
Digitalisation	162.3	52.2	13.4
Broadband penetration	134.8	93.1	14.9
Individuals with above basic overall digital skills	200.4	11.5	11.5
Finance and support	111.1	26.3	0.8
R&D expenditure in the public sector	132.8	0.0	3.3
Venture capital expenditures	150.6	83.7	0.0
Direct and indirect government support of business R&D	37.0	-1.8	-2.1
Firm investments	108.7	11.3	-2.6
R&D expenditure in the business sector	136.7	7.5	-3.0
Non-R&D innovation expenditures	73.6	13.9	-8.8
Innovation expenditures per person employed	111.4	13.2	4.9
Use of information technologies	185.2	4.3	0.0
Enterprises providing ICT training	188.0	1.9	0.0
Employed ICT specialists	182.3	6.5	0.0
Innovators	124.6	-25.4	-31.4
SMEs introducing product innovations	139.8	-43.9	-23.3
SMEs introducing business process innovations	112.2	-7.5	-38.8
Linkages	206.4	38.8	-17.4
Innovative SMEs collaborating with others	214.4	47.8	-29.3
Public-private co-publications	367.7	28.9	-20.8
Job-to-job mobility of HRST	133.3	35.3	-5.9
Intellectual assets	123.5	-8.4	-10.6
PCT patent applications	143.1	0.0	0.0
Trademark applications	110.5	8.5	-9.2
Design applications	106.5	-32.8	-25.7
Employment impacts	136.4	27.3	8.7
Employment in knowledge-intensive activities	130.4	13.3	4.9
Employment in innovative enterprises	141.8	40.3	12.4
Sales impacts	99.4	25.4	11.1
Exports of medium and high technology products	67.3	6.3	7.1
Knowledge-intensive services exports	99.4	6.4	-6.3
Sales of new-to-market and new-to-firm innovations	150.9	81.5	40.9
Environmental sustainability	72.8	-2.8	1.4
Resource productivity	14.1	8.2	4.3
Air emissions by fine particulates	99.0	10.3	2.7
Environment-related technologies	90.3	-30.5	-3.1

Relative strengths

- Public-private co-publications
- International scientific co-publications
- Innovative SMEs collaborating with others

Relative weaknesses

- Resource productivity
- Direct and indirect government support of business R&D
- Exports of medium and high technology products

Strong increases since 2017

- Broadband penetration
- Venture capital expenditures
- Sales of new-to-market and new-to-firm innovations

Strong decreases since 2017

- SMEs introducing product innovations
- New doctorate graduates
- Design applications

Strong increases since 2023

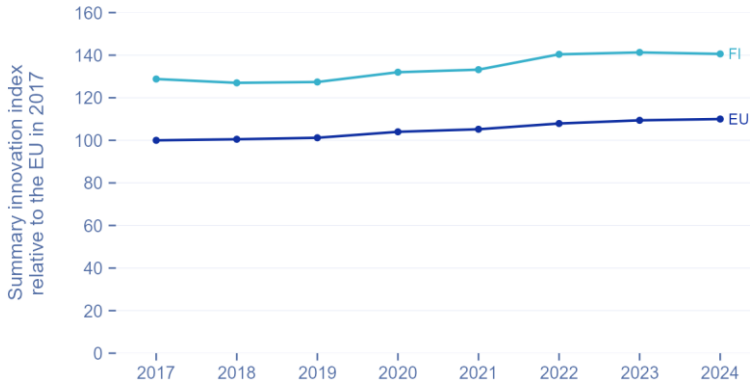
- Sales of new-to-market and new-to-firm innovations
- Broadband penetration
- Employment in innovative enterprises

Strong decreases since 2023

- SMEs introducing business process innovations
- Innovative SMEs collaborating with others
- Design applications

Footnote: The first data column shows scores relative to the EU in 2024, with colour codes indicating performance levels. The subsequent columns show performance changes over time, with scores relative to the EU in 2017, coloured in purple for positive change and red for negative change. As reference years differ between the first column (2024) and the last two columns (2017), scores cannot be directly compared or subtracted across these columns.

Emerging Innovators Moderate Innovators Strong Innovators Innovation Leaders



Summary innovation index

The line chart shows the evolution of the innovation performance of Finland over time, relative to the performance of the EU in 2017.

Footnote: All performance scores (SII and dimensions below) are relative to that of the EU in 2017.

Framework conditions

Finland performs above the EU average on new doctorate graduates (126.2% of EU level in 2024), despite the downward trend of 34.7%-points on this indicator since 2017, and on population involved in lifelong learning (212.6% of the EU average in 2024). However, Finland’s rate of tertiary educational attainment is at 78.8% of the 2024 EU average, and lower than Nordic peers’ performance (European Commission, 2024) - a situation mostly due to the severe shortages of study places in universities (OECD, 2022). The country has a strong research system with significant international cooperation on scientific publications, standing at 219.5% of the 2024 EU level. Furthermore, it performs at 126.6% of the 2024 EU average in scientific publications in the top 10% most cited, recording an improvement of 4.2%-points since 2017. Finland has also seen an increase of 49.3%-points in the share of foreign doctoral students since 2017, now standing at 123.6% of the EU average.

Finland has strengthened its efforts on digitalisation under the recovery and resilience plan (RRP) with increased investments in broadband coverage and digital skills, among others. The country performs at 134.8% of the 2024 EU average on broadband penetration, with a 93.1%-point increase since 2017, and at 200.4% of the 2024 EU level on individuals with above basic digital skills.

Human resources



Attractive research systems



Digitalisation



Investments

Finland outperforms the EU on all dimensions in this category. It stands at 132.8% of the 2024 EU level on public sector R&D expenditure, which grew moderately since 2023, in line with the government commitment to increase public R&D spending to 1.33% of GDP by 2030 (OECD, 2022). However, the state support to business R&D fell by 1.8%-points since 2017, and represents only 37.0% of the 2024 EU average, as the government is yet to introduce a new R&D tax incentive and to put to use the RRP funds to boost business investments in R&D (European Commission, 2024). Finland’s relatively large venture capital market was a useful contributor to the R&D investments, standing at 150.6% of the 2024 EU average and registering a steady increase of 83.7%-points since 2017.

Firm investments into R&D have been mostly driven by large enterprises in Finland, and concentrated in ICT sector, as OECD Economic Survey 2022 points out, leaving much room for state intervention to boost R&D spending by SMEs and diversifying the base of business-based R&D (OECD, 2022). However, despite a 3.0%-point decrease in business sector R&D expenditure, Finland outperforms the EU on this indicator, at 136.7% of the 2024 EU average. The increases in energy prices and inflation are likely to have had a negative effect on non-R&D innovation expenditures by firms, with Finland standing below the EU average on this indicator (73.6%).

Finally, Finland performs strongly on the use of ICT – at 185.2% of the 2024 EU level, in line with the weight of the ICT sector in the economy and a strong pool of workforce with STEM skills. In fact, Finland employs almost twice as many

ICT specialists as on average in the EU, and nearly twice as many enterprises provide ICT training to their employees in the country – with both indicators registering an increase since 2017.

Finance and support



Firm investments



Use of information technologies



Innovation activities

Finland performs significantly above the EU average on the Innovators and Linkages dimensions, standing at 124.6% and 206.4% of the 2024 EU average, respectively. However, it has registered a decline on all indicators in these categories since 2023, likely due to continued negative economic effects of increased energy prices and economic slow-down in the context of deteriorating global conditions (OECD, 2022). Finland has also been experiencing severe shortages of highly skilled workers that are holding innovative firms back from expanding R&D and collaborating with research institutions (OECD, 2022), which can explain the negative trends observed. Despite this, compared to 2017, Finland improved its performance on all indicators when it comes to Linkages, with the strongest 47.8%-point increase on SMEs collaborating with others on innovation, and the country performing at the 367.7% of the 2024 EU level on public-private publications.

Finland performs above the EU average on Intellectual assets, standing at 123.5% of the EU level in 2024. It has strong results on patent applications as, for instance, in 2023, Finnish Patent and Registration Office (PRH) received a record high number of patent applications (Yle, 2024), in particular in electrical engineering. In terms of trademarks, Finland stands at 110.5% of the 2024 EU average, with an 8.5%-point increase since 2017. However, Finland experiences a decrease in the number of design applications falling by 32.8%-points since 2017, while performing at 106.5% of the 2024 EU level.

Innovators



Linkages



Intellectual assets



Impacts

Finland performs at 130.4% of 2024 EU average on employment in knowledge-intensive activities, and at 141.8% on employment in innovative enterprises. It stands at 150.9% on sales of new innovations, with a substantial 81.5%-point increase compared to 2017, the strongest increase among all indicators in this category. However, Finland lags behind the EU on exports of medium and high technologies, standing at 67.3% of the 2024 EU average. This might be explained by the overall comparatively low export intensity of Finland, characterised by export concentration in large firms and relatively low level of SME exports and global value chains integration (OECD, 2022).

Among its group of Innovation Leaders, Finland has the weakest performance on environmental sustainability, with room for improving the economy’s resource productivity, currently standing at 14.1% of the EU level. Finland’s green transition has suffered from recent negative trends in its investment environment (e.g., energy and rising interest rates, higher prices for raw materials, etc.) but the Government plans to address this issue (i.e., 2022 climate act and national adaptation plan for 2030), including through the RRP funding. The development of environment-related technologies saw a 30.5%-point decline compared to 2017 with the country performing at 90.3% of the 2024 EU average on this indicator.

Employment impacts**Sales impacts****Environmental sustainability****Structural differences****Performance and structure of the economy**

Finland is an advanced, high-income economy with a GDP per capita at 110% of the EU average. The country entered a recession in 2023 (European Commission, 2024) following the global economic conditions and given its waning productivity (OECD, 2022). The EU forecasts growth close to 0% of real GDP in 2024, and 1.4% in 2025 (European Commission, 2024a). Services account for 70% of value added in the economy and represent almost 40% of total employment, similar to the EU average. The share of SMEs and large enterprises in total turnover in Finland are comparable to the EU average.

Business and entrepreneurship

The business environment in Finland shows dynamism performing above EU average on total entrepreneurial activity (7.9 vs 6.8 in the EU). The business sector is significantly more R&D intensive than the EU, with more top R&D spending enterprises in Finland (24.1 vs 8.4). Higher than in the EU buyer sophistication contributes to driving demand for innovation, despite the relatively small internal market. Finland has managed to attract a larger share of FDI compared to the EU average, 3.9% of GDP compared to 1.9% in the EU, with investments concentrated mainly in manufacturing, financial and insurance activities, and information and communication (Lloyds Bank, 2023).

Innovation profiles

Finland has a significant share of firms producing in-house new-to-the-market innovations and innovating their business processes, larger than in the EU (23.5 vs 11.7 for product innovations, and 20.0 vs 17.6 for process innovations), reflecting the dynamic start-up and innovation ecosystem together with the culture of incremental innovation in Finnish industries (OECD, 2022). Most innovators rely on their own innovation capabilities, with only 4.5% of firms developing their innovations not in-house (compared to 6.1% in the EU), as business investment in R&D represented almost two thirds of the overall gross expenditures on R&D in 2022.

Governance and policy framework

Finland has robust institutions and transparent governance mechanisms with higher than EU average performance on Corruption Perception Index (CPI) and Rule of law. In fact, Finland ranks second on the 2023 Transparency International CPI (Transparency.org, 2023). The state actively engages in procuring innovation and advanced technologies with higher than the EU average performance in this regard and the Government has plans to increase its innovative public procurement (OECD, 2022). Finland's basic-school entrepreneurial education and training is almost triple of that of the EU and contributes to the country's strong entrepreneurship base.

Climate change

Finland's efforts on circular material use and resource productivity have so far been limited, the country performing among the lowest in the EU on these indicators (European Commission, 2024). However, Finland outperforms the EU on the Eco-innovation index (178.0 vs 121.5 in the EU).

Demography

Finland has a population of around 5.5 million and is growing at a similar rate as the EU. It has a much lower population density compared to the EU average.

Structural indicators

The table below presents some structural differences between Finland and the EU.

	FI	EU
Performance and structure of the economy		
GDP per capita	110	100
Average annual GDP growth (2021-2023 average)	0.1	1.9
Employment share Manufacturing	12.8	15.8
Employment share High and Medium high-tech	37.3	37.9
Employment share Services	39.4	39.8
Employment share Knowledge-intensive services	32.4	28.6
Turnover share SMEs	13.5	12.6
Turnover share large enterprises	46.2	49.6
Foreign-controlled enterprises – share of value added	12.8	13.3
Business and entrepreneurship		
Enterprise births	0.7	0.8
Total Entrepreneurial Activity	7.9	6.8
FDI net inflows	3.9	1.9
Top R&D spending enterprises	24.1	8.4
Buyer sophistication	4.6	3.6
Innovation profiles		
In-house product innovators with market novelties	23.5	11.7
In-house product innovators without market novelties	14.4	13.7
In-house business process innovators	20	17.6
Innovators that do not develop innovations themselves	4.5	6.1
Innovation active non-innovators	6.3	4.2
Non-innovators with potential to innovate	0	17.8
Non-innovators without disposition to innovate	31.4	30.6
Governance and policy frameworks		
Corruption Perceptions Index	87.3	64
Basic-school entrepreneurial education and training	6.1	2.6
Government procurement of advanced technology products	3.9	3.4
Rule of law	2	1
Innovation procurement as a share of total public procurement	16.5	9.2
Climate change		
Circular material use rate	2.2	11.5
Greenhouse gas emissions intensity of energy consumption	69.3	82.8
Eco-Innovation Index	178	121.5
Demography		

	FI	EU
Population size (in millions)	5.5	447
Average annual population growth (2021-2023 average)	0.3	0.3
Population density	18.2	109

References

The country's relative strengths and weaknesses for each indicator, compared to other EU Member States and neighbouring countries, can be found in [Annex B](#).

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This report provides the Country profile from the 2024 European Innovation Scoreboard for Finland

Studies and reports