POLISH NATIONAL AGENCY FOR ACADEMIC EXCHANGE

ACADEMIC COOPERATION

BETWEEN POLAND AND IRELAND

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INTRODUCTION

The aim of this study is to present an overview of academic cooperation between Poland and Ireland. Academic cooperation is understood here in a broad context, both individual and institutional.

The study is exploratory and practical in nature and provides answers to the following questions:

- What is the volume of publications written in Polish-Irish co-authorship?
- What are the dominant subject areas in this field?
- How intense has this cooperation been over the years?
- Which higher education institutions in Poland cooperate most intensively with their Irish counterparts?
- Which Polish universities host the most students/researchers from Ireland?

The study is addressed to the academic community in the broad sense and the environment of higher education and science institutions, as well as to the creators of national international policy in the field of academic cooperation.

The study uses data from the following databases: SCOPUS[1] , OECD, UNESCO, and POLon.

Due to the small number of Irish students and employees studying or working at Polish universities, this study limits the presentation of data to that which is necessary to ensure the anonymity of these individuals.

This study is another in a series of analyses available on the NAWA website.

[1] Access to the SCOPUS database and SciVal tool under a national license provided by the Ministry of Science and Higher Education

1 POLAND AND IRELAND – BASIC DATA AND INFORMATION

Higher education in Ireland is mainly provided by universities, universities of technology, and institutes of technology, which award qualifications up to doctoral level. There are also specialist institutions for teacher training, art and design, and medicine. Admission to higher education is based on secondary school leaving examination results through the Central Applications Office[2] .

The Irish government's national priorities and key objectives for higher education are detailed in the System Performance Framework, developed by the Minister for Education and Skills, and stipulate that the system will be:

- flexible and provide institutions with diverse missions with the opportunity to highlight their unique contribution to the system,
- responsive, adapting to national priorities, institutional strategies, and progress toward individual goals,
- strategic, providing a mechanism for assessing the effectiveness of institutions in the context of strategic objectives and creating opportunities for analysis, learning, and recalibration of approach where necessary,
- evidence-based, setting tailored, measurable, and impact-focused goals to support institutional effectiveness and efficiency.

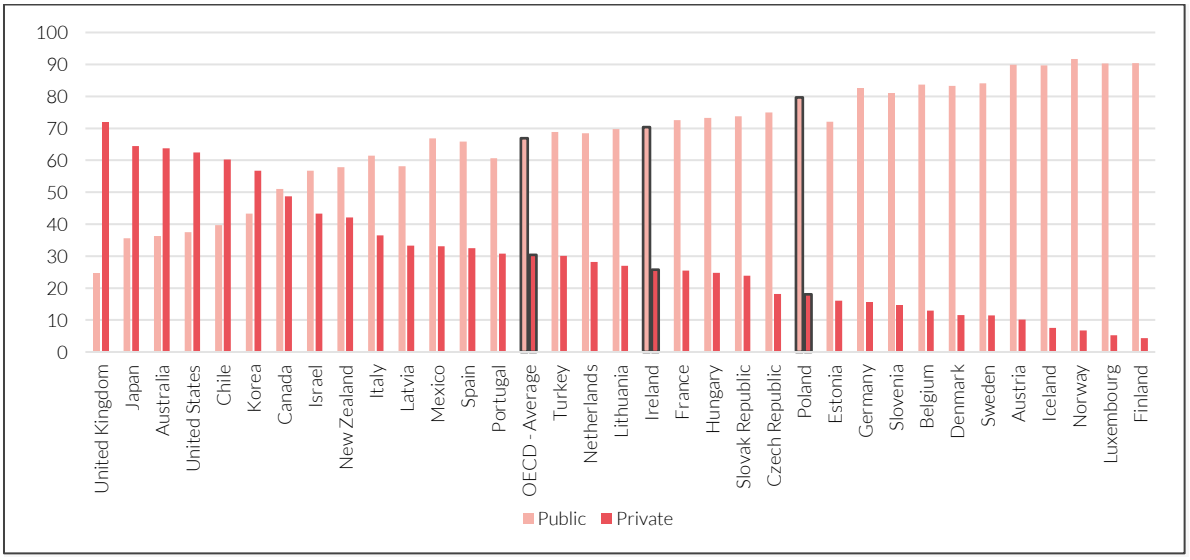
In order to monitor the functioning of the Performance Framework System, a framework matrix was developed consisting of four key pillars representing the areas of activity of the institution – teaching and learning, research and innovation, access and participation, and engagement[3] .

Below are graphs showing the percentage distribution of public and private expenditure on higher education, the share of people with higher education by age group, and the international mobility of students in OECD countries. All indicators presented refer to the average levels for OECD countries, including Ireland and Poland. Unfortunately, the latest available data is for 2020, which is particularly important in the case of financial data, an area in which events related to the COVID-19 pandemic and Russian aggression in Ukraine were of particular significance.

[2] OECD (2020), Education policy outlook in Ireland, OECD Education Policy Perspectives, No. 18, OECD Publishing, Paris. https://doi.org/10.1787/978e377b-en

[3] See: https://hea.ie/statistics/data-for-download-and-visualisations/institutes-performance/

Graph 1 Expenditure on tertiary education (public and private) as a % of total expenditure for this purpose (2020)

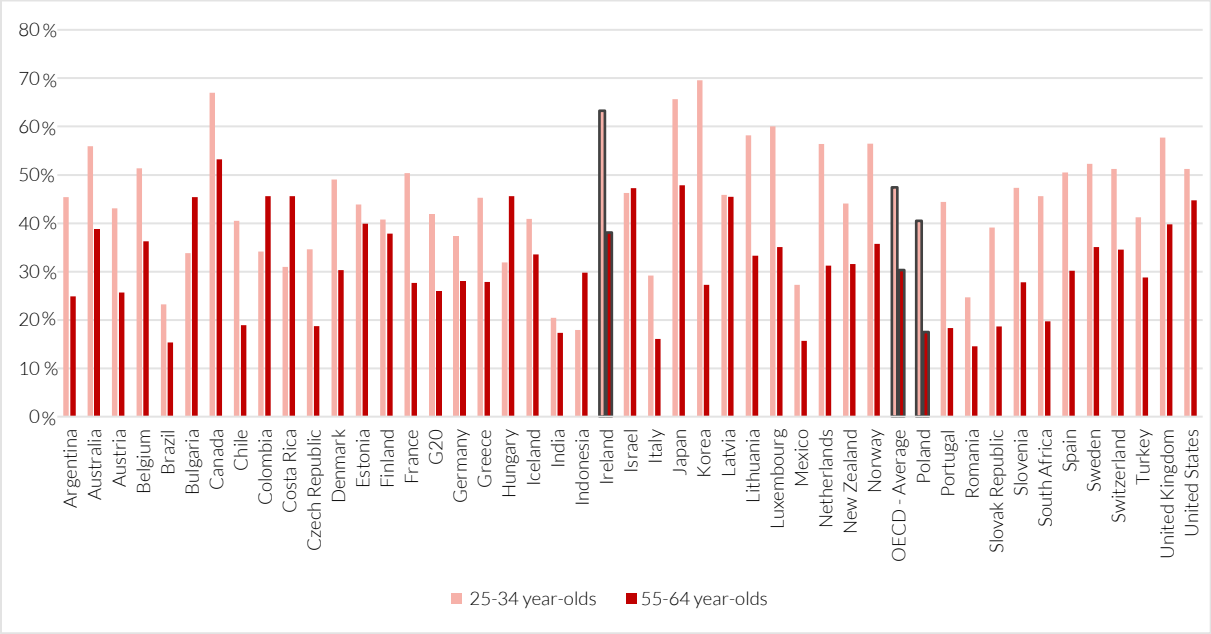


Source: OECD (2024), Spending on tertiary education (indicator). doi: 10.1787/a3523185-en (Accessed on June 10, 2025)

The above chart presents a measure of public and private expenditure on tertiary education as a percentage of total expenditure on education. According to the OECD, expenditure on tertiary education is defined as total expenditure on the highest level of education, including private expenditure on schools, universities, and other private institutions providing or supporting educational services. This expenditure is measured as a percentage of total expenditure on education. At the tertiary level, educational institutions in OECD countries are mainly publicly funded, although there are significant and growing levels of private funding. At this level, contributions to the costs of education by individuals and other private entities are increasingly seen as an effective way to ensure that students have access to funding regardless of their economic status. "Households" refer to students and their families. "Other private entities" include private companies and non-profit organizations such as religious organizations, charities, and business and employee associations. Expenditures by private companies on vocational training for pupils and students are also taken into account, along with expenditures on research and development by educational institutions.

In OECD countries, higher education institutions are mainly funded by public funds, although there is a significant and growing level of funding from households and other private entities (NGOs, unions, associations, foundations, etc.). Low levels of public spending on higher education necessitate higher levels of private funding. In OECD countries, the average level of public funding is 67%, while private funding accounts for 30%. Against this background, the proportions of funding sources in Norway, where public expenditure is 92%, and Finland, Luxembourg, Austria, and Iceland (90% each) are noteworthy. In Poland, public expenditure on higher education is 80%, and in Ireland, 70%. At the other end of the spectrum are Japan and Australia (36% each), the US (38%), and Chile (40%).

Graph 2 Percentage of people with higher education by age group (2022)

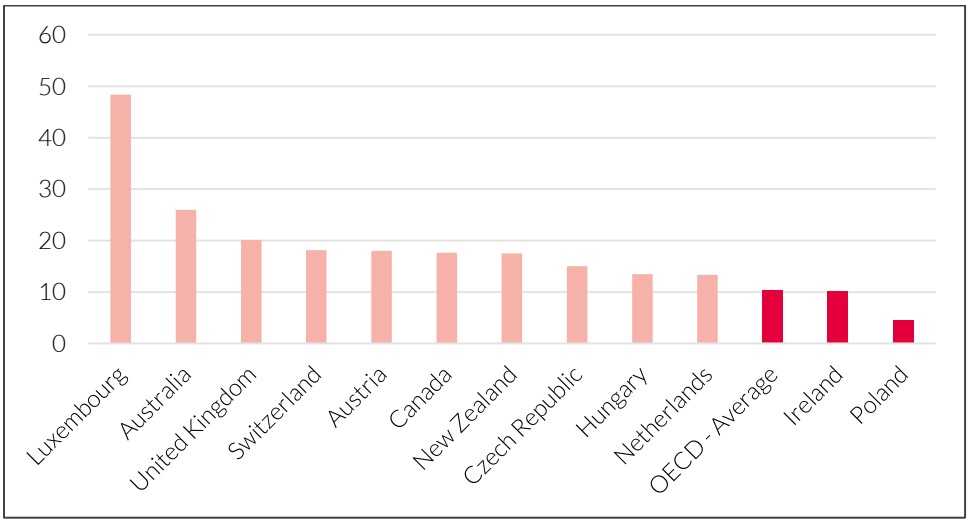


Source: OECD (2024), Population with tertiary education (indicator). doi: 10.1787/0b8f90e9-en (Accessed on June 10, 2025)

The population with tertiary education is defined by the OECD as those who have completed this highest level of education, by age group. This includes both theoretical programs leading to advanced research or highly skilled professions, such as medicine, and more vocational programs leading to the labor market. This is measured by the percentage of the population of the same age who hold a higher education diploma.

In OECD countries, the average enrollment rate in the younger age group is 47% and in the older age group 30%. In countries such as Korea, Canada, Japan, Ireland, and Luxembourg, the percentage of people with higher education in the 25-34 age group is at least 60%, in Poland 40%, and in Ireland 63%. In the older age group, every second Canadian (53%) and Japanese (48%) has completed higher education. In Poland, only 18% of people between 55 and 64 have completed higher education, and in Ireland, 38%.

Graph 3 Student mobility indicator (2020)



Source: OECD (2024), "International student mobility" (indicator), https://www.oecd.org/en/data/indicators/international-student-mobility.html (Accessed on June 10, 2025)

This indicator shows the number of foreign higher education students admitted as a percentage of all students enrolled in the host country. Foreign students are those who have previously received education in another country and are not residents of the country where they are currently studying. While the average percentage of foreign students in OECD countries is 10% (including Ireland), in Poland it exceeds 4%. Among the OECD countries, Luxembourg has the highest number of foreign students (48%).

According to data from the POLon system for the 2023/2024 academic year, foreign students studying in Poland are predominantly citizens of Ukraine (47%), Belarus (11%), and Turkey (5%). Irish students constitute a group of several hundred students (764 people). Foreigners most often study management (16%), computer science (13%), and medicine (6%). Irish students at Polish universities are most numerous in veterinary medicine (356 people) and medicine (342 people). Three-quarters of this group study at three universities, namely the Warsaw University of Life Sciences, the Nicolaus Copernicus University in Toruń, and the Wrocław University of Environmental and Life Sciences.

According to data published by The Higher Education Authority, in the 2023/2024 academic year, the largest group of newly admitted foreigners to Irish universities were citizens of India (17%), the USA (14%), and China (11%). Less than 1% of newly admitted foreigners were from Poland - one in five Poles enrolled at Trinity College Dublin, followed by the Technological University Dublin (12%) and University College Cork and University College Dublin (11% each).

Foreign academic teachers constitute less than 3% of the total number of teachers in Poland. Among foreign employees who conduct scientific research in various fields and are employed as academic teachers, the largest group are citizens of Ukraine (26%), India, and Italy (8% each). Most of them hold a doctoral degree (64%) and represent the fields of science and natural sciences (31%), social sciences (23%), and engineering and technical sciences (21%). The few scientists from Ireland working in Poland (18 people) are mainly in the humanities (8 people).

Table1 Comparison of the number of publications by Polish and Irish scientists (2017-2024[4])

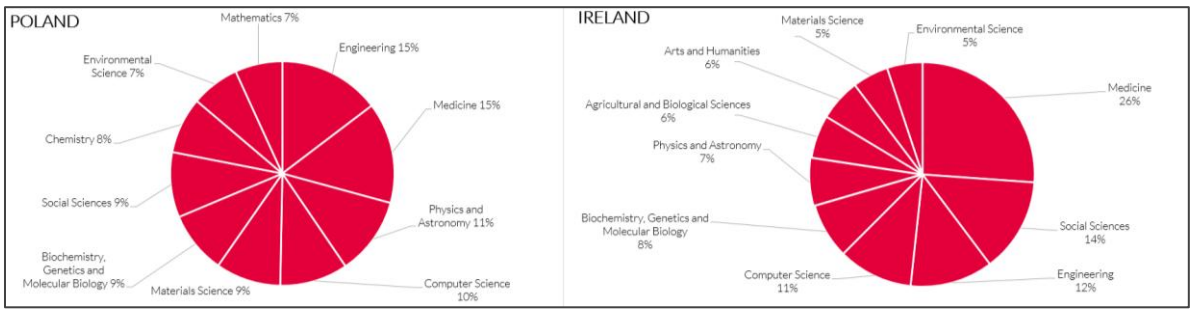
Year of publication	Number of publications	
	Poland	Ireland
2024	63,272	22,597
2023	61,309	21,992
2022	62,101	21,521
2021	65,418	22,081
2020	61,201	19,481
2019	57,430	17,658
2018	53,605	16,962
2017	50,712	16,289
Total	475,048	158,581

Source: SCOPUS-SciVal [accessed on April 16, 2024)

[4] The data for 2024 are updated on an ongoing basis, so it is to be expected that in the second half of 2025 there will be increases in both the number of publications and their citations.

The pool of indexed publications for 2017-2024 by scientists affiliated with Polish institutions is almost three times higher than that of Irish institutions. However, in the analyzed period, the average annual increase in the number of publications in Poland is 3%, and in Ireland - 5%.

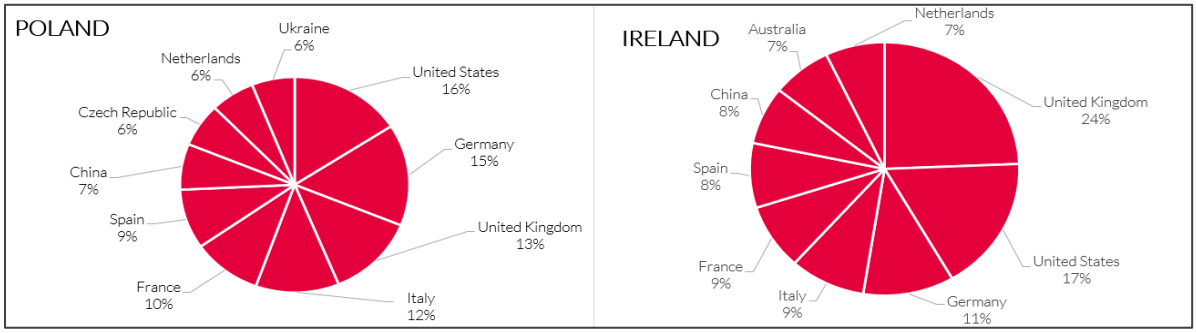
Graph 4 Publications by Polish and Irish scientists by area of knowledge (%) – comparison



Source: SCOPUS-SciVal [accessed on May 16, 2025)

The chart above shows the subject areas of publications in which at least one author indicated a Polish or Irish affiliation. Publications by Polish scientists are most often in the fields of engineering and medical sciences (15% each), physics and astronomy (11%), and computer science (10%). Irish authors, on the other hand, mainly publish in the fields of medicine (26%), social sciences (14%), and engineering (12%).

Graph 5 chart Countries of origin of co-authors of publications by Polish and Irish scientists – comparison (%)



Source: SCOPUS-SciVal [accessed on May 16, 2025)

Polish and Irish scientists most often publish with their American, German, and British counterparts. The list of the ten most frequently indicated countries as co-authors' affiliations is very similar in both cases. Polish scientists co-author with Irish scientists in 3% of cases, which places Poland in 22nd place among other countries (a total of 5,138 Polish-Irish publications were produced).

2 POLISH-IRISH SCIENTIFIC COOPERATION (2017-2024)

This section analyzes the publication cooperation of scientists affiliated with Polish and Irish scientific institutions. Only those publications were taken into account where at least one author indicated affiliation with both the Polish and Irish academic communities.

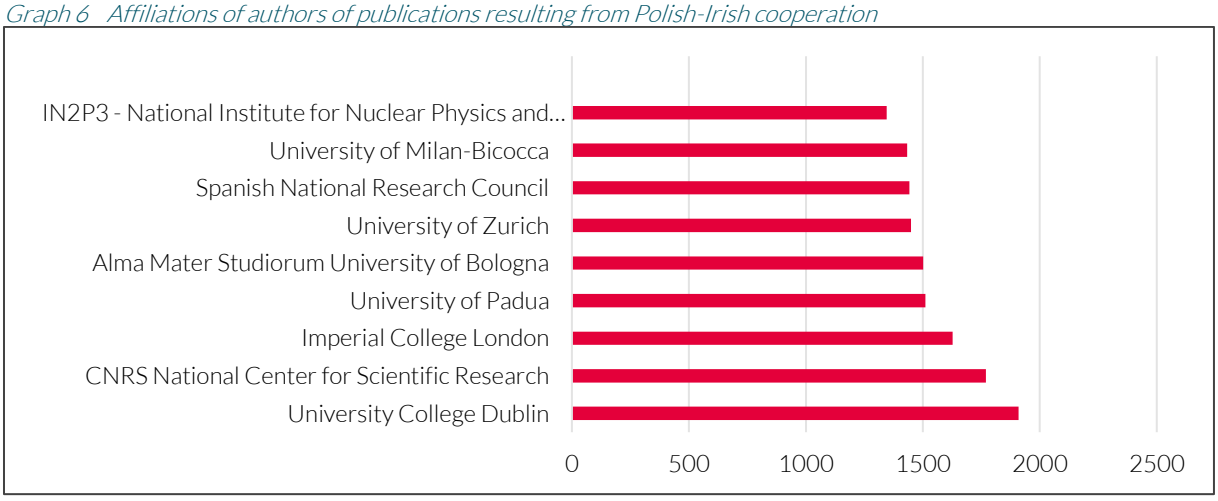
Table 2 table Joint Polish-Irish publications in the SCOPUS database

Year of publication	Number of publications
2024	752
2023	657
2022	649
2021	756
2020	614
2019	564
2018	636
2017	510
Total	5,138

Source: SCOPUS-SciVal [accessed on May 16, 2025)

The largest year-on-year change in the number of joint publications occurred in 2018 and 2021. The final result for 2024 also looks promising, as by mid-2025, when not all publications had yet been registered in the SCOPUS database, we observed a 14% increase compared to 2023.

Graph 6 Affiliations of authors of publications resulting from Polish-Irish cooperation



Source: SCOPUS-SciVal [accessed on April 16, 2025)

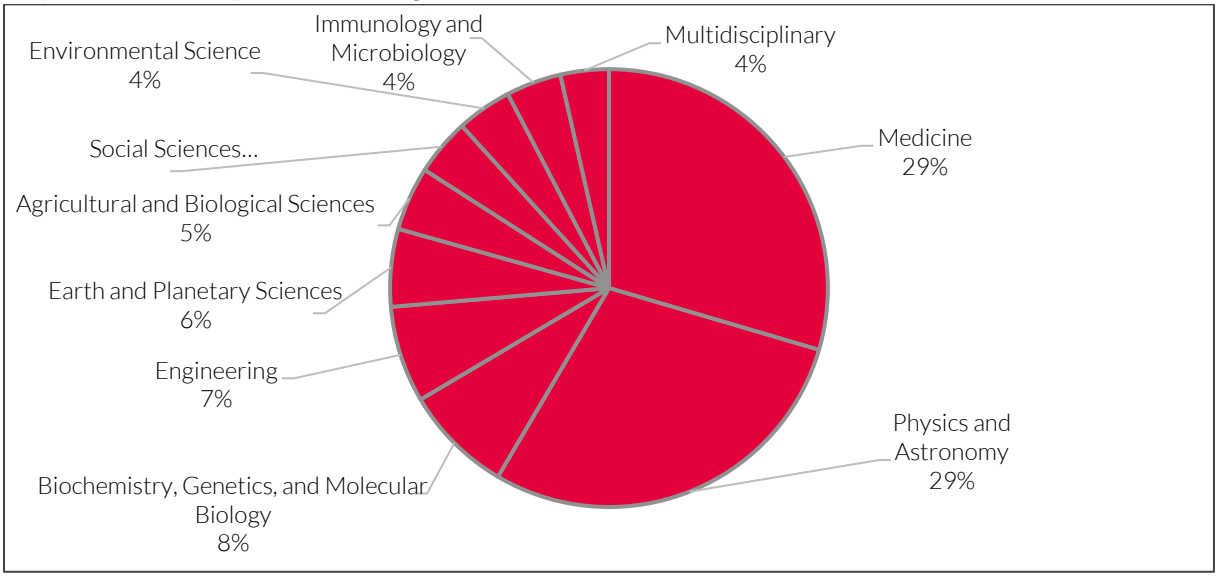
The most common affiliations of co-authors of publications are Western European institutions (Irish, British, Italian, or French), as reflected in the Graph below.

Graph 7 Countries of origin of co-authors of Polish-Irish publications (excluding Poland and Ireland) (%)

Source: SCOPUS-SciVal [accessed on April 16, 2025)

Apart from authors affiliated with Polish and Irish institutions, the remaining co-authors come mainly from Western European countries and the US.

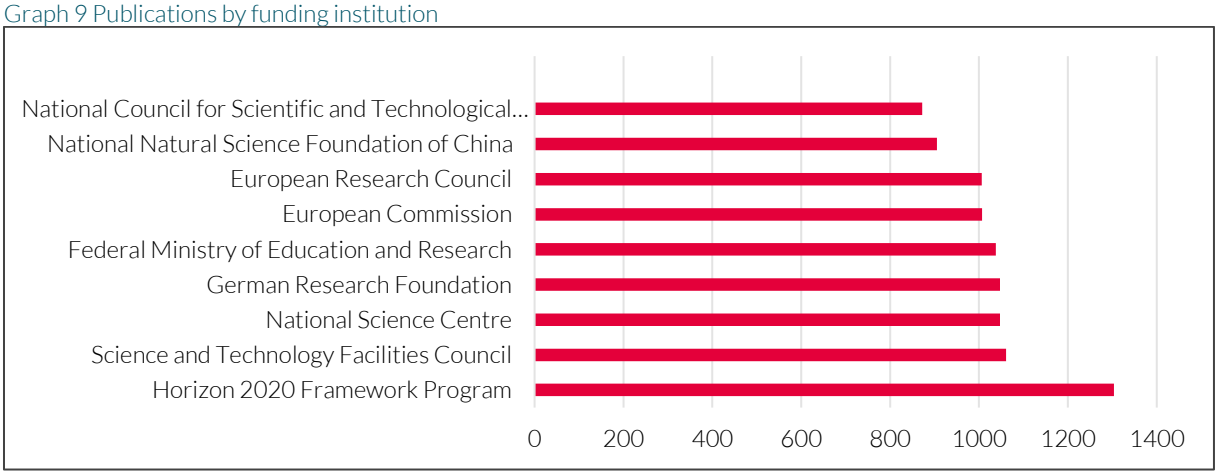
Graph 8 Publications by field of knowledge (%)



Source: SCOPUS-SciVal [accessed on April 22, 2025)

The main areas of scientific cooperation resulting in joint publications are medicine and physics with astronomy (29% each). These are areas strongly represented by Polish co-authors (see Graph 4).

Graph 9 Publications by funding institution



Source: SCOPUS-SciVal [accessed on April 22, 2025)

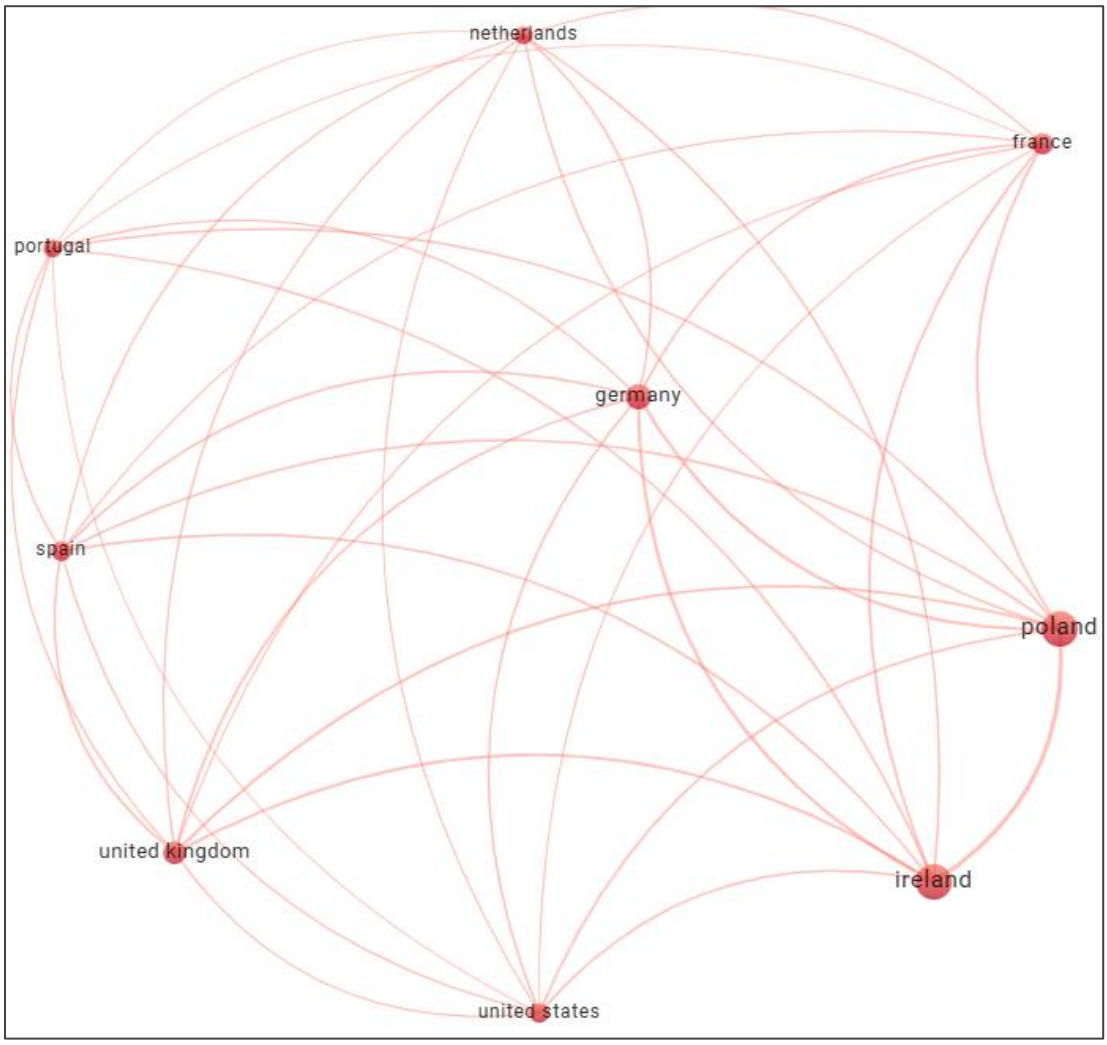
Scientific publications are produced thanks to co-financing by institutions established to finance scientific projects, such as the National Science Centre, which co-financed every fifth publication. The National Agency for Academic Exchange contributed to the creation of 23 publications.

3 NAWA'S CONTRIBUTION TO POLISH-IRISH SCIENTIFIC COOPERATION

This part of the analysis aims to show not only the impact of NAWA funding on publications where at least one author is affiliated with an Irish and Polish institution, but also NAWA's global contribution to scientific publications.

A bibliometric analysis based on the SCOPUS database shows that the first publications in which NAWA had a financial stake appeared in 2019. Since then, a total of 23 have been produced.

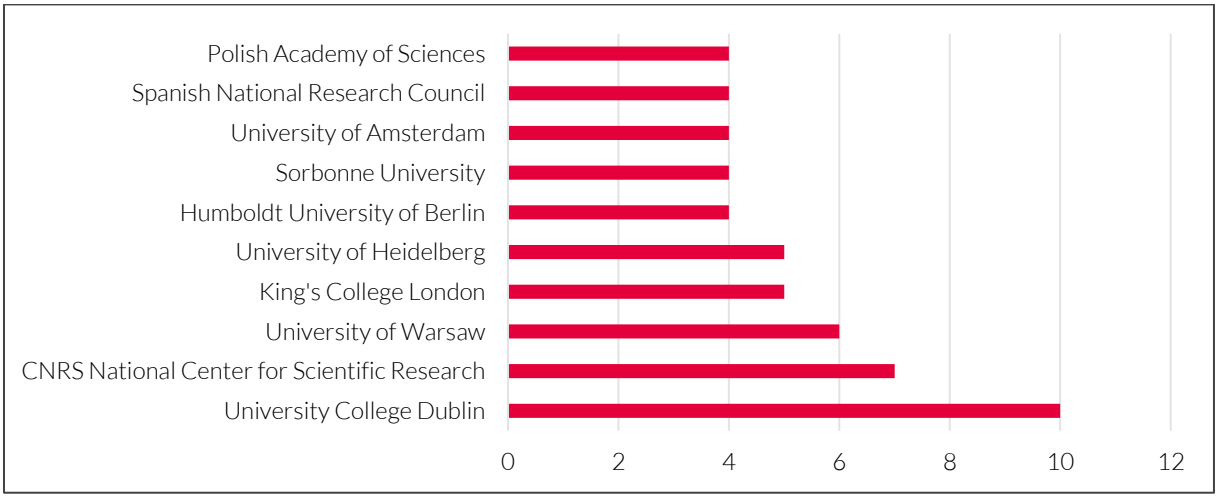
Map 1 Map of connections between the countries of origin of co-authors of Polish-Irish publications co-fiunded by NAWA



Source: own study based on SCOPUS/SciVal [accessed on April 19, 2025]; visualization using the VOSviewer tool

The above map shows that cooperation between scientists from two countries has led to cooperation with seven more, which in turn has resulted in over 36 connections between these countries.

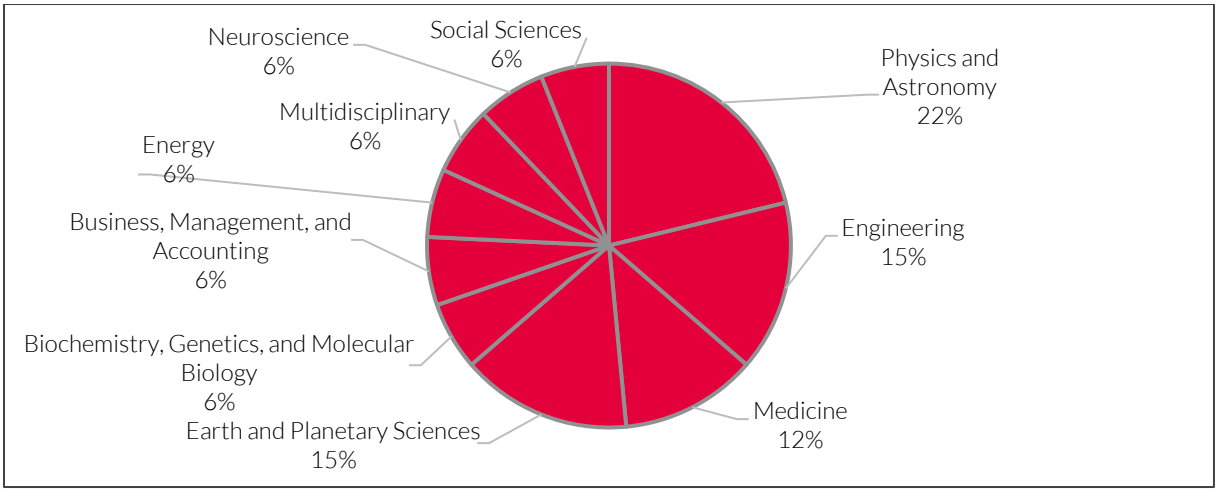
Graph 10 Affiliations of authors of publications co-funded by NAWA



Source: SCOPUS-SciVal [accessed on April 16, 2025)

The four institutions shown above (see Map 2) are obviously not the only ones to which the co-authors of publications co-financed by NAWA are affiliated.

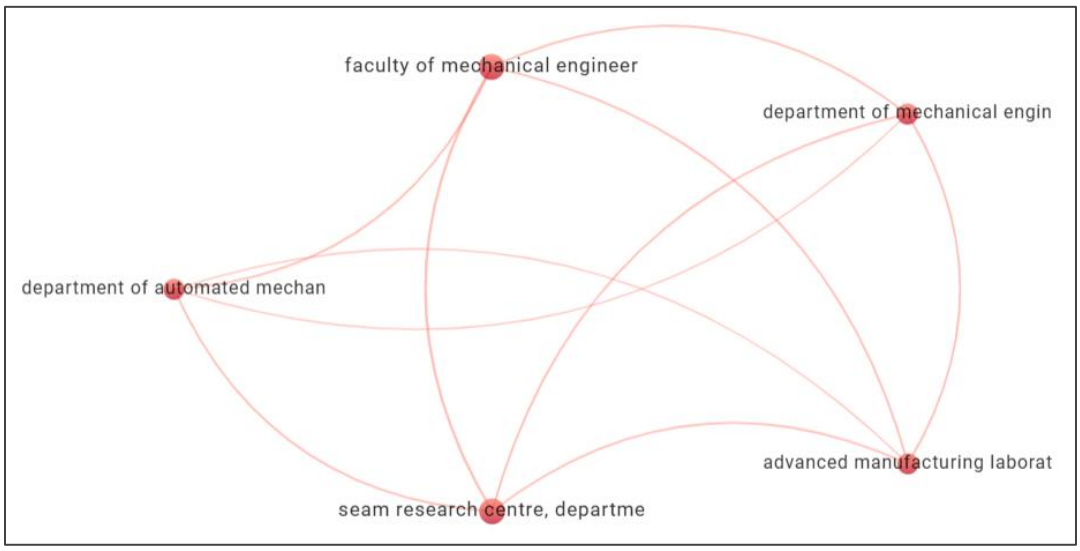
Chart 11 Publications co-funded by NAWA by subject area



Source: SCOPUS-SciVal [accessed on: 22.04.2025)

Every fifth publication co-financed by NAWA concerned the field of physics and astronomy. Other significant areas of cooperation were engineering and earth sciences (15% each).

Map 2 Map of connections between institutions affiliated with co-authors of Polish-Irish publications co-funded by NAWA



Source: own study based on SCOPUS/SciVal [accessed on April 19, 2025]; visualization using the VOSviewer tool

If we reduce the 23 publications, at least one author of which received funding from NAWA, to the number of institutions to which the co-authors are affiliated, five stand out: Institute of Infrastructure, Research and Management Technology (Advanced Manufacturing Laboratory, India), South Ural State University (Department of Automation and Mechanics, Russian Federation), Sinop University (Faculty of Mechanical Engineering, Turkey), Opole University of Technology (Faculty of Mechanical Engineering), Waterford Institute of Technology (Faculty of Engineering Technology, Ireland).

The researchers affiliated with these institutions and their publications form a single thematic area related to engineering (see Graph 4, which shows that in both countries this area is strongly represented in the subject matter of indexed publications, and Graph 11 – 15% of publications co-financed by NAWA concerned this area).

CONCLUSIONS

The above analysis leads to the following conclusions:

1) in Irish society, school enrollment rates in both the younger and older cohorts are higher than in Poland (see Graph 2),
2) students from Ireland most often choose veterinary medicine and medicine at Polish universities,
3) academic teachers from Ireland working at Polish universities are most often employed in the humanities,
4) the rate of change in the number of publications co-authored by researchers affiliated with Irish institutions is higher than in the case of Polish institutions (see Table 1),
5) the area of Polish-Irish publishing cooperation is engineering (see Graph 4).