

28 November 2023

(Updated 9 February 2024)

R&D Statistics
Year 2022. Definitive data

Internal R&D expenditure increased by 12.0% in 2022, reaching 19,325 millions of euros (1.44% of GDP)

In per capita terms, internal R&D expenditure amounted to 402 euros per inhabitant

Internal Research and Development (R&D) expenditure amounted to 19,325 millions of euros in 2022, representing an increase of 12.0% over the previous year.

This represented 1.44% of the Gross Domestic Product (GDP), compared to 1.41% in 2021.

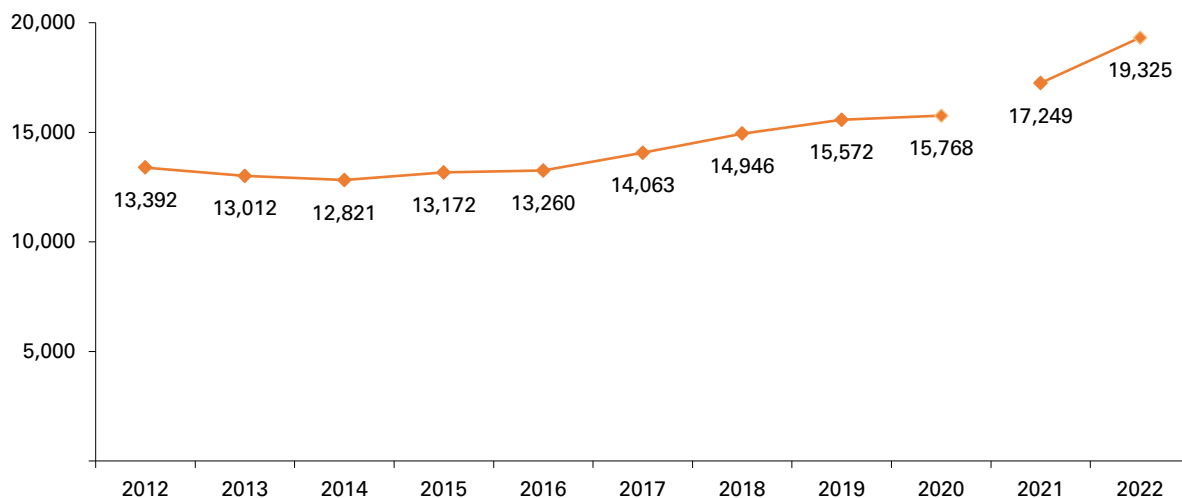
By implementing sector, the *Business* sector represented the highest percentage of internal R&D expenditure, with 56.4% (which meant 0.81% of GDP). It was followed by the *Higher Education* sector, with 26.0% (0.37% of GDP).

In turn, internal R&D expenditure in the *General Government* sector accounted for 17.2% of national expenditure (0.25% of GDP). The remaining 0.3% corresponded to the *Non-Profit Private Institutions* (NPI) sector.

R&D expenditure increased by 12.4% compared to the previous year in the *Companies* sector, 9.6% in *Higher Education* and 14.4% in *General Government*.

Evolution of internal R&D expenditure. National Total (*)

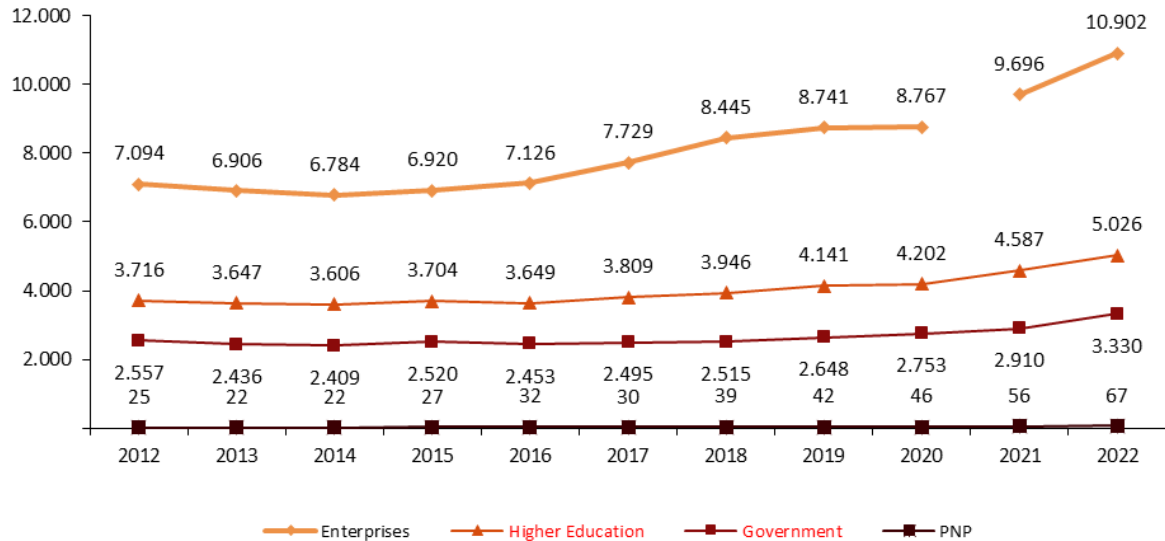
Millions of euros



(*) Break in the series due to the change in the concept of "company" in 2021.

Evolution of internal R&D expenditure. Implementing Sectors (*)

Millions of euros



(*) Companies: Legal units until 2020 and statistical companies from 2021.

Funding of internal R&D activities

Internal R&D activities were mainly financed in 2022 by the *Business* sector (49.3% of the total) and the *General Government* (37.7%).

Funds from the Rest of the World (8.5%), from *Higher Education* (3.7%) and from IPSFL (0.8%) completed the funding.

By implementing sectors, internal R&D expenditure in the *General Government* and *Higher Education* was mainly financed by the *General Government* (80.0% and 71.3%, respectively).

On the other hand, 82.1% of the financing of internal R&D expenditure in the *Business* sector came from the sector itself.

Internal R&D expenditure by implementing sector and by source of funds

Year 2022. Thousands of euros

Execution sector	Total	Source of Funds				
		Government	Higher Education	Enterprises	PNP	Rest of the World
TOTAL	19,324,755	7,286,050	719,558	9,535,429	147,077	1,636,640
Government	3,329,694	2,662,654	10,003	268,192	52,622	336,224
Higher Education	5,026,022	3,581,181	707,341	274,275	68,854	394,372
Enterprises	10,901,728	1,035,845	2,163	8,954,069	18,210	891,441
PNP	67,311	6,370	52	38,893	7,392	14,603

Personnel employed in internal R&D

A total of 263,407 full-time equivalent (FTE) persons were engaged in internal R&D activities in 2022, representing 12.9 per thousand of the total employed population and an increase of 5.6% over the previous year.

The group of researchers reached the figure of 161,751 full-time equivalent persons, which represented 7.9 per thousand of the total employed population and an increase of 4.9% with respect to 2021.

40.8% of full-time equivalent in-house R&D personnel were women. The highest percentages of female participation were in *General Government* (54.5% of total employment) and in the *IPSFL* (51.3%). In *Higher Education*, this percentage stood at 46.5%, whereas in the *Business* sector it was 31.6%.

R&D personnel by implementing, occupation and gender

Year 2022. In full-time equivalence

Execution Sector	Total personnel			Researchers		
	Total	Rate of Change	% Women	Total	Rate of Change	% Women
TOTAL	263,407.1	5.6	40.8	161,750.5	4.9	39.6
Government	44,958.1	1.8	54.5	23,741.7	1.4	50.6
Higher Education	92,031.2	4.3	46.5	72,568.4	3.7	43.5
Enterprises	125,529.2	7.8	31.6	64,911.9	7.5	31.0
PNP	888.6	40.1	51.3	528.5	51.5	50.7

Expenditure and personnel in internal R&D by Autonomous Community

The autonomous communities with the highest growth rates in internal R&D spending in 2022 were La Rioja (26.7%), Cataluña (18.2%) and Aragón (15.6%).

In contrast, internal R&D expenditure fell in Castilla-La Mancha (-7.6%), while the lowest increases were recorded in Cantabria (4.0%) and Comunidad Foral de Navarra (5.1%).

Internal R&D expenditure and total FTE personnel by Autonomous Community

Year 2022. Thousands of euros

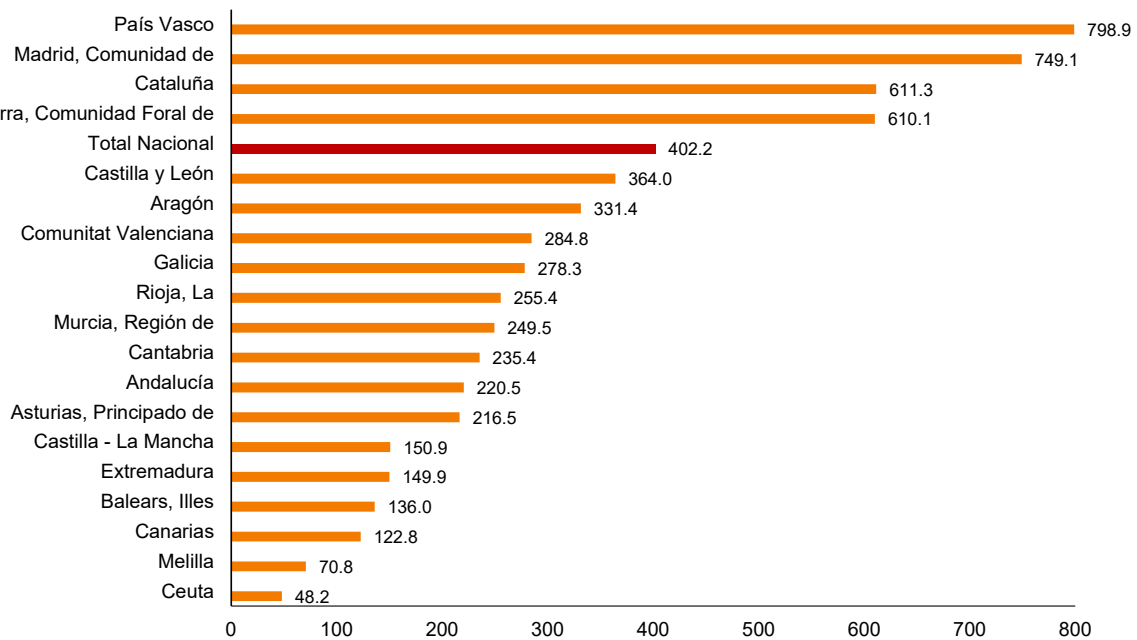
	R&D Expenditures			Total R&D personnel in FTE		
	Total	%	Annual rate	Total	%	Annual rate
TOTAL	19,324,755	100.0	12.0	263,407.1	100.0	5.6
Andalucía	1,890,566	9.8	11.0	28,518.4	10.8	5.6
Aragón	447,121	2.3	15.6	7,321.3	2.8	9.7
Asturias, Principado de	217,867	1.1	6.6	3,618.3	1.4	6.9
Balears, Illes	164,211	0.8	12.4	3,237.5	1.2	8.0
Canarias	271,596	1.4	13.9	4,216.6	1.6	5.2
Cantabria	138,479	0.7	4.0	2,260.5	0.9	4.6
Castilla y León	866,999	4.5	8.9	11,701.0	4.4	5.2
Castilla-La Mancha	313,897	1.6	-7.6	4,453.1	1.7	15.3
Cataluña	4,827,232	25.0	18.2	58,771.3	22.3	5.1
Comunitat Valenciana	1,485,293	7.7	9.7	22,953.4	8.7	3.9
Extremadura	158,054	0.8	6.0	2,979.3	1.1	7.7
Galicia	751,045	3.9	8.1	12,349.5	4.7	8.6
Madrid, Comunidad de	5,130,046	26.5	13.0	64,470.0	24.5	5.5
Murcia, Región de	387,214	2.0	10.2	7,162.3	2.7	5.5
Navarra, Comunidad Foral de	409,931	2.1	5.1	5,346.3	2.0	0.9
País Vasco	1,772,820	9.2	6.4	22,446.3	8.5	4.4
Rioja, La	82,328	0.4	26.7	1,471.4	0.6	12.7
Ceuta	3,992	0.0	10.3	63.1	0.0	16.2
Melilla	6,064	0.0	8.5	67.6	0.0	4.0

In per capita terms, internal R&D expenditure amounted to 402 euros per inhabitant in 2022. The communities with the highest expenditure were the País Vasco (798.9 euros), Comunidad de Madrid (749.1) and Cataluña (611.3).

On the other hand, those that registered the lowest expenditure per inhabitant were the autonomous cities of Ceuta (48.2 euros) and Melilla (70.8), and Canarias (122.8).

Internal R&D expenditure per inhabitant and by Autonomous Communities

Year 2022. Euros



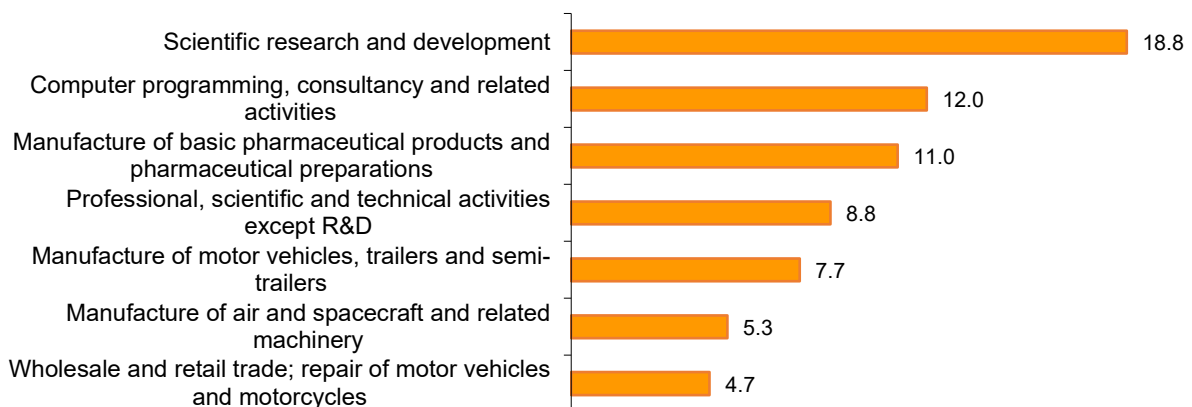
Distribution of internal R&D expenditure by branches of activity

Companies in the *Services* sector accounted for 52.1% of expenditure on business internal R&D in the year 2022, while those in *Industry* sector accounted for 46.2%.

By activity branches, *R&D Services* (with 18.8% of total spending), *Programming, consulting and other IT activities* (12.0%) and *Motor vehicles* (11.0%) stood out.

Distribution of internal R&D expenditure by branch of activity

Year 2022. Percentage



Data Review and Update

The data published today are final. All results are available on INEBase.

Methodological note

The main objective of the Statistics on scientific research and technological development (R&D) activities is to measure the economic and human resources devoted to research by all sectors of the economy (companies, general governments, higher education and non-profit private institutions) in order to:

- Provide a tool for the management, planning, decision-making and control of national science policy.
- Provide statistical authorities with the information they request, obtained according to international standards that allow comparability across countries.

Type of survey: annual continuous survey.

Population scope: companies, general go, universities and higher education centres and non-profit private institutions engaged in R&D activities.

Geographical scope: the entire national territory.

Results reference period: year preceding the year of data collection.

Information reference period: for expenditure, calendar year; for personnel, annual average and full-time equivalent (person/year).

Sample size: 45,000 companies, 557 public administration centres (including public hospitals), 86 universities, 109 higher education centres and 172 private non-profit institutions.

Sample type: exhaustive for directory units and random for non-directory units.

Collection method: mixed system with mailings and interviewer participation.

For more information you can access the methodology and the standardized methodological report at:

https://www.ine.es/dynqs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176754&menu=metodologia&idp=1254735576669

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