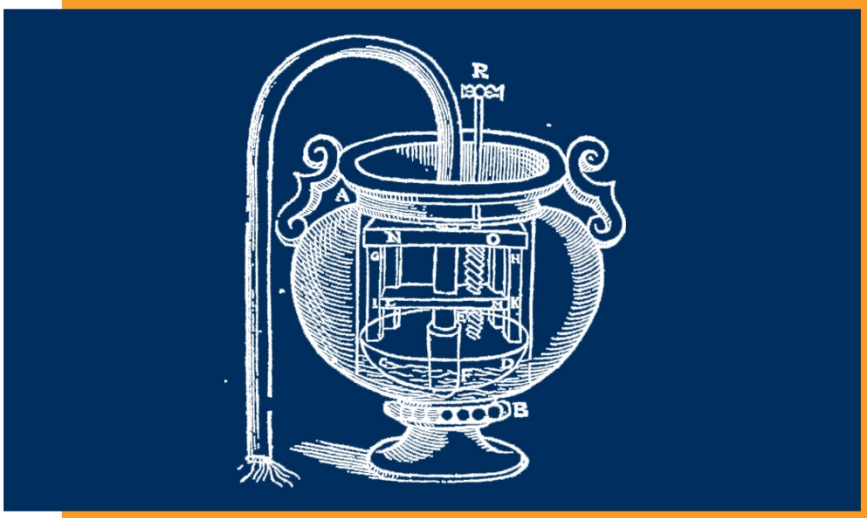
CNR-IRCrES Working Paper

National frameworks for universities' community engagement: perspectives from Italy, France and the UK



5/2024

Valentina Carazzolo,
Ugo Finardi,
Emanuela Reale,
Andrea Orazio Spinello

CNR IRCrES
Istituto di Ricerca sulla Crescita Economica Sostenibile

ISSN (online) 2421-7158
ISSN (print) 2421-6798

Direttore	Giuseppe Giulio Calabrese
Direzione	CNR-IRCrES *Istituto di Ricerca sulla Crescita Economica Sostenibile* Strada delle Cacce 73, 10135 Torino, Italy Tel. +39 011 3977612 segreteria@ircres.cnr.it www.ircres.cnr.it
Sede di Roma	Via dei Taurini 19, 00185 Roma, Italy Tel. +39 06 49937809 / Fax +39 06 49937808
Sede di Milano	Via Corti 12, 20121 Milano, Italy Tel. +39 02 23699501 / Fax +39 02 23699530
Sede di Genova	Corso Ferdinando Maria Perrone 24, 16152 Genova, Italy Tel. +39 010 6598798

redazione@ircres.cnr.it
https://www.ircres.cnr.it/produzione-scientifica/

CNR-IRCrES Working Paper 5/2024

National frameworks for universities' community engagement: perspectives from Italy, France and the UK

VALENTINA CARAZZOLO*, UGO FINARDI**, EMANUELA REALE*, ANDREA ORAZIO SPINELLO*

*CNR-IRCrES, Consiglio Nazionale delle Ricerche – Istituto di Ricerca sulla Crescita Economica Sostenibile, Via dei Taurini, 19, Roma, Italia
**CNR-IRCrES, Consiglio Nazionale delle Ricerche – Istituto di Ricerca sulla Crescita Economica Sostenibile, Strada delle Cacce 73, 10135 Torino, Italia

corresponding author: valentina.carazzolo@ircres.cnr.it

ABSTRACT

This working paper presents some preliminary outputs from the PRIN 2022 project 'PLACES', which aims at investigating the factors influencing universities' community engagement across various levels – individual, institutional, and systemic. This work wants to provide an initial contribution to the study of systemic level, by offering an overview of the socio-economic and higher education frameworks – in Italy, France, and the United Kingdom –, that may support the development of universities' community engagement. An extensive data collection was conducted, utilizing socio-economic and R&D indicators, higher education system data, survey results on public attitudes towards science, complemented by a retrieval of information on national public engagement strategies, drivers and incentives. The findings are organized into *country fact sheets* which systematically report data and information gathered for each country, preparing for future research to be performed within the project. The analysis reveals that Italy, France, and the UK have distinct socio-economical and higher education environment that may influence their approach to public engagement. In Italy, public engagement is strongly driven by the evaluation exercises targeting universities. In the UK, significant investment in R&D and a supportive academic environment facilitate initiatives that could enhance connections between academia and society. In France, there is a lack of institutional recognition for public engagement, as intended in the other two countries.

KEYWORDS: public engagement; community engagement; third mission; university; science-society dialogue.

DOI: 10.23760/2421-7158.2024.005
ISSN (online): 2421-7158

HOW TO CITE
Carazzolo, V., Finardi, U., Reale, E., Spinello, A.O. (2024). *National frameworks for universities' community engagement: perspectives from Italy, France and the UK* (CNR-IRCrES Working Paper 5/2024). Istituto di Ricerca sulla Crescita Economica Sostenibile. Disponibile da http://dx.doi.org/10.23760/2421-7158.2024.005

Contents

1 INTRODUCTION

Over the past few decades, there has been a growing demand for universities to increase the societal and economic impact of their research (Martin, 2011; Godonoga & Sporn, 2023). This involves, among other things, developing initiatives to foster the engagement of society in the process of knowledge creation. Since the late 1980s, universities have been increasingly encouraged to play a more active role and to abandon their traditional ivory tower status (Compagnucci & Spigarelli, 2020). The concept of third mission emerged from those years, identifying the activities undertaken by higher education institutions to generate a concrete societal impact (Pinheiro *et al.*, 2015). Universities are thus supposed to contribute to the production of knowledge, following a more participatory process that takes into account the needs of external partners. There is indeed widespread agreement that the creation of bridges and connections between the academic environment and society could carry a number of positive spill-over effects for both higher education institutions and external stakeholders (Jongbloed *et al.*, 2008), e.g. in order to more effectively address the upcoming societal challenges (Zuti & Lukovics, 2017; Mazzucato, 2018).

The broad concept of third mission encompasses a multitude of referents with slight differences in meaning but that are frequently used interchangeably (Vargiu, 2014; Marino *et al.*, 2019). Among these, with the term "public engagement" we circumscribe the various ways to involve the wide public in the research and higher education activities, in order to ensure benefits for all sides involved in the process (NCCPE, 2024). The importance of public engagement activities has been increasingly recognised by both researchers and institutions as an opportunity to enhance the relationship between universities and society in many ways, e.g. ensuring social acknowledgement and accountability for research activities (Blue & Davidson, 2020; Bridger & Alter, 2006) and enabling a participatory and democratic dialogue with local communities and stakeholders to produce economically and socially relevant outcomes (Higgins *et al.*, 2024; Breznitz & Feldman, 2012). In some countries, these initiatives are considered in the context of national research evaluation processes, such as the *Research Excellence Framework (REF)* in the UK and the *Valutazione della Qualità della Ricerca (VQR)* in Italy.

Even though public engagement activities are highly encouraged and recommended at various levels, achieving societal and economic impact is not always straightforward (Reale, 2022). Many factors can influence the outcomes of public engagement initiatives: individual academics' attitudes (Grand *et al.*, 2015; Anzivino *et al.*, 2021; Atta-Owusu & Fitjar, 2022); universities' strategies (Franzoni & Lissoni, 2009; Furco, 2010); the degree of universities' embeddedness within a geographical context (Lebeau & Bennion, 2014); the socio-economic conditions of the region where universities are located (Williams & Cochrane, 2012); and other contextual factors as e.g. the impact of the COVID-19 pandemic (Cristofoletti & Pinheiro, 2023).

The project PLACES (*Portraits and Landscapes of Academic Community Engagement Scholarships*)[1], has been initiated to investigate the beneficial relationship between science and society stimulated by public engagement initiatives. The project is carried out by the University of Sassari (UniSS, as Principal Investigator) and the National Research Council of Italy (CNR). The ambition of the project is to address the gaps in our understanding of how proactive science-society collaborations effectively develop across multiple levels (individual, institutional and systemic), within different higher education systems. It aims at exploring the enabling and hindering factors that may influence and define different outcomes of public engagement initiatives. The project involves two parallel streams of investigation: *Portraits* and *Landscapes*. On the one hand, *Portraits* (led by UniSS unit) focuses specifically on the study of members of the academic community worthy of mention for their personal commitment to public engagement

[1] PLACES is funded under the *Research Projects of National Relevance* (Programma PRIN 2022 by the Italian Ministry of University and Research). It started in October 2023 and lasts for two years.

initiatives. On the other hand, *Landscapes* (led by CNR unit) wants to provide an in-depth analysis of the broader institutional framework within which engaged academics work[2].

This working paper presents the first results of a preliminary analysis developed within the *Landscapes* investigation line and focuses on some national key characteristics on more level (e.g. socio-economic and related to university environment) and their capacity to either enable or hinder universities' public engagement. The analysis covers three European countries: Italy, France and the United Kingdom. A country-level analysis of socio-economic and Research and Development (R&D) indicators, higher education data, and drivers and strategies for public engagement is indeed necessary to lay the foundation for preparing the project's next phases, involving deepening at the levels of single universities and researchers. Data have been collected using standardized *country fact sheets*, enabling systematic organization of both quantitative and qualitative information.

This contribution is structured as follows: the second section describes the objective and the methodology of PLACES project, the third section outlines the research question addressed in this working paper and discusses the indicators selected to describe national frameworks for universities' public engagement and their rationale for the contextual analysis; the fourth section presents the results of the analysis, and the fifth and last section outlines future research paths derived from the findings. Three annexes containing detailed data and information on the countries under examination are attached and constitute an integral part of this working paper.

2 GENERAL OVERVIEW AND OBJECTIVES OF THE 'PLACES' PROJECT

The main objective of PLACES is to contribute to a deeper understanding of universities' public engagement by exploring how active relationships between academia and society occur at individual, institutional and systemic levels in different higher education systems, with a view to fostering productive co-operation between the involved actors.

Given that the concepts of third mission and public engagement encompass a wide array of initiatives (Bonollo *et al.*, 2022), the project had to concentrate on a specific subset of activities. The specific focus is on *community engagement*, namely a distinct subset within the broader concept of public engagement. The project adopts the conceptualisation of community engagement set by Vargiu (2014), which proposes a set of indicators to distinguish between third mission, public engagement and community engagement, based on Polanyi's tripartition between primary regulatory principles (Polanyi, 1944) and Habermas' epistemology (1968). This theoretical definition aims specifically to contextualise the wide range of activities generally referred to as third mission initiatives according to some indicators, taking into account in the first place the main regulatory actor, which can be the *market* (third mission), the *state* (public engagement) and the *community* (community engagement). The *third mission* label is assigned to the whole set of initiatives that typically involve a collaborative relationship between universities and external stakeholders, while *public engagement* and *community engagement* represent conceptual subsets of activities in which the focus of action tends to be closer to broad and local communities, and with a progressive level of involvement of non-technical stakeholders. *Community engagement* can be defined as the collaboration between academics and non-academic actors at the local level, characterised by *reciprocity* as the main regulatory principle and by *symmetric relationships*, with the scope to promote mutual well-being, through bottom-up participation mechanisms. *Community engagement* activities focus more on an egalitarian and participatory approach, as opposed to third mission and public engagement, where the nature of the relationship with non-academic actors is more asymmetrical.

In the context of the study of *community engagement*, the project wants to investigate the *transformative change* in this symmetrical relationship between university and society, aiming to

[2] More detailed information on the 'PLACES' project can be found on the *Open Science Framework (OSF)* platform, at the following link: https://osf.io/ytv37. The OSF is a free, open web platform designed to support open research practices.

identify forms of change that results in *profound and lasting alteration* at individual, institutional and systemic level. Thus, *transformative community engagement* is defined as the capability of *community engagement* to empower social actors and to bring about sustainable change in society, while also, enabling the universities involved to change institutional framework and their strategic initiatives.

2.1 Two streams of investigation

As introduced in Section 1, PLACES is structured around two specific lines of investigation: on the one hand, to understand the interactions of highly community engaged scholars with the public and their motivations (*Portraits*); on the other hand, to explore how the institutional strategies and policies of different higher education systems shape the approach and implementation of *transformative community engagement* (*Landscapes*).

Portraits aims at exploring the micro level of the analysis, through a qualitative approach. This line of investigation seeks to develop a conceptual framework to further the logic behind the practices and behaviours of prominent highly-community engaged researchers, verifying the factors influencing the engagement level of proactive academics, as highlighted in the literature (Reymert & Thune, 2023), through the combined use of a series of tools and materials. Life histories, in-depth interviews and other personal documentation, such as diaries, archives and letters, will be used extensively to deepen the understanding of the relevant dynamics of the academic environment and its influence on community engagement behavioural patterns, examining individual trajectories. Life histories will be the main method used to shed light on the specific "social world" (Bertaux, 1997) represented by the community of highly engaged scholars.

From a macro-meso perspective, *Landscapes* aims to provide an overall understanding of how the governance framework and policy settings influence the implementation of community engagement. Universities often face various challenges in starting and maintaining collaborations with external partners (King & Rivett, 2015; Heney & Poleykett, 2021), leaving the responsibility of engaging with non-academic actors to individual researchers (Shattock, 2008; Cerrato *et al.*, 2008). Two main factors are considered to evaluate the transformative capacity of community engagement activities: the level of institutionalisation of community engagement within the higher education system (Benneworth & Sanderson, 2009), and the obstacles that may hinder community engagement activities with non-academic actors (Conway *et al*., 2009; Benneworth *et al.*, 2018). The macro perspective is primarily addressed through systematic data collection from institutional websites, official reports, and research infrastructures. This phase aims to gather the necessary information to better understand the three national higher education systems, focusing on socio-economic variables and institutional frameworks that support public engagement activities. At the meso level, the research stream will conduct qualitative interviews with prominent scholars and managers from the higher education sector to fill data gaps and better understand how university and contextual factors may encourage or hinder scholars' engagement with external actors.

Together, *Portraits* and *Landscapes* aim to provide a comprehensive overview of how researchers' practices, values and behaviours related to community engagement are shaped by external factors, such as the *habitus*, regulatory framework and higher education policy settings.

PLACES aims to contextualize the Italian case comparing it with two other European higher education systems, namely the UK, and France, to provide policy guidance and recommendations.

Italy, France and the UK represent different academic traditions. France and Italy follow the Napoleonic tradition, where universities are closely integrated with central government administration, operating under a centralised legislative framework (Shattock, 2014). Additionally, in both France and Italy the business sector has historically played a minimal role in university governance, with the central state predominating in France and the academic community in Italy (Clark, 1986). In contrast, the British higher education system follows the Anglo-Saxon model, where state influence in academic governance has historically been less pronounced if compared to the Napoleonic system (Marra & Moscati, 2018). In the UK system,

universities and research activities enjoy considerable autonomy, and scholars frequently collaborate with a variety of non-academic stakeholders (Henkel, 2005; Ferlie & Andresani, 2009). In fact, the different higher education models reflect two different approaches to teaching and research. The Napoleonic model emphasizes high-level vocational educational to effectively prepare students for the labour market. Conversely, the Anglo-Saxon model views teaching as a means of fostering students' personality development, with a strong emphasis on enhancing soft skills (Sam & Van Der Sijde, 2014).

It is noteworthy that Italy and the UK have adopted a similar framework for research evaluation. Both countries have implemented summative research evaluations that include community engagement as a key component for assessing impact (Torrance, 2020; Wang, 2022).

3 COLLECTING BACKGROUND DATA

This working paper represents a first milestone to address an important part of the macro level analysis foreseen in the PLACES project. The purpose is to establish a preparatory framework deepening the background conditions for the development of community engagement initiatives. The research question is formulated as follows: *What are the national-level contextual conditions, both in the higher education system and in society, that support universities' community engagement?*

To respond to this question, we gathered data on various indicators, spanning socio-economic characteristics, R&D system information, higher education system structure, and public attitudes toward science. Furthermore, we implemented a documentary analysis on institutional websites, policy documents, reports, to deepen public engagement strategies and drivers of public engagement at national level. The analysis covers three European countries: Italy, France and the United Kingdom.

Quantitative data and qualitative information were compiled into *country fact sheets*, intended as preparatory tools for preparing the analysis. The complete *country fact sheets* can be found attached to the working paper as annexes:

- *Annex 1* presents the country fact sheet on Italy,
- *Annex 2* presents the country fact sheet on France,
- *Annex 3* presents the country fact sheet on the United Kingdom.

Comparing the results of the analysis will indeed initiate the identification of contextual factors that either enable or hinder the implementation of community engagement activities.

3.1 Selection of the indicators and data sources

Table 1 illustrates the set of quantitative indicators chosen for the analysis, providing a rationale for their selection and indicating their respective sources.

Table 1. Metadata related to the indicators used for the quantitative analysis.

INDICATOR	RATIONALE	SOURCE
Population	To provide a contextual understanding of the dimension of the country under examination	OECD
Gross Domestic Product (GDP) per capita	Gross domestic product (GDP) measures the value of goods and services produced in a country over a period. It is the most generally used indicator of a country's wealth.	OECD
Human Development Index (HDI)	The Human Development Index (HDI) is a composite index to measure and rank countries' levels of human development based on three key factors: health, education, and standard of living.	United Nations Development Programme (UNDP)
Government Budget Allocation for R&D (GBARD) as a share of general government expenditure	Government budget allocations for R&D (GBARD) encompass all funds allocated to R&D by central, regional and local government in a country. This indicator outlines thus the budget provisions, not to actual expenditure.	EUROSTAT
Gross Domestic Expenditure on Research and Development (GERD) as a share of GDP	GERD (Gross Expenditure on Research and Development) as a percentage of GDP (Gross Domestic Product) is a measure used to indicate how much a country invests in R&D compared to its economic output. It provides insights into the commitment and investment a country makes towards innovation and technological advancement relative to its economic size.	OECD
Higher Education Expenditure on R&D (HERD) by region (NUTS2)	HERD (Higher Education Research and Development) refers to the expenditures dedicated to R&D activities carried out by higher education institutions. This includes both basic and applied research across various disciplines and fields of study. Governments use HERD data to evaluate the effectiveness of policies supporting in higher education, and to compare their country's research and innovation globally.	EUROSTAT
Share of researchers of Higher Education Sector on total active population	This is percentage of researchers in the higher education sector compared to the total workforce. This metric is used to assess the intensity of R&D efforts within higher education compared to other sectors of the economy.	EUROSTAT
Share of female researchers in Higher Education Sector	The share of female researchers in the higher education sector refers to the percentage of women within higher education institutions. This metric is used to assess gender representation and diversity in the field of R&D within academia.	EUROSTAT
Number of universities in the country	To provide an insight on the numerosity of universities in the country	ETER dataset from RISIS research infrastructure[3]
Geographic distribution	To provide an insight of the territorial distribution of universities.	ETER dataset from RISIS research infrastructure
Students enrolled in universities in the country on population at ISCED 5-7	The ratio of students enrolled in universities at ISCED level 5-7 to the country's population provides insight into the access to higher education within a country.	EUROSTAT
Percentage of graduates at ISCED 5-7 on population in the country.	The percentage of graduates at ISCED levels 5-7 in the country's population refers to the fraction of individuals who have finished advanced education degrees (such as bachelor's and master's programs) in relation to the overall population of the country. This metric helps assess the extent of higher education achievement within the society.	EUROSTAT

[3] RISIS is the European Research Infrastructure for Science and Innovation policy Studies (https://www.risis2.eu/), funded by the European Union under Horizon2020 Research and Innovation Programme Grant Agreement n°82409.

Percentage of graduates at ISCED 7 on population in the country	The percentage of country's population with ISCED 7 level graduates refers to the proportion of individuals who have completed tertiary education (masters' degree) relative to the total population of that country	EUROSTAT
Students enrolled at ISCED 8 in universities in the country on population	The ratio of students enrolled in universities at ISCED level 8 to the country's population provides insight into the access to programmes at ISCED level 8 (doctoral or equivalent level) in a country.	EUROSTAT
Percentage of Ph.Ds. holders on population in the country	The percentage of Ph.D. holders in the population of a country refers to the proportion of individuals who have attained a doctoral degree relative to the total population.	EUROSTAT
University Participation in European Projects	To provide the general level of commitment of universities to European projects	ETER dataset from RISIS research infrastructure
Third-party funding	It represents the share of financial support granted to universities provided by external sources other than the national institutions.	ETER dataset from RISIS research infrastructure
Autonomy level of the universities from the government	It summarizes the level of autonomy of the higher institutions of a specific country, by combining 4 dimensions of the autonomy: organizational autonomy, financial autonomy, staff autonomy and academic autonomy. These indicators are developed by the European University Association and reported in the Autonomy Scorecard.	European University Association, Autonomy Scorecard, 2023
Interest in scientific discoveries	To report general people's attitude towards scientific discoveries	Eurobarometer (via SUPERMoRRI[4] project)
Feeling of science efficacy	To report on percentage of people feeling somewhat well informed about scientific developments	Eurobarometer (via SUPERMoRRI project)
Scientific literacy	To report on people's level of knowledge of science textbooks	Eurobarometer (via SUPERMoRRI project)
Trust in scientists	To report on the percentage of people believing that scientists are the best qualified to explain the impact of scientific development	Eurobarometer (via SUPERMoRRI project)
Engagement and co-creation (meetings and debates)	To report on the percentage people engaged to meetings or debates related to Science and Technology	Eurobarometer (via SUPERMoRRI project)
Engagement and co-creation (petitions and demonstrations)	To report on the percentage people engaged to petitions or demonstrations related to Science and Technology	Eurobarometer (via SUPERMoRRI project)

[4] The SUPERMoRRI project (*Scientific Understanding and Provision of an Enhanced and Robust Monitoring system for Responsible Research and Innovation*), funded by the European Union's Horizon 2020 research and innovation program from 2018 to 2023, enhanced the earlier MoRRI project (conducted from 2014 to 2018). It aimed at supporting the transformation of the research and innovation system by ensuring alignment with social values, needs, and concerns, deepening a scientific understanding of the implementation of Responsible Research and Innovation across Europe.

3.2 Qualitative information on public engagement strategies, drivers and incentives

The final section of *country fact sheets* provides information on the drivers of third mission and public engagement of the higher education systems under examination. The information was gathered based on the following dimensions: *third mission*; *national public engagement strategies*; *presence and role of independent bodies on public engagement; funding opportunities*; *reporting at national level*; *evaluation of public engagement*. A variety of sources were used to collect the information, including institutional websites, available reports and scientific literature. The complete list of references is provided at the end of each country fact sheet attached to this paper.

4 ANALYSIS OF QUANTITATIVE DATA AND QUALITATIVE INFORMATION

This paragraph summarizes the main outcomes from the data collection process, following the structure of the *country fact sheets*. It aims to highlight the most relevant similarities and differences among the higher education systems under review. For detailed analysis on the specific indicators and dimensions, refer to *Annexes 1-2-3*.

4.1 General outlook

The first section, namely *General Outlook*, primarily addresses the country's socio-economic dimensions, including population, GDP, Human Development Index, and R&D indicators, including Government Budget Allocation for R&D as share of general government expenditure (GBARD), Gross Domestic Expenditure on R&D as share of GDP (GERD), Higher Education Expenditure on R&D by NUTS2, and share of researchers (both male and female) on total active population.

Italy, France and the UK are three major developed countries, each with a population exceeding 50 million inhabitants (59 million in Italy, 68 million in France, 67.3 million in the UK, as of 2022). These countries also share a comparable Gross Domestic Product (GDP) per capita. Furthermore, the Human Development Index indicates that Italy, France and the UK are countries with a relatively high overall development and quality of life. Notably, the UK ranks 18th among UN member countries, with France following at 28th and Italy at 30th.

Data reveal significant differences among the three countries in national commitment towards supporting R&D. The UK leads in R&D investments, with 1.36% of Government Budget Allocations for R&D (GBARD) in 2019, 2.91% of Gross Domestic Product Expenditure on R&D (GERD) as a share of GDP in 2021, as well as 0.66% of Higher Education Expenditure on R&D. France follows the UK, whereas Italy falls behind with a relatively modest national commitment to R&D. Data indicates that GERD in Italy is 1.51%, with the HERD component of GERD remains at 0.35% rate.

The varying levels of expenditure across countries directly reflect on the proportion of individuals employed in higher education sector. In 2022, Italy has indeed the lowest share at 0.20% of the population, followed by France at 0.32%, and the UK with the highest at 0.53%. In contrast, gender balance in higher education shows similar patterns across the countries, with percentage of approximately around 40% (41% in Italy, 43% in France, 46.4% in the UK) according to the EUROSTAT data.

4.2 Structure of the university system

The second section, *Structure of the University System*, provides essential information to effectively outline the key characteristics of the higher education systems being reviewed. This includes the number and geographical distribution of universities, the percentage of students

enrolled, the proportion of graduates and PhDs within the population, universities' involvement in European Projects, data on third-party funding, and information on the level of university autonomy.

The number of universities in the UK is significantly higher than in Italy and France, totalling 127, as of 2020. UK universities are evenly distributed across the country, except for the London NUTS3 regions, which accounts for the 17% of the total. As of 2020, France and Italy have 67 and 98 universities, respectively, with a significant concentration in highly industrialised regions.

In the three countries, the higher education systems have evolved along distinct paths shaped by their respective traditions (cfr. Section 2.1). In the UK, the higher education system has traditionally been marked by a high degree of autonomy from central government, a characteristic of the Anglo-Saxon tradition. The historical high level of autonomy in the UK higher sector is validated by the Autonomy Scorecard[5], developed by the European University Association. The Scorecard places the UK among the most autonomous higher education systems, particularly excelling in *Organizational Autonomy* and *Staff Autonomy*. The French and Italian higher education systems adhere to the Napoleonic tradition, characterized by a significant role played by the central state. Both Italy (under Law 168/1989) and France (under the Law on Liberties and Responsibilities of Universities in 2007) have undergone a process of granting autonomy to universities, thereby allowing for increased flexibility and independence in university governance. The on-going path towards university autonomy is reflected by the Autonomy Scorecard rankings, which place the French and Italian higher education systems at lower levels of autonomy than in the UK. It is noteworthy that France, in particular, exhibits the lowest levels of financial and staff autonomy. In contrast, Italy shows higher autonomy, particularly in terms of organization and finance.

Data on students at ISCED levels 5-7 indicate that the higher education systems in the UK and France are more attractive than the Italian system. Specifically, in France and the UK, the percentage of students enrolled is 4.25% (in 2022) and 3.93% (in 2019), respectively. In contrast, Italy falls behind with a rate of 3.63% (in 2022). In terms of attractiveness of PhD programs, the UK system stands out as the most appealing, with the highest enrolment rate of 0.17% as of 2019, compared to the higher education systems in France and Italy, which have enrolment rates of 0.10% and 0.06%, respectively, as of 2022.

In the UK, universities receive funding from several sources, including funding councils, student loans, and a significant amount of third-party funding. Unlike Italy and France, where third-party funding is lower, UK universities get about 9 billion euros from these sources each year. In comparison, France receives around 353 million euros and Italy about 1 billion euros in third-party funding.

4.3 People's attitude and feelings for science

The third section, *People's attitude and feelings for science*, presents key findings on public perceptions of scientific activities and discoveries, as well as their engagement with science. This includes public's interest in scientific discoveries, the percentage of citizens who feel well-informed about scientific developments, their knowledge of science textbooks and concepts, trust in scientists, engagement in debates or petitions related to science and technology matters.

We selected indicators from the Eurobarometer survey (published in December 2021), elaborated as secondary data from the Horizon 2020 SUPERMoRRI project[6].

When analysing the data from the three countries, distinct public attitudes towards science emerge, reflecting varying levels of trust and interest in scientific activities.

[5] The Autonomy Scorecard assesses the university autonomy across Europe by examining four main indicators: *Organizational Autonomy*, *Financial Autonomy*, *Staff Autonomy*, *Academic Autonomy*. The 2023 Autonomy Scorecard provides a comparative evaluation of 35 higher education systems.

[6] Ryan, T. K., Mejlgaard, N., Woolley, R., & Bloch, C. (2024). SUPER MoRRI - Secondary datasets for RRI indicators [Data set]. Zenodo. https://doi.org/10.5281/zenodo.11219491

First, in Italy there is a notably positive attitude towards science and scientific discoveries. Interest in scientific advancements and trust in scientists have been on the rise, as of 2020. Notably, interest in scientific discoveries surged to 85% in 2020, marking a significant increase over the past decade. This rise is likely due to the elevated public awareness of science's importance, spurred by the COVID-19 pandemic. The level of trust towards scientists, whether they work in private or in public sector, exceeds the European Union average. Since 2005, there has been a significant increase in people's occasional participation in public scientific events, such as meetings, debates, petitions, and demonstrations.
Also in the UK, the general public's attitude towards science is positive. Interest in scientific discoveries has settled at 86%, surpassing the EU average. Participation in scientific events also shows an overall positive trend as well: while engagement in petitions and demonstrations has remained stable, participation in meetings and debates has increased since 2005. However, trust in scientists, whether working publicly or privately, has seen a slight decline since 2010 and currently falls below the European Union average.

Finally, in France, public perception of science is gradually, albeit slowly, declining. Indicators of public interest in science and trust in scientists have been on a downward trend since 2010. However, although interest in scientific discoveries dropped from 87% in 2010 to 81% in 2020, participation in public science events has notably remained stable since 2005.

4.4 Public engagement strategies, drivers and evaluation

The fourth section, *Public Engagement Strategies, Drivers and Evaluation*, outlines the country's approach to third mission and public engagement. This includes national strategy for third mission and public engagement, role of independent bodies, available funding opportunities and evaluation on public engagement, and national reporting on public engagement efforts. The collected information has revealed significant differences in the promotion and institutionalisation of third mission and public engagement activities across the three higher education systems.

The UK was the first country to recognize the importance of third mission and, subsequently, public engagement, preceding the other countries under examination. The UK has established a deeply rooted system of incentives to support these universities activities. Since the 1990s, policymakers have systematically supported universities in conducting third mission activities. Notable examples include initiatives like the *Knowledge Exploitation Programme* in 1999 (Rosli & Rossi, 2016). British universities swiftly embraced proactive measures in this regard. By the early 2000s, many universities had integrated into their strategic principles the importance of conducting research that may produce an impact over society.

A strong commitment to public engagement within the UK higher education system was marked by the *Concordat for Engaging the Public with Research* in 2011. Signed by Research Councils UK, numerous academies, and private sector investors, the *Concordat* established principles to enhance the relationship between research and the public, emphasizing the importance of integrating public engagement practices.

Today, public engagement is well established as a principle within the UK higher education system, with many institutions offering various forms of support and guidance. Among these, a reference institution is the National Co-ordinating Centre for Public Engagement (NCCPE), established in 2008, funded by the UK Research and Innovation (UKRI), the devolved Higher Education funding bodies, Arts Council England and Wellcome Trust, to support universities and institutions to create meaningful connections with the wide public[7]. The UK higher education system deeply values public engagement activities, as evidence of the robust array of funding opportunities dedicated to such initiatives. Since the REF2014 cycle, the research evaluation framework has highlighted their significance by introducing "impact" as a criterion, thereby acknowledging public engagement activities as a valid form of research impact (Copley, 2018).

In the Italian higher education system, the integration of third mission and public engagement as core university missions occurred later compared to UK. Specifically, while the third mission's

[7] https://www.publicengagement.ac.uk/who-we-are

importance has long been recognised as a fundamental mission for universities, by integrating it into the universities' evaluative framework, in Italy the consolidation of the concept of public engagement, and the acknowledgment of its relevance, is still ongoing.

A significant step towards solidifying the concept of public engagement occurred during the first research evaluation exercise framework (VQR 2011-2014). At that time, public engagement was considered a subset of third mission activities, though it lacked a clear and distinct definition. It was subsequently categorized under third mission activities.

Since 2018, following efforts led by ANVUR (the National Agency for the Evaluation of Universities and Research Institutes), in collaboration with the Conference of Rectors of Italian Universities, a comprehensive definition of public engagement has been established. Therefore, the VQR 2015-2019 evaluation form for universities and departments (*Scheda Unica Annuale Terza Missione e Impatto Sociale*, SUA-TM/IS) included a dedicated section specifically to assess public engagement initiatives. The enhanced recognition of the third mission and public engagement is evident in their inclusion as factors in determining a small percentage of government funding allocations to universities.

Despite the regulatory incentives linked to universities' evaluation exercises, the Italian higher education system lacks a robust framework to promote public engagement activities. Specifically, there is a shortage of dedicated funding opportunities for third mission and public engagement. However, it is noteworthy that two recently published calls for proposals[8] specifically target third mission and public engagement. It is also important to note that independent bodies such as ANVUR and APEnet (Universities and Research Institutes for Public Engagement), which could potentially promote public engagement, lack the financial capability to support universities.

France has made comparatively little progress in formalizing the concept of public engagement and integrating it as a mission and priority for universities. While the third mission has been acknowledged to involve society in the knowledge production process and enable positive societal impacts (Law no. 123, *Code de l'Éducation*), there remains a lack of clear definition and institutional commitment to public engagement.

Based on the conducted documentary analysis, the absence of a clear and unambiguous definition to delineate public engagement indicates a potential deficiency in how institutions operationalize the concept (Bonollo *et al.*, 2022). Various terms are used interchangeably (see Annex) to identify the activities universities undertake to engage the broader public.

The lack of a strategy to support third mission and public engagement activities is also evident from the fact that the universities' evaluation frameworks, overseen by the *Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur*, do not include indicators specifically targeting third mission or public engagement activities. It is noteworthy that the academic community is instead very proactive in conducting public engagement activities of various kinds within universities (collaborations with museums, open laboratories, etc.).

However, what emerged from the documentary analysis is that France is considerably committed to enhancing open science, through two main programmes: *First* and *Second Plan National Science Ouverte*, and *Science avec et pour la société*.

5 CONCLUSIONS AND FUTURE STEPS

Data collection has provided a comprehensive overview of the contextual conditions, both in the higher education system and society, that may support universities' community engagement in Italy, France and the UK. The data collection has outlined significant variations in approaches to public engagement across the countries, suggesting that historical and cultural legacies may play a crucial role in shaping university systems, including even their approach to public engagement.

[8] *Ecosystem for Innovation* and *Research initiatives for Technologies and Innovative Approaches in the Healthcare and Social Care Fields.* These two calls are within the framework of the Recovery and Resilience Plan. See also the Annexes.

Specifically, in Italy and France, stemming from the Napoleonic tradition, the involvement of society in the knowledge production process through the implementation of third mission and public engagement activities remains mostly theoretical rather than practically applied. Specifically, Italy has taken significant steps forward to integrate public engagement in universities' routine activities, by introducing public engagement in the universities' evaluative framework. However, the approach adopted by the Italian state tends to be more prescriptive than practical. A comprehensive system of incentives is still lacking, indicating an absence of a culture of public engagement. Both financial and organizational incentives, such as calls for proposals and consultancy opportunities, could significantly enhance universities' performance in public engagement activities. France largely lags behind in this process, as a formalization of the concept at the institutional level has not been proposed yet. French institutions primarily emphasize open science and knowledge transfer to enterprises, rather than enabling an ongoing dialogue with wide public. However, French universities appear more open to the opportunity to interact with society, with many initiatives driven by individual researchers' efforts.

Within the highly competitive higher education system of the UK, the emphasis placed on the societal and economic impact of research has likely bolstered the integration of third mission and public engagement activities as fundamental practices within universities. This has created favourable conditions for fostering ongoing dialogue with society at large. A robust support system for public engagement activities plays a crucial role in the consolidation of a pervasive public engagement culture. Organizations such as the NCCPE and UKRI offer universities staff consultancy service for public engagement, facilitate collaborative networks, and provide numerous funding opportunities.

The data collection process highlighted other relevant differences among the three countries under examination. France and the UK invest proportionately more in higher education than Italy, contributing to the development of highly competitive higher education systems. In contrast, the Italian higher education system lags behind due to significantly lower investment levels. This limited investment has resulted in a system that is less competitive and attractive to students compared to the French and UK systems. Interestingly enough, data analysis on public attitude on science however revealed that the Italian public holds a more positive attitude towards scientific discoveries and activities, in comparison with France and the UK.

The findings discussed represent the initial outcomes of the PLACES project and pave the way for subsequent research stages. Building upon data from the *country fact sheets* (Annexes 1-2-3), we will conduct further comparative analyses to explore in depth the characteristics that may influence the emergence of transformative public engagement practices. In parallel, we will use the data related to dimensions such as the country's socio-economic background, university system, and strategies for public engagement in France, Italy, and the UK as background knowledge for implementing case studies at the individual university level, based on qualitative interviews, allowing to perform meso-level analyses related to community engagement within universities.

6 ACKNOWLEDGMENTS

This work was supported by PLACES - *Portraits and Landscapes of Academic Community Engagement Scholarships*, a MUR-PRIN 2022 project funded by the European Union - Next Generation EU, Mission 4 Component 1 CUP B53D23019420006.

7 REFERENCES

Atta-Owusu, K., & Fitjar, R.D. (2022). What motivates academics for external engagement? Exploring the effects of motivational drivers and organizational fairness. *Science and public policy*, *49*(2), pp. 201-218.

Anzivino, M., Ceravolo, F.A., & Rostan, M. (2021). The two dimensions of Italian academics' public engagement. *Higher Education*, 82, pp. 107-125.

Benneworth, P., & Sanderson, A. (2009). The regional engagement of universities: Building capacity in a sparse innovation environment. *Higher Education Management and Policy*, *21*(1), pp. 1-18.

Benneworth, P.S., Culum, B., Farnell, T., Kaiser, F., Seeber, M., Scukanec, N., & Westerheijden, D.F. (2018). *Mapping and critical synthesis of current state-of-the-art on community engagement in higher education*. Report. https://research.utwente.nl/en/publications/mapping

Bertaux, D. (1997). *Les récits de vie*. Nathan.

Blue, G., & Davidson, D. (2020). Advancing a transformative social contract for the environmental sciences: From public engagement to justice. *Environmental Research Letters*, *15*(11), 115008.

Bonollo, E., Lazzini, S., & Occhipinti, Z. (2022). Third Mission and Intellectual Capital External Dimension: The Implications in the European University Planning Process. In Caperchione, E., & Bianchi, C. (eds.). *Governance and Performance Management in Public Universities* (pp. 149-177). SIDREA Series in Accounting and Business Administration, Springer.
https://doi.org/10.1007/978-3-030-85698-4_8

Breznitz, S.M., & Feldman, M.P. (2012). The engaged university. *The Journal of Technology Transfer*, 37, pp. 139-157.

Bridger, J.C., & Alter, T.R. (2006). The engaged university, community development, and public scholarship. *Journal of Higher Education Outreach and Engagement*, *11*(1), pp. 163-178.

Cerrato, S., Daelli, V., Pertot, H., & Puccioni, O. (2018). The public-engaged scientists: Motivations, enablers and barriers. *Research for All*, *2*(2).

Clark, B.R. (1986). T*he higher education system: Academic organization in cross-national perspective*. Univ of California Press.

Compagnucci, L., & Spigarelli, F. (2020). The Third Mission of the university: A systematic literature review on potentials and constraints. *Technological Forecasting and Social Change*, 161, 120284. https://doi.org/10.1016/j.techfore.2020.120284

Copley, J. (2018). Providing evidence of impact from public engagement with research: A case study from the UK's Research Excellence Framework (REF). *Research for All*, *2*(2).

Cristofoletti, E. C., & Pinheiro, R. (2023). Taking stock: The impacts of the COVID-19 pandemic on University – Community engagement. *Industry and Higher Education*, *37*(2), pp. 251-264.

Ferlie, E., & Andresani, G. (2009). United Kingdom from bureau professionalism to new public management?. In Paradeise, C., Reale, E., Bleiklie, I., & Ferlie, E. University governance: Western European comparative perspectives (pp. 177-195). Springer.

Franzoni, C., & Lissoni, F. (2009). Academic entrepreneurs: critical issues and lessons for Europe. In Varga, A. *Universities, knowledge transfer and regional development: Geography, entrepreneurship and policy* (pp. 163-190). Edward Elgar.

Furco, A. (2010). The engaged campus: Toward a comprehensive approach to public engagement. *British Journal of Educational Studies*, *58*(4), pp. 375-390.

Gallacher, J., & Raffe, D. (2012). Higher education policy in post-devolution UK: more convergence than divergence?. *Journal of education policy*, *27*(4), pp. 467-490.

Godonoga, A., & Sporn, B. (2023). The conceptualisation of socially responsible universities in higher education research: a systematic literature review. *Studies in Higher Education*, *48*(3), pp. 445-459.

Grand, A., Davies, G., Holliman, R., & Adams, A. (2015). Mapping public engagement with research in a UK university. *PloS one*, *10*(4), e0121874.

Habermas, J. (1968). Erkenntnis und Interesse, Frankfurt a. Main: Suhrkamp. Reflections on Economic and Social Issues, XI, 2, pp. 37-66.

Heney, V., & Poleykett, B. (2022). The impossibility of engaged research: complicity and accountability between researchers,'publics' and institutions. *Sociology of Health & Illness*, 44, pp. 179-194.

Henkel, M. (2005). Academic identity and autonomy in a changing policy environment. *Higher education*, 49, pp. 155-176.

Higgins, K., Kelly, G., Munck, R., Kelly, U., & Grounds, A. (2024). Exploring an innovative method for objectively assessing the social value of university-community engagement and research. *Methodological Innovations*, *17*(1), pp. 19-30.

Hollister, R. M., Pollock, J. P., Gearan, M., Stroud, S., Reid, J., & Babcock, E. (2012). The Talloires Network: A global coalition of engaged universities. *Journal of Higher Education Outreach and Engagement*, *16*(4), pp. 81-102.

Jongbloed, B., Enders, J., & Salerno, C. (2008). Higher education and its communities: Interconnections, interdependencies and a research agenda. *Higher education*, 56, pp. 303-324.

Khazragui, H., & Hudson, J. (2015). Measuring the benefits of university research: impact and the REF in the UK. *Research evaluation*, *24*(1), pp. 51-62.

King, L., & Rivett, G. (2015). Engaging people in making history: impact, public engagement and the world beyond the campus. *History Workshop Journal*, *80*(1), pp. 218-233.

Laredo, P. (2007). Revisiting the third mission of universities: Toward a renewed categorization of university activities?. *Higher education policy*, 20, pp. 441-456.

Lebeau, Y., & Bennion, A. (2014). Forms of embeddedness and discourses of engagement: a case study of universities in their local environment. *Studies in Higher Education*, *39*(2), pp. 278-293.

Marino, V., Presti, L. L., & Pellicano, M. (2019). Rediscovering public engagement in higher education: A bridge between university community and publics. *African Journal of Business Management*, *13*(2), pp. 71-81.

Marra, A., & Moscati, R. (2018). Bureaucracies and Ministries, Higher Education. In Teixeira, P.N., Shin, J.C. *et al. The International Encyclopedia of Higher Education Systems and Institutions* (pp. 160-166). Springer. https://link.springer.com/referenceworkentry

Martin, B.R. (2011). The Research Excellence Framework and the 'impact agenda': are we creating a Frankenstein monster?. *Research evaluation*, *20*(3), pp. 247-254.

Mazzucato, M. (2018). Mission-oriented research & innovation in the European Union. European Commission, 36.

NCCPE (2024) *Introducing Public Engagement*. https://www.publicengagement.ac.uk/introducing-public-engagement

Pinheiro, R., Benneworth, P., & Jones, G. A. (2015). Beyond the Obvious: Tensions and Volitions Surrounding the Contributions of Universities to Regional Development and Innovation1. In Carmo Farinha, L.M., Ferreira, J.J.M., Lawton Smith, H., & Bagchi-Sen, S. *Handbook of research on global competitive advantage through innovation and entrepreneurship* (pp. 150-172). IGI Global.

Pinheiro, R., Langa, P. V., & Pausits, A. (2015). The institutionalization of universities' third mission: Introduction to the special issue. *European Journal of Higher Education*, *5*(3), pp. 227-232.

Polanyi, K. (1944). *The Great Transformation*. Beacon Press.

Reale, E. (2022). Factors enabling social impact: The importance of institutional entrepreneurship in social science research. *Science and Public Policy*, *49*(4), pp. 632-642.

Rey Reymert, I., & Thune, T. (2023). Task complementarity in academic work: a study of the relationship between research, education and third mission tasks among university professors. *The Journal of Technology Transfer*, *48*(1), pp. 331-360.

Rosli, A., & Rossi, F. (2016). Third-mission policy goals and incentives from performance-based funding: Are they aligned?. *Research Evaluation*, *25*(4), pp. 427-441.

Sam, C., & Van Der Sijde, P. (2014). Understanding the concept of the entrepreneurial university from the perspective of higher education models. *Higher Education*, 68, pp. 891-908.

Shattock, M. (2008). *Entrepreneurialism in Universities and the Knowledge Economy: Diversification and Organizational Change in European Higher Education: Diversification and Organisational Change in European Higher Education*. McGraw-Hill Education.

Shattock, M., ed. (2014). International trends in university governance. Routledge, London.

Torrance, H. (2020). The research excellence framework in the United Kingdom: processes, consequences, and incentives to engage. *Qualitative Inquiry*, *26*(7), pp. 771-779.

Vargiu, A. (2014). Indicators for the evaluation of public engagement of higher education institutions. *Journal of the Knowledge Economy*, 5, pp. 562-584.

Wang, X. (2022, May). Italian Research Assessment VQR: Framework, Achievements and Controversies. In *ICDEL 2022: Proceedings of the 7th International Conference on Distance Education and Learning* (pp. 261-267). Association for Computing Machinery.

Williams, R., & Cochrane, A. (2012). Universities, regions and social disadvantage. In Benneworth, P.(ed.). *University engagement with socially excluded communities* (pp. 67-81). Springer.

Zuti, B., & Lukovics, M. (2017). How to measure the local economic impact of the universities' third mission activities?. *academia. edu*, 9. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3022691

ANNEX 1

COUNTRY FACT SHEET

Italy

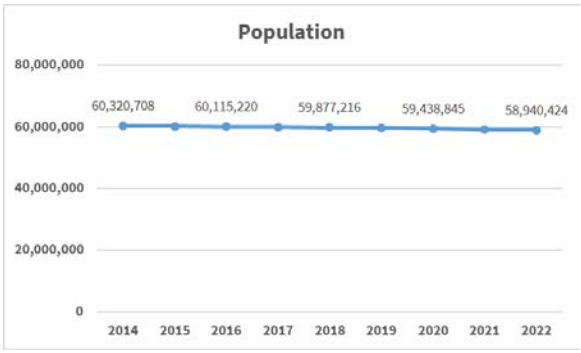


Figure 1. Population trend in Italy between 2014 and 2022. Unit: number of inhabitants. Source: OECD.Stat.

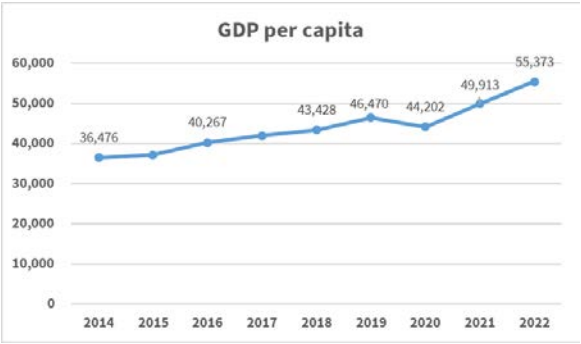


Figure 2. Gross domestic product (expenditure approach) per capita in Italy between 2014 and 2022. Unit: current prices 2015, current PPP dollars. Source: OECD.Stat.

GENERAL OUTLOOK

Population

Source: OECD

Italy had a population of almost 59 million in 2022. The country has been facing a population decline over the years, characterized by a gradual trend, that is clearly visible in Figure 1, losing 1.4 million inhabitants since 2014.

Gross Domestic Product (GDP) per capita

Source: OECD

In 2022, GDP per capita is $55,373, lower than the average of European OECD countries ($56,296). As shown in Fig. 2, Italy experienced a gradual increase in GDP per capita over the years, with a decrease in 2020 compared to the previous year due to the COVID-19 pandemic. The following two years saw a particularly robust recovery.

Human Development Index (HDI)

Source: United Nations Development Programme (UNDP)

Italy has a Human Development Index score of 0.895, which places it 30th in the 2021 ranking of UN member countries (source: United Nations). The index, which ranges from 0 to 1, takes into account Gross national income per capita, Life expectancy at birth, Expected years of schooling and Mean years of schooling.

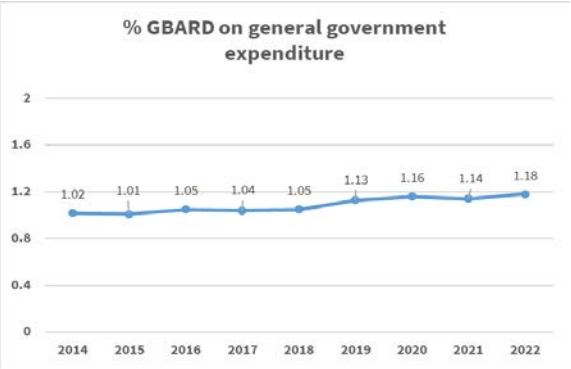


Figure 3. Government Budget Allocation for R&D (GBARD) as a share of general government expenditure between 2014 and 2022 in Italy. Unit: percentage. Source: EUROSTAT.

Government Budget Allocation for R&D (GBARD) as a share of general government expenditure

Source: EUROSTAT

Data on the Government Budget Allocation for Research and Development (GBARD) as a percentage of total government spending reflect the government's financial commitment to Research and Development. Over the years, Italy has maintained a relatively stable trend of just over 1%, with modest changes over time and a more pronounced commitment starting in 2019, leading to 1.18% in 2022 (Fig. 3).

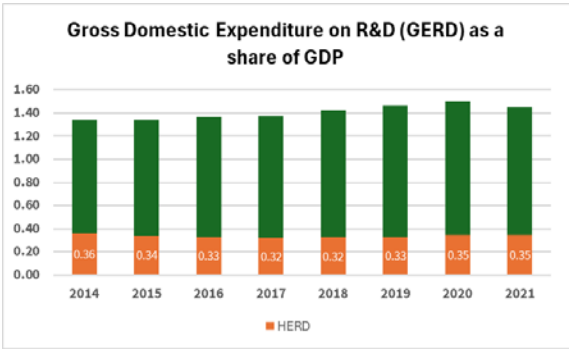


Figure 4. Gross Domestic Expenditure on Research and Development (GERD) – and the component Higher Education Expenditure on R&D (HERD)- as a share of GDP between 2014 and 2021 in Italy. Unit: percentage. Source: OECD.Stat.

Gross Domestic Expenditure on Research and Development (GERD) as a share of GDP

Source: OECD

During the period 2014-2020, GERD in Italy showed a constant increase from 1.34% to 1.51% of GDP (Fig. 4). In 2021, however, it returned to its 2020 level of 1.45%. The HERD component, which represents the share of Research and Development spending carried out by Higher Education Institutions, remains at a rate of 0.35% over the years, with a slight increase in the 2020-2021 biennium after a decrease in 2017.

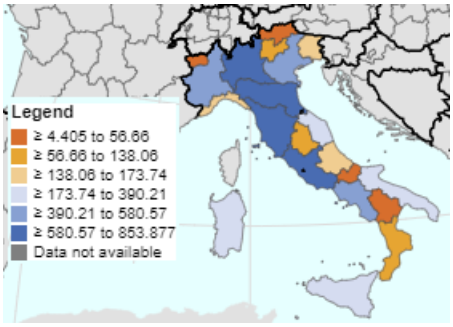


Figure 5. Concentration of Higher Education Expenditure on R&D (HERD) in 2021 in Italian regions (NUTS2). Unit: Million Euro. Source: EUROSTAT.

Higher Education Expenditure on R&D (HERD) by region (NUTS2)

Source: EUROSTAT

According to 2021 data (Fig. 5), HERD in Italy is mainly concentrated in the region of the two biggest cities: Milan (Lombardy) and Rome (Lazio). Emilia-Romagna, Tuscany, Veneto and Campania also show higher expenditures than the other regions of the country. Spending is lowest in the central and southern interior Apennine regions.

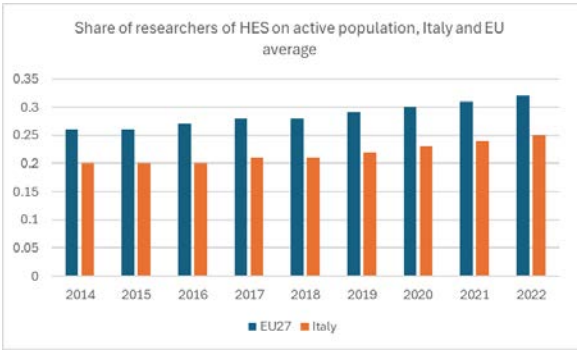


Figure 6. Share of researchers of Higher Education Sector on active population (numerator in full-time equivalent, FTE), Italy. Unit: percentage.

Share of researchers of Higher Education Sector on total active population

Source: EUROSTAT

According to EUROSTAT data, in Italy, the share of university researchers in the working population was 0.25% in 2022, with a slightly positive trend from 2019, after a stability around 0.20% from 2014 to 2018. According to the data in Figure 6, the Italian share of researchers is remarkably lower than the EU average.

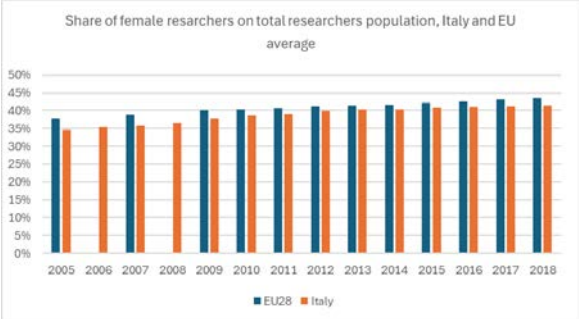


Figure 7. Share of female researchers on total researchers' population, Italy. Unit: percentage based on head count (HC).

Share of female researchers in Higher Education Sector

Source: EUROSTAT via SUPERMoRRI Project

Figure 7 shows the share of female researchers in the total population of researchers. According to the data in Figure 7, the share of female researchers is increasing slightly but constantly from the beginning of the time series, stabilizing at 41% from 2016. The Italian share of female researchers is slightly below the EU average. The data go up to 2018.

Year	Number
2011	96
2012	96
2013	96
2014	96
2015	96
2016	97
2017	97
2018	98
2019	98
2020	98

Table 1. Number of universities per year (source: ETER).

Year	Enrolled at ISCED 5-7	%
2013	1,872,693	3.14
2014	1,854,360	3.05
2015	1,826,477	3.00
2016	1,815,950	2.99
2017	1,837,051	3.03
2018	1,895,990	3.13
2019	1,937,761	3.24
2020	2,030,768	3.40
2021	2,096,778	3.54
2022	2,145,733	3.63

Table 2. Students at ISCED 5 to 7 and percentage on national population (source: EUROSTAT).

Year	Graduated at ISCED 5-7	%	Graduated at ISCED 7	%
2013	351,220	0.59	148,534	0.25
2014	363,675	0.60	154,731	0.25
2015	359,813	0.59	154,277	0.25
2016	363,972	0.60	157,540	0.26
2017	379,206	0.63	161,849	0.27
2018	391,854	0.65	164,891	0.27
2019	408,640	0.68	171,998	0.29
2020	446,020	0.75	175,797	0.29
2021	450,791	0.76	189,598	0.32
2022	459,619	0.78	199,243	0.34

Table 3. Graduated at ISCED 5 to 7 and ISCED 7, and relative fractions on population (source: EUROSTAT).

STRUCTURE OF THE UNIVERSITY SYSTEM

Introduction

Universities are funded by the Ministerial government and student fees. Funding is generally considered to be scarce. Law 168/1989 gave to universities the status of public bodies with juridic personality. University departments are evaluated every five years through a specific mechanism (Evaluation of Research Quality - VQR - exercises).

Number of universities in the country

Source: ETER

The number of universities in the country remains stable over time and is higher than in France (Table 1). The average population per university is therefore around 60 thousand inhabitants. It should be noted that out of the total number of universities, 11 universities are online universities.

Geographic distribution

Universities in Italy are located in 55 NUTS3 region out of a total of 107. The data show concentration of universities in some regions: Milan (8 universities), Naples (5 universities) and Rome (16 universities): it should be noted that 5 of these ones are online universities.

Students enrolled in universities in the country on population

Source: EUROSTAT

The number of students enrolled at all levels of higher education grows steadily over time, from more than one million eight thousand in 2013 to over two million one thousand in 2022 (Table 2). Consequently, also the fraction of students in the population grows from 3.14% in 2013 to 3.65% in 2022.

Graduates on population in the country

Source: EUROSTAT

The fraction of graduates grows over time; nevertheless, the growth is higher in the fraction of total graduates is from 0.59% in 2013 to 0.78% in 2022, while in the fraction of ISCED 7 graduates is from 0.25% to 0.34% (Table 3).

Year	Enrolled at ISCED 8	%	Graduated at ISCED 8	%
2013	34,928	0.06	10,687	0.02
2014	33,512	0.06	10,678	0.02
2015	32,775	0.05	10,485	0.02
2016	32,947	0.05	9,803	0.02
2017	27,729	0.05	9,399	0.02
2018	28,338	0.05	7,974	0.01
2019	29,480	0.05	7,991	0.01
2020	31,533	0.05	7,691	0.01
2021	33,315	0.06	8,122	0.01
2022	37,909	0.06	8,669	0.01

Table 4. Number of ISCED-8 students and graduates per year, and relative fractions on national population (source: EUROSTAT).

Year	Number of EU-FP projects	Total FP projects coordinator
2011	2,077	431
2012	2,303	501
2013	2,499	562
2014	2,303	561
2015	2,328	581
2016	2,308	598
2017	2,321	593
2018	2,468	634
2019	2,649	694
2020	3,001	773

Table 5. Number of participated and coordinated EU projects (source: ETER)

Year	Total third-party funding
2011	1,776,333,930.00
2012	1,704,053,307.00
2013	1,763,458,085.00
2014	1,607,719,868.00
2015	1,398,440,799.00
2016	-
2017	-
2018	-
2019	-
2020	-

Table 6. Total third-party funding per year (source: ETER). Currency: Euro.

	OA	FA	SA	AA
IT	65%	70%	49%	56%

Table 7. Autonomy Scorecard results: Italy.

Enrolled PhD students and PhD holders on population in the country
Source: EUROSTAT
The number and fraction of PhD enrolled at ISCED-8 (PhD) are stable over time; the fraction on enrolled on population is lower than in the UK, remaining around 0.05/0.06 %. The number of graduated decreases over time, as the number of graduated in 2022 is around 19% lower than in 2011 (Table 4).

University Participation in European Projects
Source: ETER
The number of participations of universities in EU projects increases significantly over the period from 2011 to 2020, with a growth of almost 50% compared to the initial value. The number of coordinated projects grows even more, as the final value is 80% higher than the initial one (Table 5).

Third-party funding
Source: ETER
The time series for this set of data is broken, as data is only available until 2015. Nevertheless, it is easy to see that third-party funding declines significantly in the first part of the decade; third-party funding was 20% lower in 2015 than in 2011 (Table 6).

Autonomy level of the universities from the government
Source: European University Association
The European University Association has launched the EUA Autonomy Scorecard in 2023, to provide a methodology to cluster national higher education systems according to their level of autonomy. The national university systems examined are those of EU27, UK, Norway, Iceland, Turkey, Georgia and Serbia. The Scorecard is composed of more than 20 core indicators, grouped in the 4 key dimensions of university institutional autonomy:

- *Organizational autonomy* (OA);
- *Financial autonomy* (FA);
- *Staff autonomy* (SA);
- *Academic autonomy* (AA).

The Autonomy Scorecard provides the weighted results for each indicator, grouped by key dimensions, as listed above. The national scores are split into four clusters, in order to facilitate an overall comparison:

- A high group scoring between 100% and 81%;
- A medium high group scoring between 80% and 61%;
- A medium low group scoring between 60% and 41%;
- A low group scoring between 40% and 0%.

According to Table 7, the Italian higher education system has an overall medium level of autonomy. Indeed, the Autonomy Scorecard shows that the organizational and financial autonomy of Italian universities is medium, while the staff and academic autonomy is medium low. More specifically, staff autonomy is one of the lowest levels of autonomy in the sample of countries studied by the European University Association.

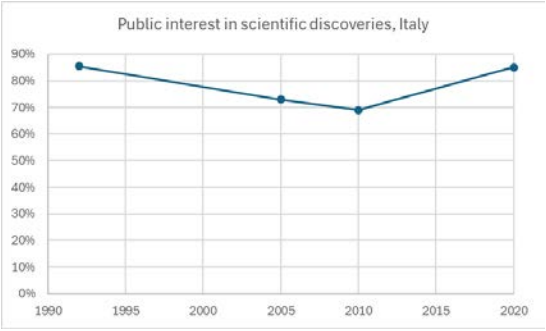


Figure 8. Percentage of public interest in scientific discoveries in Italy. Unit: percentage.

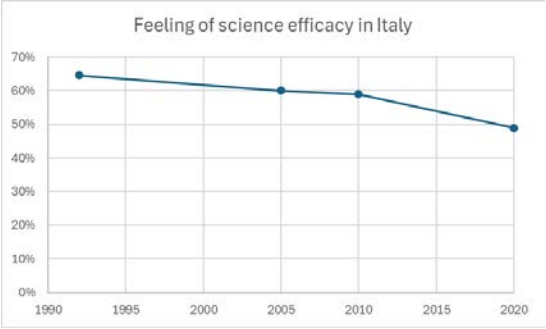


Figure 9. Feeling of science efficacy in Italy. Unit: percentage.

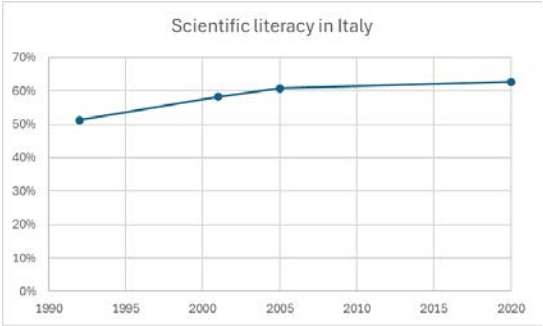


Figure 10. Scientific literacy in Italy. Unit: percentage.

PEOPLE'S ATTITUDE AND FEELINGS FOR SCIENCE

In the context of the Horizon 2020 SUPER MoRRI project, which aimed at supporting the process of transformation of R&I by encouraging a closer collaboration with societal actors and a more socially engaged science, a list of secondary data was provided, reporting the most relevant higher education system variables and indicators by country. 6 of the mentioned indicators, those concerning the wide public's interest and engagement in science (based on Eurobarometer data published in December 2021), are reported below.

Interest in scientific discoveries

Source: Eurobarometer via SUPERMoRRI Project

Figure 8 is extracted from the *Interest in scientific discoveries* database and reports the Italian public's interest in scientific discoveries. According to the data in Figure 8, after a period of sharp decline (from the early 90s to 2010), the interest of the Italian public has increased from 2010 to 2020. In 2020, public interest in scientific discoveries is 85%.

Feeling of science efficacy

Source: Eurobarometer via SUPERMoRRI Project

The *Feeling of scientific efficacy indicator* shows the percentage of citizens who feel somewhat well informed about scientific developments. According to the data in Figure 9, the share of people claiming to be well or rather informed about scientific developments has been declined steadily over the last three decades. In 2020, the percentage of Italian people feeling very or moderately well informed about scientific developments is 49%.

Scientific literacy

Source: Eurobarometer via SUPERMoRRI Project

Scientific literacy is defined as citizens' knowledge level of science textbooks, calculated by giving respondents a science quiz. Figure 10 shows that the scientific literacy of Italian citizens is increasing slightly but steadily. In 2020, Italian citizens' scientific literacy is 63%.

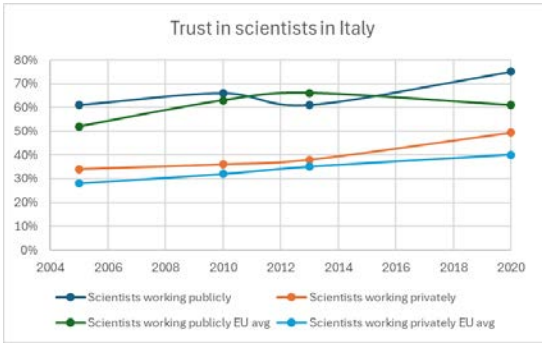


Figure 11. Trust in scientists in Italy.
Unit: percentage.

Trust in scientists
Source: Eurobarometer via SUPERMoRRI Project
The *Trust in scientists* indicator defines the percentage of citizens that believe that scientists are among the best qualified to explain the impact of scientific and technological developments. The Eurobarometer data also distinguish between researchers working in the public or in the private sector. According to the data in Figure 11, trust in scientists in Italy is relatively higher than the EU average trust in scientists, for scientists both from public and private sectors. In 2020, Italian citizens' trust in scientists working publicly is at 75%, while trust in scientists working privately is at 49%.

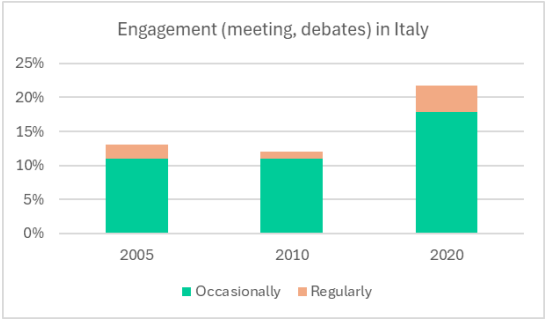


Figure 12. Citizens' engagement in meeting and debates, Italy.
Unit: percentage.

Engagement and co-creation (meetings and debates)
Source: Eurobarometer via SUPERMoRRI Project
The *Engagement and co-creation (meeting and debates)* indicator depicts the share of citizens claiming to attend (regularly or occasionally) public meetings or debates about science and technology. According to the data in Figure 12, after a period of stability, Italian citizens are increasingly participating in meetings and debates (in particular, on an occasional basis, green stripe). In 2020, citizens claiming to regularly attend meetings and debates are 4%, and citizens claiming to occasionally attend meetings and debates are 18%.

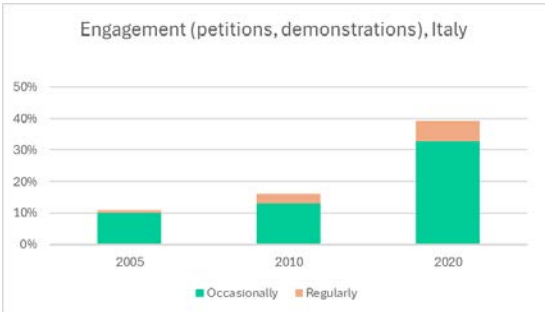


Figure 13. Citizens' engagement in petitions and demonstrations, Italy. Unit: percentage.

Engagement and co-creation (petitions and demonstrations)
Source: Eurobarometer via SUPERMoRRI Project
The *Engagement and co-creation (petitions, demonstrations)* indicator shows the share of citizens claiming to attend (regularly or occasionally) petitions and demonstrations focused on science and technology-related topics. According to the data in Figure 13, Italian citizens' engagement has increased over time, with a stronger growth rate in the last decade. In 2020, Italian citizens claiming to regularly attend petitions and demonstrations are 7%, and citizens claiming to occasionally attend petitions and demonstrations are 33%.

PUBLIC ENGAGEMENT STRATEGIES, DRIVERS AND EVALUATION

- **Third mission**
  Sources: ANVUR "Third Mission / Impact" webpage on the ANVUR website; European Commission (2023)

In the Italian context, the Third Mission at university and research institutes is evaluated by ANVUR (Italian National Agency for the Evaluation of Universities and Research Institutes), the independent body in charge of overseeing the national quality evaluation system for universities and research organizations, as mandated by the Presidential Decree no. 76/2010. Since the first VQR cycle (2004-2010), a set of indicators were identified to evaluate not only the openness of universities towards the socio-economic context under examination, but also third-party research, patent activity, incubators, spin-off companies, consortia, and management of cultural goods. With the introduction of the national system of quality assurance for universities (*Self-Assessment, Periodic Evaluation and Accreditation System AVA*) in 2013, Third Mission was officially included among the institutional activities of academic institutions, along with teaching and research. Since the third VQR cycle (2014-2019), the outcomes of Third Mission evaluation are considered for the allocation of a quota of the Fund for the regular financing of the universities, that is the FFO (namely, one of the funds through which the State support universities, besides Fund for university building and great scientific equipment, FEU, and Fund for the development planning of university system, FPS).

- **National Public Engagement strategy (if any)**
  Sources: ANVUR website; ANVUR (2016); Romagnosi (2018)

The concept of Public Engagement (PE) has increasingly gained importance for universities and research institutes. Although a comprehensive national strategy is still lacking, the PE concept in Italy has undergone a progressive process of definition and operationalization. The PE was defined by ANVUR as a set of non-profit activities, with an educational, cultural and developmental value for society. PE-related activities are evaluated as a subset of TM, in the context of VQR cycles. Following a revision process carried out by ANVUR Board and the ANVUR Group of Experts on Third Mission (*Gruppo di Lavoro TeMI*), supported by the Conference of Rectors of Italian Universities (*CRUI*), the concept of PE was revised in 2018 as follows: the set of institutionally organised non-profit activities, conducted to involve non-specialists (definition borrowed from the UK National Co-ordinating Centre for Public Engagement, NCCPE). With this redefinition and the revision of the *Scheda Unica Annuale-Terza Missione* (SUA-TM), the outcomes of the evaluation of PE-related activities are considered for determining the allocation of a FFO quota. In the revised SUA-TM, PE is considered as both one of the TM strategic objectives (in the context of *B. Public goods production*), and as one of the activities to be conducted to foster and achieve other TM-related strategic objectives (such as, *I.4.e- Associations for TM, I.5.c- Music activities, I.6- Activities for public health, I.7- Ongoing education and training, and open teaching*). Universities claim their commitment to PE in their *Strategic Plans*, as envisaged by Law no. 43/2005.

- **Presence and role of independent bodies on Public Engagement**
  Sources: ANVUR websites; APEnet website; Romagnosi (2018)

ANVUR is the independent body in charge of evaluating the quality of the implementation of Third Mission and PE-related activities. Jointly with other independent bodies (*Gruppo di Lavoro TeMI, CRUI*), in 2015 ANVUR has firstly proposed a collection information system (SUA-TM) on TM and PE-related activities, which was the basis for a first process of redefinition of the concept of PE. In the revised SUA-TM, PE activities are directly addressed in two SUA-TM sections: in the *B. Public goods production* section, as one of the TM strategic objectives, and as one of the activities to be conducted to foster and achieve other TM-related strategic objectives (such as, *I.4.e- Associations for TM, I.5.c- Music activities, I.6- Activities for public health, I.7- Ongoing education and training, and open teaching*). APENet (Associazione italiana degli Atenei ed Enti di Ricerca per il Public Engagement) is another independent body currently active in promoting a PE culture at university level through promotion and educational activities. 50 research institutions and universities joined APENet. ANVUR regularly promotes meetings and seminars with APEnet and universities rectors to contribute to an ongoing debate on PE.

- **Funding Opportunities on Public Engagement**
  Sources: Ecosister webpage on Public Engagement on Ecosister website; MUR, Higher Education Minister, Ministerial Decree no. 998 of 2023; Webpages from University of Turin, Normale University of Pisa and Sapienza University of Rome; RISIS-EFIL dataset

TM and PE-related activities are funded by a dedicated share of FFO. According to Ministerial Decree no. 998 of 2023, the 1,5% of the funds allocated to universities are to be invested in TM activities. In general, there are no calls for funding specifically dedicated to TM and PE at the national level in Italy. However, some recently published calls for proposals, in the context of the National Recovery and Resilience Plan (NRRP), explicitly assign an investment quota to TM ("Ecosystems for Innovation", ECS) and PE ("Research initiatives for technologies and innovative approaches in the healthcare and social care fields"). Some Italian universities launch calls for funding PE-focused projects, at regional level (for instance, in the context of "Technology Transfer and Innovation Program – TTIP" in Emilia-Romagna), and at local level (for instance, at University of Turin; Normale University of Pisa https://www.sns.it/it/opportunita-di-finanziamento; https://www.uniroma1.it/it/pagina/bando-di-ateneo-iniziative-di-terza-missione-2023). However, the calls for proposals generally refer to TM-related activities, sometimes with a specific focus on PE activities.

- **Reporting at national level on Public Engagement effort**
  Source: ANVUR websites; ANVUR webpage on "Rapporti finali GEV e ANVUR on 2004-2010 VQR cycles"; Romagnosi (2018)

ANVUR reports the main results regarding the VQR cycles. Since the first VQR cycle (2004-2010), the VQR final report (published in 2013) has provided useful data for starting a first exploratory data collection process. This first data collection of TM-related data was important to start mapping and standardizing the types of activities conducted by universities. At that time, the available indicators were not suitable for comparison. With the first SUA-TM and the revised version, ANVUR has started to collect more standardized data, published in the second VQR cycle final report (2017), and the third VQR cycle final report (2022) in a specific section referring to PE related activities.

- **Evaluation of Public Engagement**
  Source: ANVUR website; ANVUR (2018); MUR (2021)

PE is evaluated according to an informed peer review method, in the context of VQR. ANVUR has also provided a detailed *Manual for the evaluation of TM* to support evaluation experts in this process. Since the second VQR cycle, the indicators adopted for the evaluation of TM and PE activities are considered for the resources' allocation to research institutions and universities. The revised SUA-TM has a compilation form for both universities and universities departments. PE is evaluated both as a single strategic objective (I.8- Public engagement), and as a part of other strategic objectives.

References

ANVUR website: https://www.anvur.it/
ANVUR "Third Mission / Impact" webpage on the ANVUR website: https://www.anvur.it/en/activities/third-mission-impact/
ANVUR. *Rapporti finali GEV e ANVUR on 2004-2010 VQR cycles*. https://www.anvur.it/attivita/vqr/vqr-2004-2010/rapporti-finali-gev-e-anvur/
ANVUR (2016). La valutazione della terza missione nelle Università e negli Enti di Ricerca. Manuale per la valutazione: https://www.anvur.it/wp-content/uploads/2016/06/Manuale%20di%20valutazione%20TM~.pdf

ANVUR (2018). Linee guida per la compilazione della Scheda Unica Annuale Terza Missione e Impatto Sociale SUA-TM/IS per le Università: https://www.anvur.it/wp-content/uploads/2018/11/SUA-TM_Lineeguida.pdf

APEnet website https://www.apenetwork.it/

Ecosister webpage on Public Engagement on Ecosister website: https://ecosister.it/public-engagement-gli-atenei-della-regione-lanciano-i-bandi-per-lidentificazione-dei-challenge-owner/

European Commission (2023). Italy: Funding in education: Higher education funding. https://eurydice.eacea.ec.europa.eu/national-education-systems/italy/higher-education-funding

MUR (2021). Linee generali d'indirizzo della programmazione delle università 2021-2023 e indicatori per la valutazione periodica dei risultati: https://www.mur.gov.it/sites/default/files/2021-04/Decreto%20Ministeriale%20n.289%20del%2025-03-2021.pdf

MUR, Higher Education Minister, Ministerial Decree no. 998 of 2023: https://www.anvur.it/wp-content/uploads/2023/09/Decreto-Ministeriale-n.-998-del-01-08-2023.pdf

RISIS-EFIL dataset (metadata on https://docs.risis.io/datasets/metadata/efil)

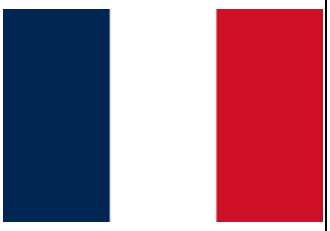
Romagnosi, S. (2018). Il percorso Anvur sul Public Engagement. Destinazione Public Engagement. Presentation at "Prima Assemblea e Workshop APEnet. https://www.anvur.it/wp-content/uploads/2018/09/Public-Engagement_16-marzo-18.pdf

Normale University of Pisa webpage: https://www.sns.it/it/opportunita-di-finanziamento Sapienza university of Rome webpage on Bando di Ateneo per iniziative di Terza Missione 2023: https://www.uniroma1.it/it/pagina/bando-di-ateneo-iniziative-di-terza-missione-2023

University of Turin webpage on Progetti di Public Engagement di Ateneo: https://www.unito.it/territorio-e-societa/condivisione-e-partecipazione/progetti-di-public-engagement-di-ateneo

(All websites accessed in April 2024)

ANNEX 2



COUNTRY FACT SHEET

France

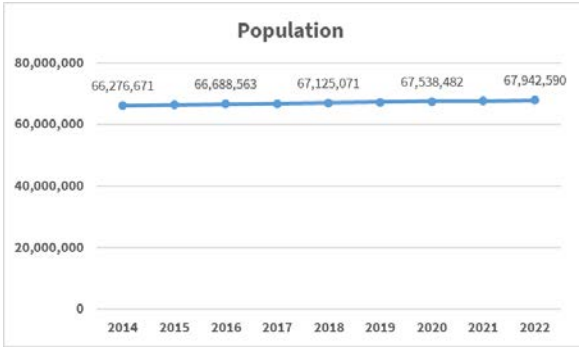


Figure 1. Population trend in France between 2014 and 2022. Unit: number of inhabitants. Source: OECD.Stat.

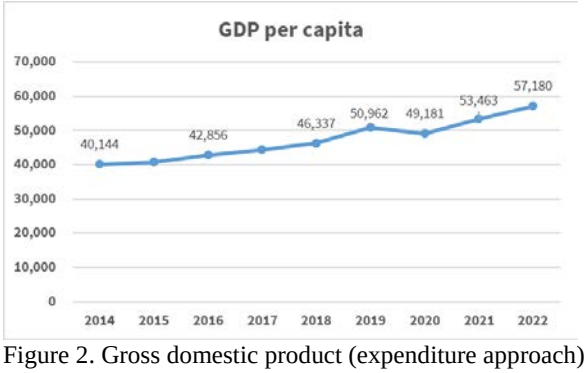


Figure 2. Gross domestic product (expenditure approach) per capita in France between 2014 and 2022. Unit: current prices 2015, current PPP dollars. Source: OECD.Stat.

GENERAL OUTLOOK

Population
Source: OECD
In 2022, the French population consisted of almost 68 million inhabitants. The overall trend since 2014 (Fig. 1) shows a continuous population growth characterized by moderate increases.

Gross Domestic Product (GDP) per capita
Source: OECD
In 2022, GDP per capita reached $57,180, higher than the average of European OECD countries ($56,296). The trend in Fig. 2 indicates a fairly sustained growth, especially from 2017. In 2020, there was a decrease compared to the previous year, associated with the economic impact of the COVID-19 pandemic. The recovery in the following two years was robust.

Human Development Index (HDI)
Source: United Nations Development Programme (UNDP)
France has a Human Development Index score of 0.903, which places it 28th in the 2021 ranking of UN member countries (source: United Nations). The index, which ranges from 0 to 1, takes into account Gross national income per capita, Life expectancy at birth, Expected years of schooling and Mean years of schooling.

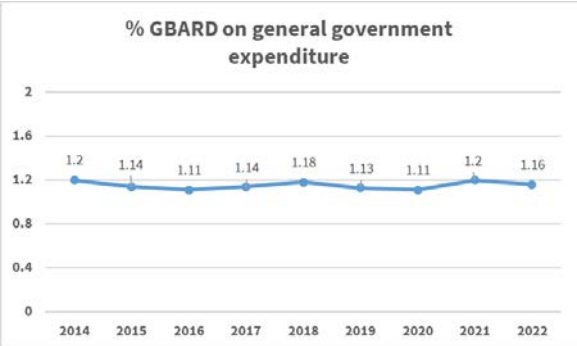


Figure 3. Government Budget Allocation for R&D (GBARD) as a share of general government expenditure between 2014 and 2022 in France. Unit: percentage. Source: EUROSTAT.

Government Budget Allocation for R&D (GBARD) as a share of general government expenditure

Source: EUROSTAT

Data on the Government Budget Allocation for Research and Development (GBARD) as a percentage of total government spending reflect the government's financial commitment to Research and Development. The percentage of French government spending devoted to Research and Development shows slight fluctuations but tends to be stable around 1,15%. In 2022 the percentage reaches 1.16% (Fig. 3).

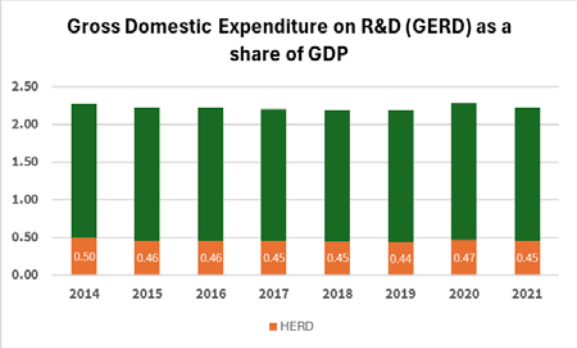


Figure 4. Gross Domestic Expenditure on Research and Development (GERD) – and the component Higher Education Expenditure on R&D (HERD)- as a share of GDP between 2014 and 2022 in France. Unit: percentage. Source: OECD.Stat.

Gross Domestic Expenditure on Research and Development (GERD) as a share of GDP

Source: OECD

Over the period 2014-2021, GERD in France showed slight fluctuations, remaining relatively stable between 2.19% and 2.28% of GDP (Fig. 4). The HERD component, which represents the share of R&D expenditure carried out by higher education institutions, shows some stability, at around 0.45%, after a decrease between 2014 and 2015.

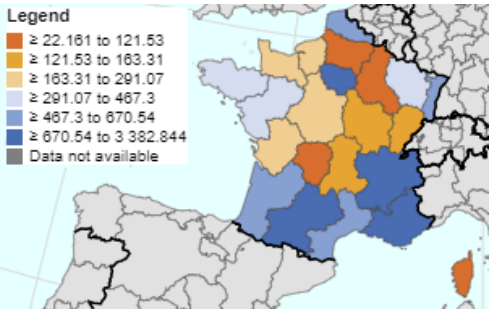


Figure 5. Concentration of Higher Education Expenditure on R&D (HERD) in 2021 in French regions (NUTS2). Unit: Million Euro. Source: EUROSTAT.

Higher Education Expenditure on R&D (HERD) by region (NUTS2)

Source: EUROSTAT

According to 2021 data (Fig. 5), HERD in France is mainly concentrated in the region of Paris (Ile de France). In the South, the regions Rhône-Alpes. Provence-Alpes - Côte d'Azur, Midi-Pyrénées, Languedoc-Roussillon have higher expenditures than in the rest of the country. Eastern and Northeastern regions show more limited spending.

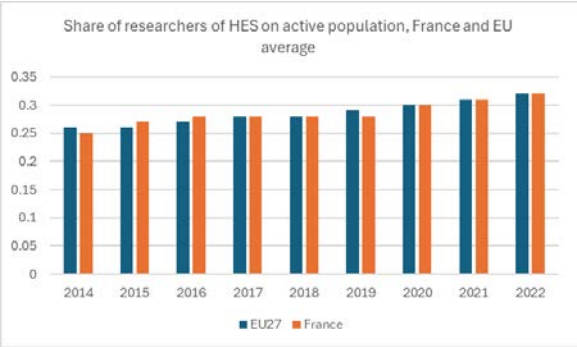


Figure 6. Share of researchers of Higher Education Sector on active population (numerator in full-time equivalent, FTE), France. Unit: percentage.

Share of researchers of Higher Education Sector on total active population

Source: EUROSTAT

According to EUROSTAT data, in France, the proportion of researchers in higher education on the working population was 0.32% in 2022, with a stable trend since 2020. From 2014 to 2019, the share was between 0.25% and 0.28% and was constantly growing. The share of researchers in France is slightly lower than the EU average share of researchers on working population (Figure 6).

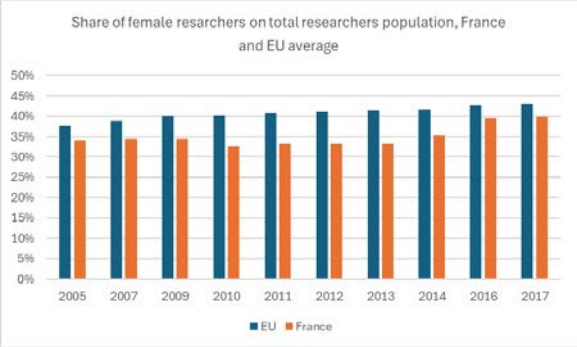


Figure 7. Share of female researchers on total researchers' population, France.
Unit: percentage based on head count (HC).

Share of female researchers in Higher Education Sector

Source: EUROSTAT via SUPERMoRRI Project

Figure 7 shows the share of female researchers on total researchers' population. After a period of stagnation, the share of female researchers is growing slightly but constantly, rising from 40% in 2010 to 43% in 2017. The French share is rather lower than the EU average. Data goes up to 2017.

Year	Number
2011	78
2012	79
2013	77
2014	77
2015	74
2016	-
2017	73
2018	73
2019	69
2020	67

Table 1. Number of universities per year (source: ETER).

Year	Enrolled at ISCED 5-7	%
2013	2,338,135	3.56
2014	2,388,880	3.61
2015	2,424,158	3.65
2016	2,480,186	3.72
2017	2,532,831	3.79
2018	2,618,729	3.91
2019	2,685,408	4.00
2020	2,748,317	4.08
2021	2,809,289	4.15
2022	2,883,412	4.25

Table 2. Students at ISCED 5 to 7 and percentage on national population (source: EUROSTAT).

Year	Graduated at ISCED 5-7	%	Graduated at ISCED 7	%
2013	713,121	1.09	259,849	0.40
2014	729,200	1.10	269,114	0.41
2015	748,947	1.13	281,535	0.42
2016	759,763	1.14	286,340	0.43
2017	767,048	1.15	291,986	0.44
2018	782,232	1.17	298,930	0.45
2019	791,021	1.18	309,251	0.46
2020	836,270	1.24	315,102	0.47
2021	871,728	1.29	339,359	0.50
2022	871,569	1.28	351,459	0.52

Table 3. Graduated at ISCED 5 to 7 and ISCED 7, and relative fractions on population (source: EUROSTAT).

STRUCTURE OF THE UNIVERSITY SYSTEM

Introduction

The Law on Liberties and Responsibilities of Universities (2007) introduced greater freedom for HEIs: more relaxed governance, flexibility and autonomy in the management of credits and real estate assets, and access to private management. The Ministry of Higher Education periodically releases an Assessment of Higher Education and Research.

Number of universities in the country

Source: ETER

The number of universities in the country decreases slightly at the end of the 2010s, going from 79 in 2012 to 67 in 2020 (Table 1). Thus, the average population per university increases from around 82/83 thousand inhabitants per university to almost 98 thousand in 2020.

Geographic distribution

Source: ETER

French universities are located in 52 NUTS3 regions out of a total of 102. The data show a certain concentration in Paris (10 universities), and the presence of 3 universities each for 5 regions (Seine-et-Marne, Nord, Haute-Garonne, Rhône, Extra-Regio NUTS 3.

Students enrolled in universities in the country on population

Source: EUROSTAT

The number of students enrolled increases notably over time from 2.3 million students in 2013 to 2.9 million students in 2022 (Table 2). Thus, also the share of students over population increases from 3.56% to 4.25% in the considered years.

Graduated on population in the country

Source: EUROSTAT

The number and percentage of graduates increase over time between 2013 and 2022 (Table 3). Fractions of graduated at ISCED 5-7 grows from 1.09% to 1.28%; graduates at ISCED 8 from 0.4% to 0.52%.

Year	Enrolled at ISCED 8	%	Graduated at ISCED 8	%
2013	69,535	0.11	13,890	0.02
2014	68,938	0.10	13,365	0.02
2015	68,607	0.10	14,651	0.02
2016	67,679	0.10	13,787	0.02
2017	66,855	0.10	13,583	0.02
2018	66,096	0.10	13,729	0.02
2019	66,901	0.10	13,405	0.02
2020	66,122	0.10	11,810	0.02
2021	65,088	0.10	12,247	0.02
2022	66,534	0.10	14,364	0.02

Table 4. Number of ISCED-8 students and graduated per year, and relative fractions on national population (source: EUROSTAT).

Year	Number of EU-FP projects	Total FP projects coordinator
2011	764	181
2012	846	198
2013	903	215
2014	859	222
2015	781	212
2016	-	-
2017	795	228
2018	835	218
2019	898	211
2020	1,001	235

Table 5. Number of participated and coordinated EU projects (source: ETER).

Year	Total third-party funding
2011	252,502,826.62
2012	669,806,099.65
2013	613,869,662.29
2014	620,092,412.52
2015	323,378,216.24
2016	-
2017	341,722,616.96
2018	352,854,142.77
2019	398,687,885.97
2020	363,483,697.68

Table 6. Total third-party funding per year (source: ETER). Currency: Euro

	OA	FA	SA	AA
FR	57%	44%	44%	42%

Table 7. Autonomy Scorecard results: France.

Enrolled PhD students and PhD holders on population in the country

Source: EUROSTAT

The number and fraction of Ph.Ds. enrolled and graduated remain stable over the years 2013-2022 (Table 4). The percentage of enrolled at ISCED 8 is stable at 0.10%, while the percentage of graduated is stable at 0.02%.

University Participation in European Projects

Source: ETER

The participation of French universities in European projects grows sensibly in the decade. The value in year 2020 is 30% higher than the value in 2011. The number of coordinated projects grows in parallel; coordinated projects are about 25% of the total (Table 5).

Third-party funding

Source: ETER

At first glance, the data on third-party funding show extreme variability; however, it must be highlighted that these data are only partially reliable: in fact, the years 2017-2020 suffer from the presence of a large amount of missing data from universities, which therefore do not add up to the total (Table 5). The results are therefore only partially indicative of the actual trend.

Autonomy level of the universities from the government

Source: European University Association

The European University Association has launched the EUA Autonomy Scorecard in 2023, to provide a methodology to cluster national higher education systems according to their level of autonomy. The national university systems examined are those of EU27, UK, Norway, Iceland, Turkey, Georgia and Serbia. The Scorecard is composed of more than 20 core indicators, grouped in the 4 key dimensions of university institutional autonomy:

- *Organizational autonomy* (OA);
- *Financial autonomy* (FA);
- *Staff autonomy* (SA);
- *Academic autonomy* (AA).

The Autonomy Scorecard provides the weighted results for each indicator, grouped by key dimensions, as listed above. The national scores are split into four clusters, in order to facilitate an overall comparison:

- A high group scoring between 100% and 81%;
- A medium high group scoring between 80% and 61%;
- A medium low group scoring between 60% and 41%;
- A low group scoring between 40% and 0%.

According to Table 7, the overall autonomy level of the French higher education system is medium low, considering the Autonomy Scorecard rankings. The level of autonomy of French universities is medium low for all 4 key dimensions. More specifically, for what it concerns *Financial Autonomy*, *Staff Autonomy* and *Academic Autonomy*, French universities are among the least autonomous in the sample of countries considered by the European University Association.

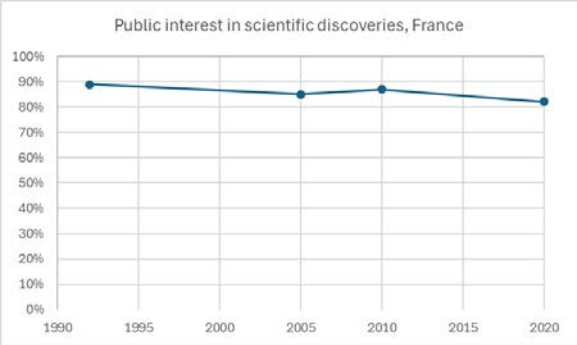


Figure 8. Percentage of public interest in scientific discoveries in France.
Unit: percentage.

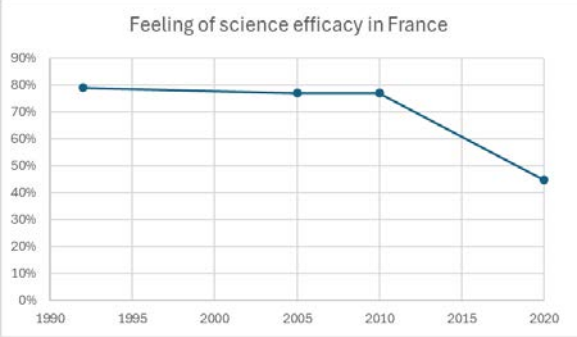


Figure 9. Feeling of science efficacy in France.
Unit: percentage.

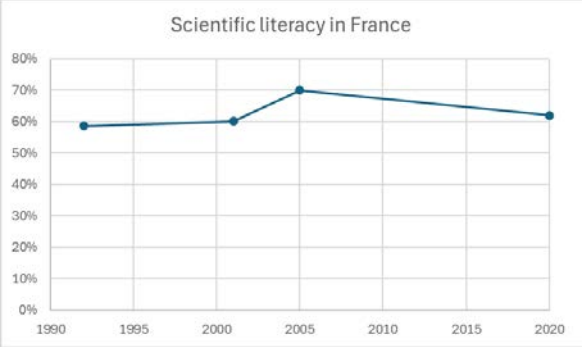


Figure 10. Scientific literacy in France.
Unit: percentage.

PEOPLE'S ATTITUDE AND FEELINGS FOR SCIENCE

In the context of the Horizon 2020 SUPER MoRRI project, which aimed at supporting the process of transformation of R&I by encouraging a closer collaboration with societal actors and a more socially engaged science, a list of secondary data was provided, reporting the most relevant higher education system variables and indicators by country. 6 of the mentioned indicators, those concerning the wide public's interest and engagement in science (based on Eurobarometer data published in December 2021), are reported below.

Interest in scientific discoveries
Source: Eurobarometer via SUPERMoRRI Project
Figure 8 is extracted from the *Interest in scientific discoveries* database and reports the French public's interest in scientific discoveries. According to the data in the figure, the French general public's interest has declined overall, except for a recovery that took place between 2005 and 2010. In 2020, public interest in scientific discoveries is 82%.

Feeling of science efficacy
Source: Eurobarometer via SUPERMoRRI Project
The *Feeling of scientific efficacy indicator* shows the percentage of citizens who feel somewhat well informed about scientific developments. Figure 9 shows the feeling of science efficacy expressed by French people. After a period in which the share of people feeling very or moderately well informed about scientific developments was relatively high, starting from 2010 it sharply declined. In 2020, the percentage of French people feeling very or moderately well informed about scientific developments is 45%.

Scientific literacy
Source: Eurobarometer via SUPERMoRRI Project
Scientific literacy is defined as citizens' knowledge level of science textbooks, calculated by giving respondents a science quiz. According to the data in Figure 10, French citizens' scientific literacy has been strongly decreasing since 2005, after a period of intense growth of scientific literacy (from 2000 to 2005). In 2020, French citizens' scientific literacy is 62%.

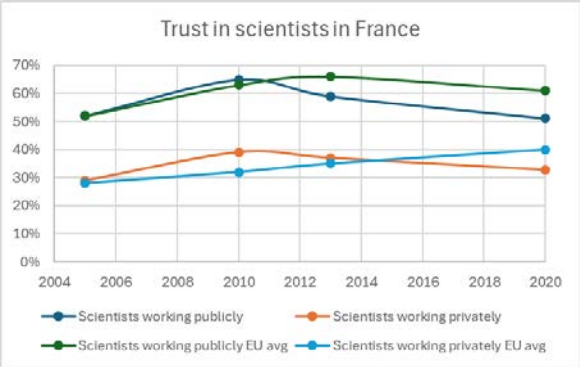


Figure 11. Trust in scientists in France.
Unit: percentage.

Trust in scientists

Source: Eurobarometer via SUPERMoRRI Project

The *Trust in scientists* indicator defines the percentage of citizens that believe that scientists are among the best qualified to explain the impact of scientific and technological developments. The Eurobarometer data also distinguish between researchers working in the public or in the private sector. Figure 11 shows both trust in scientists in France and the average trust in scientists in Europe. Figure 11 shows that trust in scientists in France is slightly lower than the EU average for both public and private sector scientists. In 2020, French citizens' trust in scientists working publicly is at 51%, while trust in scientists working privately is at 33%.

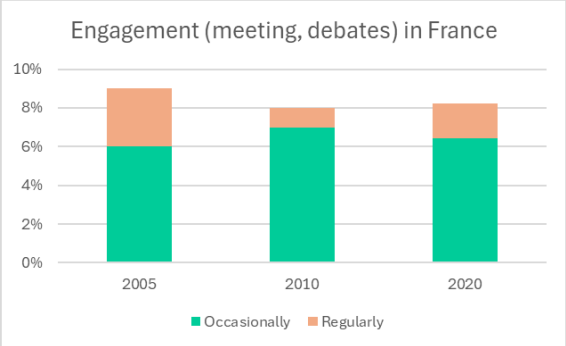


Figure 12. Citizens' engagement in meeting and debates in France.
Unit: percentage.

Engagement and co-creation (meetings and debates)

Source: Eurobarometer via SUPERMoRRI Project

The *Engagement and co-creation (meeting and debates)* indicator shows the share of citizens claiming to attend (regularly or occasionally) public meetings or debates about science and technology. According to the data in Figure 13, French citizens' engagement in meetings and debates has slightly decreased over time: occasional participation has somehow remained stable, while regular participation has slightly decreased over time. In 2020, citizens claiming to regularly attend meetings and debates are 2%, and citizens claiming to occasionally attend meetings and debates are 6%.

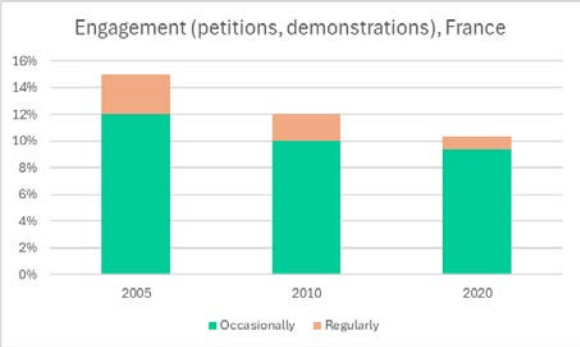


Figure 13. Citizens' engagement in petitions and demonstrations in France. Unit: percentage.

Engagement and co-creation (petitions and demonstrations)

Source: Eurobarometer via SUPERMoRRI Project

The *Engagement and co-creation (petitions, demonstrations)* indicator shows the share of citizens claiming to attend (regularly or occasionally) petitions and demonstrations focused on science and technology-related topics. According to the data in Figure 13, French citizens' engagement has decreased both in terms of occasional and regular participation. In 2020, French citizens claiming to regularly attend petitions and demonstrations are 1%, and citizens claiming to occasionally attend petitions and demonstrations are 9%.

PUBLIC ENGAGEMENT STRATEGIES, DRIVERS AND EVALUATION

- **Third mission**
  Sources: Bonollo et al. (2022) ; Code de l'éducation (version en vigueur au 27 juillet 2024) on Légifrance website:

The importance of promoting the relationship between the academic community and society has been recognized by the French Minister of Higher Education as a determining aspect of scientific activity. According to Law no. 123 (*Code de l'éducation*), six Higher Education institutional missions have been identified. The second and third points of article 3 of Law no. 123 more specifically define universities and research institutions' commitment to activities that promote and involve society in the scientific process: a) Scientific and technological research, dissemination and valorization of its results for the benefit of society; the benefit to society is based on development and scientific innovation, on the technological transfer (where possible), on the support to local enterprises and associations, on consulting public policies where there is a need for society, to sustain a long-term economic and social development; b) Guidance, social promotion and professional integration.
However, a bibliographic analysis revealed that the concept of the Third Mission in the French higher education context has not yet undergone a process of formalization by the institutions, suggesting a low institutional commitment to Third Mission-related actions and activities.

- **National Public Engagement strategy (if any)**
  Sources: Ministère de l'enseignement supérieur et de la recherche website; ANR website; Bordeaux university and Aix Marseille Université websites

According to the documentary analysis carried out, there is no evidence of an operationalized Public Engagement (PE) strategy. However, it is noteworthy to report some virtuous PE-oriented activities carried out at university level (such as ENLIGHT and SUNSET, at the University of Bordeaux, and Les Open Labs Civis at Aix Marseille Université). The lack of institutional operationalization of the PE concept is also demonstrated by the difficulty of finding a clear definition of PE in literature and institutional documents. On the contrary, a number of terms are used interchangeably to refer to the concept of PE: *civic engagement, engagement publique, engagement social* (Bonollo *et al.*, 2022). However, France is actively undergoing a process of opening up and sharing of academic outputs with society, through two main programmes:

1. First and Second "Plan National Science Ouverte", and
2. "Science avec et pour la société" programme (SAPS), under the *Loi de programmation de la recherche 2021-2030* (Law on the planning of research).

The ANR (French National Research Agency) has created an online portal to collect all scientific publications arising from projects funded by the agency and promoting, and to promote the scientific dissemination. Also, it created a "National barometer on open science", which measures the openness rate of national scientific publications.

- **Presence and role of independent bodies on Public Engagement**
  Sources: Ministère de l'enseignement supérieur et de la recherche, Direction générale de la recherche et de l'innovation (Dgri) webpage; ANR website

Based on the documentary analysis conducted, there are no independent bodies officially committed at the national level to foster PE activities. The Minister of Higher Education and the ANR strongly encourage the academic communities' engagement the share scientific outcomes with the society and the enterprises. The Minister and its offices (DGRI, DGRI-SPFCO and DGRI-SITTAR) set the national priorities to for the dialogue between the academia, enterprises and society. The ANR strongly encourages the sharing of scientific outputs to wide society and ensures the technology transfer to enterprises by financing and managing of innovative projects. Furthermore, the ANR is involved, in associations with other entities, such as the Agence de la transition écologique (ADEME), l'ANRS Maladies infectieuses émergentes (ANRS MIE), l'Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (Anses) et l'Institut national du cancer (INCa), to foster open science on health issues.

- **Funding Opportunities on Public Engagement**
  Sources: Ministère de l'enseignement supérieur et de la recherche website; ANR website ; ADEME et al. (2020); RISIS-EFIL dataset

According to the documentary analysis carried out, there are not many opportunities in France in terms of calls for competitive funding that explicitly address PE-related initiatives. However, as France is undergoing a process of opening up and bringing the results of science closer to society, 3 million euros will be allocated to SAPS projects and initiatives to promote the dialogue between science and society (for the period 2021-2023). 1% of the ANR budget has to be invested in projects to foster the dialogue between society and science, for the 2021-2030 programming period. The Committee for Open Science (*Le Comité pour la science ouverte*) is in charge of managing funds for the promotion of open science, mainly by providing financial support to scientific initiatives relevant to the promotion of open science. The Committee also rewards the most outstanding scientific initiatives for open science with two prizes: the *Research Data Open Science Prize* and the *Research Open Source Software Prize*.

- **Reporting at national level on Public Engagement effort**
  Sources: IGÉSR (2021); Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation (2021)

Our analysis revealed that there are no national initiatives on PE carried out by universities and research institutes. The IGESR, an authority under the Ministry of Education, Higher Education and Research, is in charge of monitoring, controlling and evaluating the activities carried out by the research and educational institutions. In 2021, in line with the commitment of the Ministry of Higher Education to promote open science, IGESR published a report on the relation and activities between society and science (*Cartographie des actions conduites par les établissements d'enseignement supérieur (universités et écoles) en matière de relations entre science et société*). An Assessment of the national Plan for open science 2018-2021 was also issued, following the first "Plan National Science Ouverte".

- **Evaluation of Public Engagement**
  Sources: HCERES website, Bonnafous-Boucher (2022)

Research evaluation in France is carried out by HCERES (which replaced AERES in 2014). HCERES prefers a holistic approach to evaluation, rather than developing a specific framework focused solely on research social impact. HCERES produces evaluation reports on universities, largely based on universities' self-evaluation reports (*Repères pour l'auto-évaluation des universités et des coordinations territoriales*). Through self-evaluation reports, universities illustrate their missions and objectives, as well as their governance and the measures taken to implement them. HCERES does not provide any guideline for writing the self-evaluation report. As universities PE initiatives are seen as part of the mission of higher education institutions' (as seen above), universities generally refer to self-evaluation reports on their PE endeavors, among other aspects covered. HCERES assesses universities' declared PE strategies and the measures taken to implement them, based on available qualitative and quantitative data. It should be noted that HCERES does not take into account evaluation mechanisms and indicators for the direct assessment of PE initiatives at the level of universities.

References

ADEME, ANR, ANSES, INCa, & Inserm (2020). *Joint Statement by the French National Research Funding Agencies in support of Open Science*. https://anr.fr/fileadmin/documents/2020/Joint-Statement-InsupportofOpen_Science_June2020.pdf

Aix Marseille Université website:
https://www.univ-amu.fr/en
https://www.univ-amu.fr/fr/public/les-open-labs-civis

ANR website:

https://anr.fr/en/
https://anr.fr/en/anrs-role-in-research/commitments/open-science/
https://anr.fr/fr/lanr/engagements/la-science-ouverte/#
https://anr.fr/fr/lanr/engagements/la-science-ouverte/le-barometre-science-ouverte-anr/
https://anr.hal.science/
https://www.ouvrirlascience.fr/comite-fr/
https://www.ouvrirlascience.fr/presentation-of-the-2023-open-science-research-data-awards/
https://www.ouvrirlascience.fr/the-2023-open-science-free-research-software-awards/

Bonnafous-Boucher M. (2022). What Do We Talk About When We Talk About Social Impact?. Anvur's Workshop Presentation from HCERES. https://www.anvur.it/wp-content/uploads/2023/03/Bonnafous_SocietalImpact_230119.pdf

Bonollo, E., Lazzini, S., & Occhipinti, Z. (2022). Third Mission and Intellectual Capital External Dimension: The Implications in the European University Planning Process. In Caperchione, E., & Bianchi, C. (eds) *Governance and Performance Management in Public Universities*. SIDREA Series in Accounting and Business Administration. Springe.

Bordeaux university website:
https://www.u-bordeaux.fr/en
https://www.u-bordeaux.fr/universite/notre-strategie
https://www.u-bordeaux.fr/universite/nos-engagements

Code de l'éducation (version en vigueur au 27 juillet 2024), Chapitre III: Objectifs et missions de l'enseignement supérieur. (Articles L123-1 à L123-9) on Légifrance website. https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000006071191/LEGISCTA000006166563/

HCERES website: https://www.hceres.fr/en

IGÉSR (2021). *Cartographie des actions conduites par les établissements ESR en matière de relations entre science et société*. Rapport IGÉSR, 2021-65.
https://www.enseignementsup-recherche.gouv.fr/fr/cartographie-des-actions-conduites-par-les-etablissements-esr-en-matiere-de-relations-entre-science-47669

Ministère de l'enseignement supérieur et de la recherche website:
https://www.enseignementsup-recherche.gouv.fr/fr
https://www.enseignementsup-recherche.gouv.fr/fr/science-avec-et-pour-la-societe-les-mesures-issues-de-la-lpr-49218
https://www.enseignementsup-recherche.gouv.fr/fr/le-plan-national-pour-la-science-ouverte-2021-2024-vers-une-generalisation-de-la-science-ouverte-en-48525
https://www.ouvrirlascience.fr/2020-barometer-of-open-science-56-of-french-publications-are-in-open-access/

Ministère de l'enseignement supérieur et de la recherche. Direction générale de la recherche et de l'innovation (Dgri) webpage, https://www.enseignementsup-recherche.gouv.fr/fr/direction-generale-de-la-recherche-et-de-l-innovation-dgri-83753

Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation (2021). O*uvrir la Science ! Bilan du Plan national pour la science ouverte 2018-2021*. Report of the Ministère de l'enseignement supérieur, de la recherche et de l'innovation.
https://www.enseignementsup-recherche.gouv.fr/sites/default/files/content_migration/document/Bilan_PNSO_v2_1414243.pdf

(All websites accessed in April 2024)

ANNEX 3

COUNTRY FACT SHEET

United Kingdom

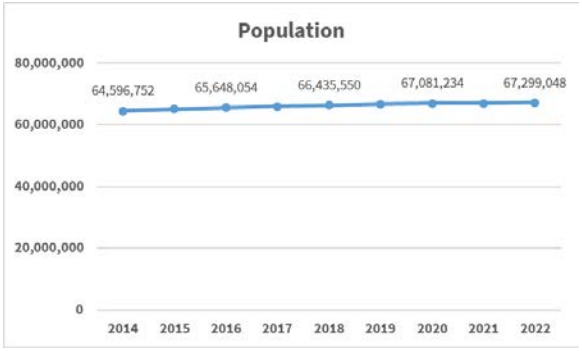


Figure 1. Population trend in United Kingdom between 2014 and 2022. Unit: number of inhabitants. Source: OECD.Stat.

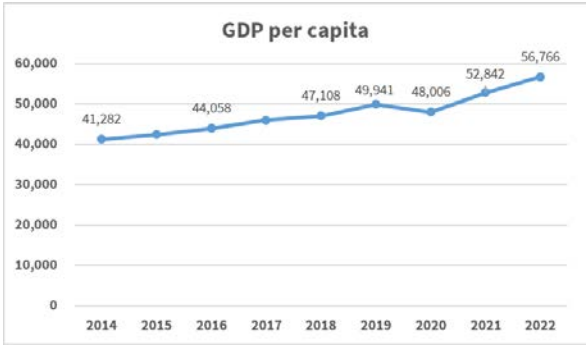


Figure 2. Gross domestic product (expenditure approach) per capita in the United Kingdom between 2014 and 2022. Unit: current prices 2015, current PPP dollars. Source: OECD.Stat.

GENERAL OUTLOOK

Population

Source: OECD

The UK population reaches 67.3 million in 2022. The overall trend shows steady population growth over the period considered (since 2014), with a slowdown only in 2021 (Figure 1).

Gross Domestic Product (GDP) per capita

Source: OECD

In 2022, GDP per capita is $56,766, in line with the average for European OECD countries ($56,296). Since 2014, the UK has experienced gradual growth in GDP per capita, with a temporary but notable trend reversal in 2020 due to the COVID-19 pandemic (Figure 2). The recovery over the following two years was particularly strong.

Human Development Index (HDI)

Source: United Nations Development Programme (UNDP)

The UK has a Human Development Index score of 0.929, which places it 18th in the 2021 ranking of UN member countries (source: United Nations). The index, which ranges from 0 to 1, takes into account Gross national income per capita, Life expectancy at birth, Expected years of schooling and Mean years of schooling.

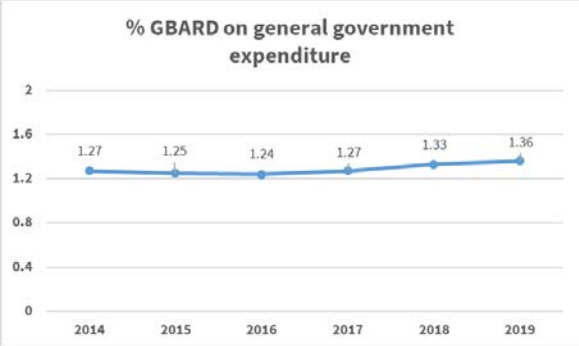


Figure 3. Government Budget Allocation for R&D (GBARD) as a share of general government expenditure between 2014 and 2022 in the United Kingdom. Unit: percentage. Source: EUROSTAT.

Government Budget Allocation for R&D (GBARD) as a share of general government expenditure

Source: EUROSTAT

Data on the Government Budget Allocation for Research and Development (GBARD) as a percentage of total government spending reflect the government's financial commitment to Research and Development. The most recent data available for the UK are for 2019. After a two-year decline after 2014, there was an increase from 1.24% in 2016 to 1.36% in 2019 (Figure 3).

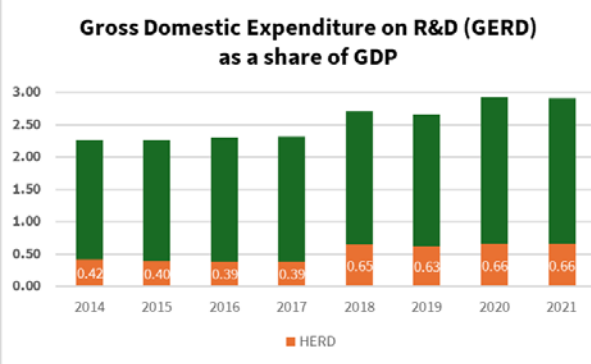


Figure 4. Gross Domestic Expenditure on Research and Development (GERD) – and the component Higher Education Expenditure on R&D (HERD)- as a share of GDP between 2014 and 2021 in the United Kingdom. Unit: percentage. Source: OECD.Stat.

Gross Domestic Expenditure on Research and Development (GERD) as a share of GDP

Source: OECD

Over the period 2014-2021 (see Fig. 4), GERD in the United Kingdom showed a positive trend, from 2.26% (2014) to a relevant percentage of 2.91% (2021) of GDP. The HERD component, which represents the share of Research and Development spending carried out by Higher Education Institutions, showed a strong increase in 2018, and stabilized in 2020-2021 at 0.66%.

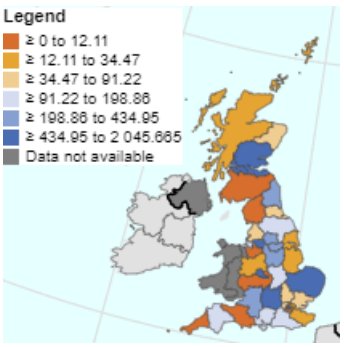


Figure 5. Concentration of Higher Education Expenditure on R&D (HERD) in 2018 (latest available data) in the United Kingdom regions (NUTS2). Data are not available for Northern Ireland and for some regions of the southwestern part of the island.
Unit: Million Euro. Source: EUROSTAT.

Higher Education Expenditure on R&D (HERD) by region (NUTS2)

Source: EUROSTAT

According to 2018 data (Fig. 5), the latest available, HERD in the UK is mainly concentrated in the southern regions of the British Isle, especially in Inner London – West, but also in Berkshire, Buckinghamshire and Oxfordshire; East Anglia. Also, Scotland also has a high level of expenditure. The situation in the different areas of the country is quite diverse, given the fragmentation of the regional level.

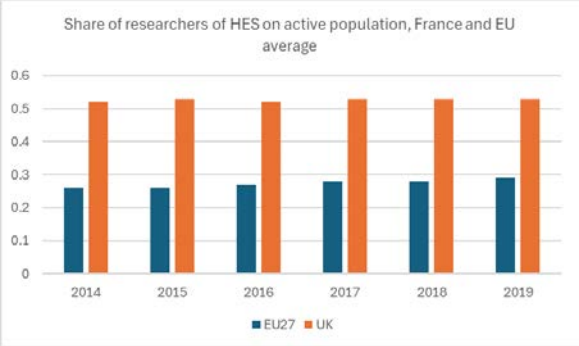


Figure 6. Share of researchers of Higher Education Sector on active population (numerator in full-time equivalent, FTE), UK. Unit: percentage.

Share of researchers of Higher Education Sector on total active population

Source: EUROSTAT

According to EUROSTAT data, in the UK, the share of researchers in higher education was 0.53% of the working population in 2019 (latest data available), with a stable trend over the previous 5 years. According to Figure 6, the UK share of researchers is considerably higher than EU average.

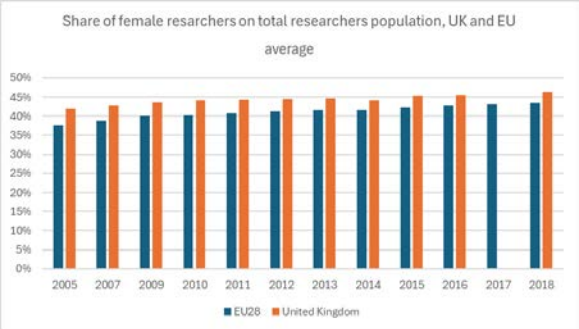


Figure 7. Share of female researchers on total researchers' population, UK.
Unit: percentage based on head count (HC).

Share of female researchers in Higher Education Sector

Source: EUROSTAT via SUPERMoRRI Project

Figure 7 shows the share of female researchers in the total researchers' population. In 2018, the share of female researchers is 46.4%, the trend is fairly stable, and slightly higher than the EU average (Figure 7). The data goes up to 2018.

Year	Number
2011	131
2012	130
2013	129
2014	128
2015	128
2016	128
2017	128
2018	127
2019	127
2020	127

Table 1. Number of universities per year (source: ETER).

Year	Enrolled at ISCED 5-7	%
2013	2,386,199	3.73
2014	2,349,854	3.65
2015	2,330,847	3.59
2016	2,378,667	3.64
2017	2,431,886	3.69
2018	2,467,086	3.72
2019	2,618,287	3.93
2020	-	-
2021	-	-
2022	-	-

Table 2. Students at ISCED 5 to 7 and percentage on national population (source: EUROSTAT).

Year	Graduated at ISCED 5-7	%	Graduated at ISCED 7	%
2013	766,049	1.20	234,727	0.37
2014	747,342	1.16	233,768	0.36
2015	713,640	1.10	233,681	0.36
2016	735,778	1.13	233,157	0.36
2017	755,809	1.15	236,485	0.36
2018	787,871	1.19	253,669	0.38
2019	837,405	1.26	283,610	0.43
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-

Table 3. Graduated at ISCED 5 to 7 and ISCED 7, and relative fractions on population (source: EUROSTAT).

STRUCTURE OF THE UNIVERSITY SYSTEM

Introduction

In the United Kingdom, higher education institutions are established by the Royal Charter or legislation. They encompass a variety of entities, including different types of universities and hybrid colleges of further education that offer degree courses. 24 *research universities* (or a research-intensive universities - that are committed to research as a central part of their mission) are grouped under the Russel Group whose aim is "to help ensure that our universities have the optimum conditions in which to flourish and continue to make social, economic and cultural impacts through their world-leading research and teaching". Universities are funded through the funding councils for teaching and student loans. Fundings decreased quickly in the 2010s.

Number of universities in the country

Source: EUROSTAT

The number of universities in the country is rather stable and decreases only slightly over time (Table 1). The average population per university is slightly above 50 thousand inhabitants. Nevertheless, it should be noted that the number encompasses both research and non-research universities.

Geographic distribution

Universities are located in 90 out of 174 NUTS3 areas. At first sight, the data do not show any particular concentration in specific NUTS3 areas. However, it should be noted that London is divided into 21 different NUTS3 regions. Thus, London counts a total of 24 universities (17% of the total).

Students enrolled in universities in the country on population

Source: ETER

The number of enrolled students in the country remains rather stable, presenting some ups-and-downs across time (Table 2). In 2019 we register a notable increase to over 837 thousand enrolled. Data for UK breaks in 2019.

Graduates on population in the country

Source: EUROSTAT

It is important to note that the data are incomplete, as they are only available until 2019. the number of graduates in the country decreases slightly at the beginning of the considered period and grows at the end. The same applies to both the general data and the data on ISCED 7 graduates. The values are higher than those of the other two countries in the sample – France and Italy (Table 3).

Year	Enrolled at ISCED 8	%	Graduated at ISCED 8	%
2013	109,058	0.17	25,896	0.04
2014	111,395	0.17	25,020	0.04
2015	112,800	0.17	26,636	0.04
2016	113,003	0.17	27,366	0.04
2017	112,289	0.17	28,143	0.04
2018	111,257	0.17	29,469	0.04
2019	112,545	0.17	29,340	0.04
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-

Table 4. Number of ISCED-8 students and graduated per year, and relative fractions on national population (source: EUROSTAT).

Year	Number of EU-FP projects	Total FP projects coordinator
2011	5,393	1,712
2012	6,406	2,149
2013	7,296	2,626
2014	7,177	2,883
2015	7,536	3,102
2016	7,444	3,234
2017	7,083	3,119
2018	6,649	2,882
2019	6,287	2,590
2020	6,025	2,396

Table 5. Number of participated and coordinated EU projects (source: ETER)

Year	Total third-party funding
2011	7,247,722,035.30
2012	8,287,572,607.20
2013	8,315,241,504.37
2014	9,894,370,565.18
2015	10,970,475,586.91
2016	9,830,972,079.86
2017	9,691,173,417.59
2018	9,965,234,935.74
2019	9,547,777,891.70
2020	9,945,148,926.60

Table 6. Total third-party funding per year (source: ETER). Currency: Euro.

	OA	FA	SA	AA
UK (England)	100%	89%	96%	89%
UK (Scotland)	100%	80%	96%	89%

Table 7. Autonomy Scorecard results: UK (England and Scotland).

Enrolled PhD students and PhD holders on population in the country

Source: EUROSTAT

The percentages and numbers of enrolled and graduated PhDs remain stable across time (Table 4). It is relevant to note that the values and fractions are higher than those of the other two countries in the sample, in particular they are much higher than those of Italy.

University Participation in European Projects

Source: ETER

The number of participated EU projects grows steadily and sensibly until 2016. The same is true for the number of coordinated projects (Table 5). After 2016 both values decrease steadily. This decrease might be caused by the Brexit announcement in 2017.

Third-party funding

Source: ETER

Third-party funding is rather high compared to other countries such as France and Italy. The values grow steadily during the first half of the decade. After 2015, the values remain more or less stable at slightly lower values (Table 6).

Autonomy level of the universities from the government

Source: European University Association

The European University Association has launched the EUA Autonomy Scorecard in 2023, to provide a methodology to cluster national higher education systems according to their level of autonomy. The Scorecard is composed of more than 20 core indicators, grouped in the 4 key dimensions of university institutional autonomy:

- *Organizational autonomy* (OA);
- *Financial autonomy* (FA);
- *Staff autonomy* (SA);
- *Academic autonomy* (AA).

The Autonomy Scorecard provides the weighted results for each indicator, grouped by key dimensions, as listed above. The national scores are split into four clusters, in order to facilitate an overall comparison:

- A high group scoring between 100% and 81%;
- A medium high group scoring between 80% and 61%;
- A medium low group scoring between 60% and 41%;
- A low group scoring between 40% and 0%.

As can be seen from Table 7, the Autonomy Scorecard considers the English and Scottish higher education systems separately. Indeed, the English and Scottish higher education systems slightly differ, as a result of their respective historical and cultural legacies, especially after the Devolution. However, it is worth highlighting that both English and Scottish autonomy scores tend to be very high according to the Autonomy Scorecard, with the sole exception of Scottish financial autonomy (FA).

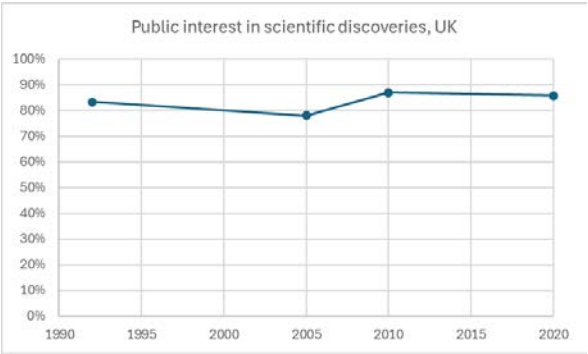


Figure 8. Percentage of public interest in scientific discoveries in UK. Unit: percentage.

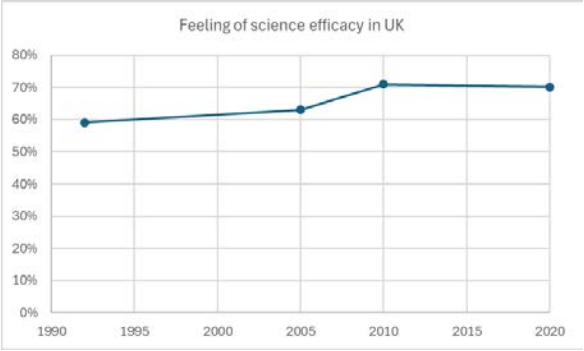


Figure 9. Feeling of science efficacy in UK. Unit: percentage.

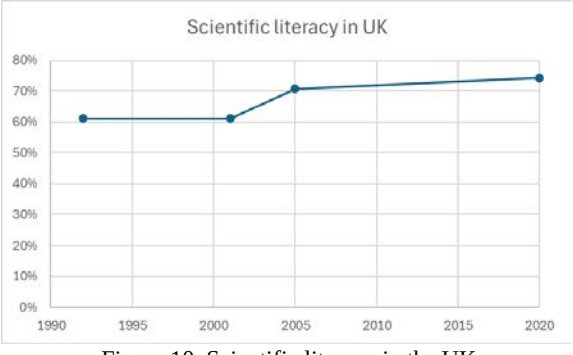


Figure 10. Scientific literacy in the UK. Unit: percentage.

PEOPLE'S ATTITUDE AND FEELINGS FOR SCIENCE

In the context of the Horizon 2020 SUPER MoRRI project, which aimed at supporting the process of transformation of R&I by encouraging a closer collaboration with societal actors and a more socially engaged science, a list of secondary data was provided, reporting the most relevant higher education system variables and indicators by country. 6 of the mentioned indicators, those concerning the wide public's interest and engagement in science (based on Eurobarometer data published in December 2021), are reported below.

Interest in scientific discoveries

Source: Eurobarometer via SUPERMoRRI Project

Figure 8 is extracted from the *Interest in scientific discoveries* database and reports the UK public's interest in scientific discoveries. According to the data shown in Figure 8, public interest in the UK has an irregular pattern. From the early 90's, the public's interest decreased sharply, but increased dramatically from 2005 to 2010, from 78% to 87%. Then, from 2010 to 2020, the public interest decreased slightly, stabilizing at 86%.

Feeling of science efficacy

Source: Eurobarometer via SUPERMoRRI Project

The *Feeling of scientific efficacy indicator* shows the percentage of citizens who feel somewhat well informed about scientific developments. Figure 9 shows that, after a period of slight growth, the proportion of people who say they are well or fairly well informed about scientific developments has remained stable overall between 2005 and 2020, stabilizing at 70%.

Scientific literacy

Source: Eurobarometer via SUPERMoRRI Project

Scientific literacy is defined as citizens' knowledge level of science textbooks, calculated by giving respondents a science quiz. Figure 10 shows that the scientific literacy of UK citizens is increasing slowly but steadily. In 2020, the UK citizens' scientific literacy is 74%.

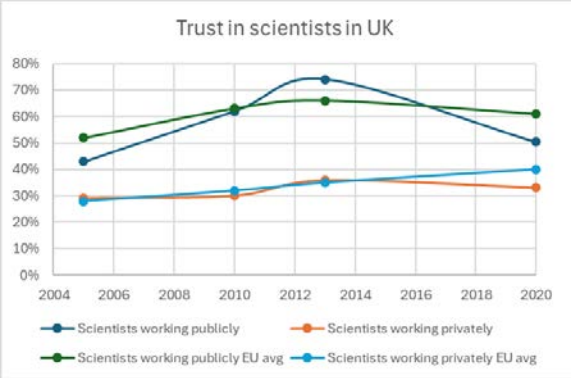


Figure 11. Trust in scientists in the UK. Unit: percentage.

Trust in scientists

Source: Eurobarometer via SUPERMoRRI Project

The *Trust in scientists* indicator defines the percentage of citizens that believe that scientists are among the best qualified to explain the impact of scientific and technological developments. The Eurobarometer data also distinguish between researchers working in the public or in the private sector. According to the data shown in Figure 11, the UK citizens' trust in scientists is lower than the EU average trust in scientists. This is especially remarkable for scientists working in the public sector. In 2020, UK citizens' trust in scientists working in the public sector is at 50%, while trust in scientists working in the private sector is at 33%.

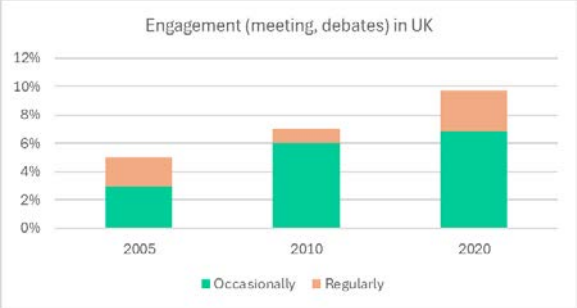


Figure 12. Citizens' engagement in meeting and debates in the UK. Unit: percentage.

Engagement and co-creation (meetings and debates)

Source: Eurobarometer via SUPERMoRRI Project

The *Engagement and co-creation (meeting and debates)* indicator depicts the share of citizens claiming to attend (regularly or occasionally) public meetings or debates about science and technology. According to the data shown in Figure 12, the UK citizens' engagement has constantly increased over time, both on a regular and occasional basis. In 2020, citizens claiming to regularly attend meetings and debates are 3%, and citizens claiming to occasionally attend meetings and debates are 7%.

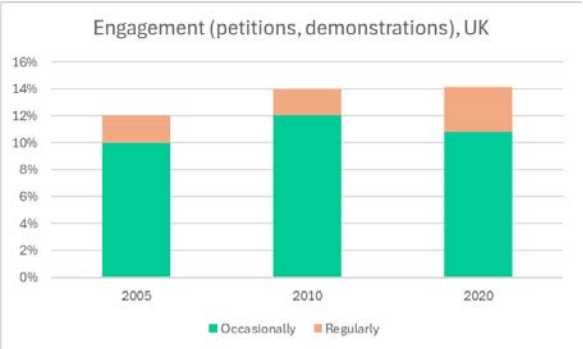


Figure 13. Citizens' engagement in petitions and demonstrations in the UK. Unit: percentage.

Engagement and co-creation (petitions and demonstrations)

Source: Eurobarometer via SUPERMoRRI Project

The *Engagement and co-creation (petitions, demonstrations)* indicator shows the share of citizens claiming to attend (regularly or occasionally) petitions and demostrations focused on science and technology-related topics. According to the data in Figure 13, the UK citizens' occasional participation to petitions and demonstrations has somehow remained stable over time, while citizens affirming to regularly participate to petitions and demonstrations have slightly increased. In 2020, UK citizens claiming to regularly attend petitions and demonstrations are 3%, and citizens claiming to occasionally attend petitions and demonstrations are 11%.

PUBLIC ENGAGEMENT STRATEGIES, DRIVERS AND EVALUATION

- **Third mission**
  Sources: Degl'Innocenti et al. (2019); Rosli and Rossi (2016); REF 2021 website: REF2021 Guidance on Submissions, 2019/01

Government support to promote technology transfer between universities and industry began in the 1970s, but these efforts were initially focused on specific disciplines such as engineering. It wasn't until the 1990s that policymakers started promoting comprehensive initiatives like the *Knowledge Exploitation Programme* to support universities' third mission activities (Rosli and Rossi, 2016). However, the concept of the third mission of universities began to emerge in the early 2000s. This period marked a shift in higher education policy, highlighting the increasing importance of universities' societal roles beyond their traditional functions of education and research. Since then, many UK universities have incorporated the third mission into their strategic objectives, demonstrating a broader commitment to social responsibility and community impact. A performance-based funding system for third mission activities was established in 2007 (Degl'Innocenti *et al.*, 2019). Following the introduction of the Research Excellence Framework (REF), universities have to ensure that their research has real-world relevance. Universities must be able to demonstrate the impact of their research, defined as: "an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia" (source: Annex C, page 90, Guidance on Submissions, REF 2019/01, Jan 2019).

- **National Public Engagement strategy (if any)**
  Sources: NCCPE website; NCCPE (2019); UKRI (2011); UKRI (2022); Sciencewise website

UK Research and Innovation (UKRI) is a non-departmental public body of the UK government responsible for directing research and innovation funding, has developed a *Public Engagement Strategy* (2022) to "break down the barriers between research, innovation and society, using our unique role as a funder of all research and innovation disciplines and sectors, and steward of a vibrant and healthy system" (https://www.ukri.org/publications/ukri-public-engagement-strategy/research-and-innovation-for-all-ukris-public-engagement-strategy/). This initiative follows *The Concordat for Engaging the Public with Research* (2011) a joint statement from Research Councils UK (RCUK), the Funding Councils, academies and research charities has been produced to describe the expectations and responsibilities of research funders with respect to public engagement (https://www.ukri.org/wp-content/uploads/2020/10/UKRI-151020-ConcordatforEngagingthePublicwithResearch.pdf) In UKRI's definition, Public Engagement includes collaborative research, patient and public involvement (PPI), public dialogue, activities at festivals, museums and science centres, school engagement, and much else. UKRI supports many initiatives across its 9 research councils, including: *Sciencewise*, the UK's flagship public dialogue programme on science and technology; the *Festival of Social Science* and *Being Human Festival*; the *UK Climate Resilience Programme* and many others. The NCCPE (National Co-ordinating Centre for Public Engagement), funded by UK Research and Innovation invites institutions – including universities - to publicly affirm, celebrate, and support their public engagement activities and commitments, by signing up to the "*Manifesto for public engagement*". The Manifesto sets out to reinforce the need for engagement and its value to universities and society (https://www.publicengagement.ac.uk/resources/tools-and-frameworks/manifesto-public-engagement).

- **Presence and role of independent bodies on Public Engagement**
  Source: NCCPE website

A reference institution for the development of Public Engagement in the UK is the National Co-ordinating Centre for Public Engagement (NCCPE), established in 2008 as part of the UK Beacons for Public Engagement Initiative. It is jointly hosted by UWE Bristol and the University of Bristol, and is funded by the UK Research and Innovation, the devolved Higher Education funding bodies, and Wellcome Trust, NCCPE inspires and supports universities in engaging with the public. It collaborates with individuals and institutions both inside and outside of Higher Education, including engagement professionals, senior leaders, researchers, communities, funders, and policymakers, to foster culture change in the HE and knowledge sectors. NCCPE provides its definition of public engagement: "*Public engagement describes the many ways in which the activity and benefits of higher education and research can be shared with the public. Engagement is by definition a two-way process, involving interaction and listening, with the goal of generating mutual benefit*". To support high-quality public engagement practice and policy, the NCCPE has developed an extensive range of resources (tools, guides, briefings, collections of materials).

- **Funding Opportunities on Public Engagement**
  Sources: NCCPE website; Sciencewise website; Wellcome Trust website; University of Bristol website; UKRI website; RISIS-EFIL dataset

There is a wide range of funding available in the UK to support public engagement activities. These are provided by government agencies, research councils, innovation agencies, charities, and universities themselves. A major initiative, led and funded by UKRI, with support from the Department for Science, Innovation and Technology, is the *Sciencewise programme*, established in 2004. This programme is the UK Government's exemplar for developing robust evidence on public views to inform policy development in areas of scientific and technological innovation. To date, the programme has supported more than 50 dialogue projects. Several research councils offer funding specifically for public engagement activities. For example, the Royal Society offers a *Fund for Public Engagement*, the Science and Technology Facilities Council (STFC) offers *PE funding*, and the Arts and Humanities Research Council (AHRC) provides *Follow-on funding for PE*. Innovation agencies such as NESTA (UK innovation agency for social good) also provide funds involving PE activities through initiatives such as the *Collective Intelligence Grants*, which fund experiments aimed at creating social impact. Foundations such as the Nuffield Foundation offer funding opportunities for projects with a significant public engagement component. In addition, researchers from UK universities frequently apply for public engagement grants from the Wellcome Trust, a charitable foundation focused on health research based in London. The Wellcome Trust offers various funding opportunities, including the *Public Engagement Fund, Provision for Public Engagement, and PE Fellowships*. Moreover, many UK universities have internal funds available to researchers for public engagement activities. A list of these internal funds can be found on the NCCPE website.

- **Reporting at national level on Public Engagement effort**
  Sources: NCCPE (2016); NCCPE (2020); The Young Foundation's Institute for Community Studies (2022); Sciencewise (2020)

UKRI produces or commissions a variety of reports to support the implementation of its public engagement strategy. The report "*An Equitable Future for Research and Innovation*" shares discussions with community representatives on improving the production, use, and communication of knowledge across the UK. The "*2020 Sciencewise Review*" provides recommendations for future models of public engagement. In addition, the report "*The Engaged University: Turning Words into Action*" has guided our efforts to help universities integrate public engagement into their core activities. A list of other reports is available here: https://www.ukri.org/what-we-do/public-engagement/research-evidence-and-insight/ Another important report, commissioned by RCUK and Wellcome Trust was "*The State of Play: Public Engagement with Research in UK Universities*" (2016), which examined the extent of public engagement within UK Universities. Other reports and reviews on the development of PE in the UK can be found on the NCCPE website.

- **Evaluation of Public Engagement**
  Sources: NCCPE website; REF website; Sheffield university website; University of Bristol: Public engagement evaluation webpage; University of Cambridge: Research strategy office webpage; UKRI website

The performance of HEIs in the UK, has been assessed through either the Research Assessment Exercise (RAE) or, since 2014, the Research Excellence Framework (REF). The REF is currently the UK's system for assessing the excellence of research carried out by higher education institutions. The results of the REF determine the allocation of about £2 billion of public funding for university research annually. The exercise assesses the social and economic benefits of high-quality research in the UK. Public engagement may be included in Research Excellence Framework (REF) impact case studies, either as the primary impact, as part of a broader range of impacts, or as the means through which other impacts are achieved. However, public engagement must stem from excellent underlying research; mere dissemination is insufficient. Impact cases need to demonstrate the significance or benefits to their audiences.
Beyond the REF, there are many online resources, tools, and guides available to help researchers evaluate their public engagement activities. One resource is the *NCCPE Evaluation Guidance* (www.publicengagement.ac.uk/do-engagement/evaluating-public-engagement) and the *UKRI Evaluation Practical Guidelines* (https://www.ukri.org/wp-content/uploads/2020/10/UKRI-151020-EvaluationPracticalGuidelines.pdf). Universities have also developed their own evaluation tools and toolkits. For example, Sheffield University offers the *Evaluation 'Tree' & Toolkit* (www.sheffield.ac.uk/rep/public-engagement/resources/toolkits/evaluation). In addition, many universities have Public Engagement Teams that offer advice on evaluating engagement projects at any stage and organize courses and workshops dedicated to the evaluation of public engagement.

References

Degl'Innocenti, M., Matousek, R., Tzeremes, N. G. (2019). The interconnections of academic research and universities' "third mission": Evidence from the UK. *Research Policy, Elsevier*, *48*(9), 103793.

NCCPE website:
www.publicengagement.ac.uk
www.publicengagement.ac.uk/do-engagement/evaluating-public-engagement

NCCPE (2016, September). *The State of Play: Public Engagement with Research in UK Universities*. https://www.publicengagement.ac.uk/sites/default/files/2023-08/state_of_play_final.pdf

NCCPE (2019). *The engaged university. A Manifesto for Public Engagement.* https://www.publicengagement.ac.uk/sites/default/files/2023-08/nccpe_manifesto_for_public_engagement_2019_0_1.pdf

NCCPE (2020). T*he engaged university: turning words into action*. https://www.publicengagement.ac.uk/sites/default/files/2023-06/nccpe_the_engaged_university_report_aug20_final_0.pdf

REF website: https://www.ref.ac.uk/

REF 2021 Guidance on Submissions, 2019/01. https://2021.ref.ac.uk/media/1447/ref-2019_01-guidance-on-submissions.pdf

Rosli, A., Rossi, F. (2016). Third-mission policy goals and incentives from performance-based funding: Are they aligned?, *Research Evaluation*, *25*(4), pp. 427-441.

Sciencewise (2020, November). R*eview of Sciencewise and proposed future approaches*. https://live-sciencewise.pantheonsite.io/wp-content/uploads/2020/11/SOIF-Report.pdf

Sciencewise website: https://sciencewise.org.uk/

The Young Foundation's Institute for Community Studies (2022). *An equitable future for research and innovation. Building sustained community involvement in knowledge production*. https://youngfoundation.b-cdn.net/wp-content/uploads/2022/07/UKRI-BROCHURE-V8b.pdf?x18753

UKRI (2011). *Concordat for engaging the public with research. A set of principles drawn up by the Funders of Research in the UK*. https://www.ukri.org/wp-content/uploads/2020/10/UKRI-16102020-Concordat-for-Engaging-the-Public-with-Research.pdf

UKRI (2022). *Research and innovation for all: UKRI's public engagement strategy*. https://www.ukri.org/publications/ukri-public-engagement-strategy/research-and-innovation-for-all-ukris-public-engagement-strategy/

UKRI websites:
https://www.ukri.org/
https://www.ukri.org/wp-content/uploads/2020/10/UKRI-151020-EvaluationPracticalGuidelines.pdf

University of Bristol website: www.sheffield.ac.uk/rep/public-engagement/resources/toolkits/evaluation

University of Bristol. *Public engagement evaluation webpage*. https://www.bristol.ac.uk/media-library/sites/public-engagement/Evaluation%20Guide%20for%20Public%20Engagement%20(UOB).pdf

University of Cambridge. Research strategy office webpage: https://www.research-strategy.admin.cam.ac.uk/impact/routes-impact/public-engagement

Wellcome Trust website: https://wellcome.org/

(All websites accessed in April 2024)

ISSN (online) 2421-7158

CNR-IRCrES Working Papers

2024

N. 4 DAPIL – Digital archive of pilgrimage literature. Un archivio digitale per la letteratura medioevale di pellegrinaggio. Giuseppe Cuscunà.

N. 3/2024 Thesaurus e glossario ragionato della lingua della IA e della robotica. Thesaurus and reasoned glossary of AI and robotic language. Grazia Biorci.

N. 2/2024 Comprendere le trasformazioni di San Lorenzo, Roma. Un tentativo di ordine concettuale tra gentrificazione e politica urbana. Antonia Astore, Luca Tricarico.

N. 1/2024 How to measure the social acceptability of alternative environmental management solutions in wetlands and other ecosystems. Lisa Sella, Francesca Silvia Rota, Nicola Pollo.

2023

N. 5/2023 Laboratori creativi sperimentali a distanza per la valutazione. Isabella Maria Zoppi, Antonella Emina.

N. 4/2023 Eco-innovations and labor in the European automotive industry: an econometric study. Anna Novaresio.

N. 3/2023 Climate change adaptation planning: tools and methods for effective and sustainable decisions. Filippo Fraschini, Marco Pregnolato.

N. 2/2023 The effect of propensity to savings on rate of profit. Mario De Marchi.

N. 1/2023 UNESCO o non UNESCO? Quando il brand incentiva il turismo: il caso dei paesaggi vitivinicoli delle Langhe e del Monferrato. Orsola Borsani, Greta Falavigna.

2022

N. 5/2022 Logit statico, Logit dinamico e modelli hazard. Franco Varetto.

N. 4/2022 Evolution of Deep Learning from Turing machine to Deep Learning next generation. Greta Falavigna.

N. 3/2022 A Simulation Model of Technology Innovation of a Territory. Angelo Bonomi.

N. 2/2022 Technology and Environmental Policies. Angelo Bonomi.

N. 1/2022 Le donne marittime: fra stereotipi di genere, discriminazioni e scarse opportunità occupazionali. Barbara Bonciani, Silvia Peveri.

2021

N. 9/2021 Management of open access research infrastructures in large EU projects: the "CultureLabs" case. Andrea Orazio Spinello, Danilo Giglitto, Eleanor Lockley.

N. 8/2021 Francia-Italia: parole in campo. Intorno alla narrazione del Campionato del Mondo di calcio donne. Antonella Emina.

N. 7/2021 Covid-19 e rischio di insolvenza: il punto di vista del mercato azionario. Franco Varetto.

N. 6/2021 Institutional efficiency and budget constraints: a Directional Distance Function approach to lead a key policy reform. Greta Falavigna, Roberto Ippoliti.

N. 5/2021 Different waves and different policy interventions in 2020 Covid-19 in Italy: did they bring different results?. Mario Nosvelli.

N. 4/2001 On Search of a General Model of Technology Innovation. Angelo Bonomi.

N. 3/2021 Design and implementation of a web survey on the effects of evaluation on academic research. Andrea Orazio Spinello, Emanuela Reale, Antonio Zinilli.

N. 2/2021 An online survey on the effects of agile working in Italian Public Research Organisations. Serena Fabrizio, Valentina Lamonica, Andrea Orazio Spinello.

N. 1/2021 Technology Transfer Activities in Universities and Public Research Organizations: A Literature Overview. Ugo Finardi, Rolfo Secondo, Isabella Bianco.

2020

N. 12/2020 Unexpected loss multiperiodale e pricing del rischio di credito. Franco Varetto.

N. 11/2020 La ricerca in Nanotecnologie e Nanoscienze in Italia: spesa del settore pubblico e aree tematiche prevalenti. Ugo Finardi, Andrea Orazio Spinello.

N. 10/2020 Persistent fast growth and profitability. Lucio Morettini, Bianca Potì, Roberto Gabriele.

N. 9/2020 Binomio *Burnout* e *Mindfulness* nelle organizzazioni. Alcuni studi e scenari di applicazione. Oriana Ippoliti, Riccardo Briotti, Bianca Crocamo, Antonio Minopoli.

N. 8/2020 Innovation and communication of companies on Twitter before and during COVID-19 crisis. José N. Franco-Riquelme, Antonio Zinilli, Joaquín B. Ordieres-Meré and Emanuela Reale.

Numeri precedenti/Previous issues

This working paper presents some preliminary outputs from the PRIN 2022 project 'PLACES', which aims at investigating the factors influencing universities' community engagement across various levels – individual, institutional, and systemic. This work wants to provide an initial contribution to the study of systemic level, by offering an overview of the socio-economic and higher education frameworks – in Italy, France, and the United Kingdom –, that may support the development of universities' community engagement. An extensive data collection was conducted, utilizing socio-economic and R&D indicators, higher education system data, survey results on public attitudes towards science, complemented by a retrieval of information on national public engagement strategies, drivers and incentives. The findings are organized into *country fact sheets* which systematically report data and information gathered for each country, preparing for future research to be performed within the project. The analysis reveals that Italy, France, and the UK have distinct socio-economical and higher education environment that may influence their approach to public engagement. In Italy, public engagement is strongly driven by the evaluation exercises targeting universities. In the UK, significant investment in R&D and a supportive academic environment facilitate initiatives that could enhance connections between academia and society. In France, there is a lack of institutional recognition for public engagement, as intended in the other two countries.

CNR - Consiglio Nazionale delle Ricerche
IRCrES - Istituto di Ricerca sulla Crescita Economica Sostenibile