

Bibliometric analysis of HRB-supported publications 2000-12

Summary findings:

- Some 3,382 HRB-supported publications in the 2000–12 period were matched to the *Web of Knowledge*SM; of these publications, 3,226 were papers used in citation analyses.
- HRB-supported papers have grown rapidly in volume terms, subject to important caveats set out in Section **Error! Reference source not found.** in terms of the composition of the HRB publications file. Notwithstanding these caveats, the HRB has undoubtedly made an increasing contribution to Irish clinical/health/pre-clinical and biological sciences research, as well as to the wider Irish research base.
- The majority of HRB-supported papers have been published in high-impact journals, and over half have been published in the world's top 10% of journals as measured by journal impact factor.
- There has been a high uptake and use of HRB-supported papers. Very few papers prior to 2010 are uncited. One-fifth (18.9%) of HRB-supported papers are in the world's top 10% as measured by citation impact.
- The citation impact of HRB-supported papers is very high (1.74, 2000–12) and increasing, approaching twice the world average (1.84, 2008–12). This outperforms benchmarks for similar Irish and UK research in clinical/health/pre-clinical and biological sciences research.
- The Impact Profile[®] of HRB-supported papers outperforms benchmarks for similar Irish clinical/health/pre-clinical and biological sciences research.
- In terms of HRB strategic pillar areas, more than two-thirds of HRB-supported papers were in the Biomedical category; around one-fifth were Clinical and more than one-tenth were focused on Population Health and Health Services. The latter two HRB strategic pillar areas have increased as a share of HRB-supported papers, reflecting HRB's strategy to move increasingly into patient-oriented healthcare research.
- HRB-supported Clinical papers are cited over twice the world average (2.20). HRB-supported Biomedical papers are very well cited (1.67). Citation impact in these fields is driven by internationally co-authored papers (Section **Error! Reference source not found.**). HRB-supported Population Health and Health Services papers are well cited (1.40) and citation impact is increasing.
- Citation impact is particularly high in certain HRB funding schemes, particularly for schemes under the broad headings of Infrastructure and Special Initiatives, but also for Cancer Consortium-related papers (notably the ICORG Cancer Clinical Trials Network). Funding schemes related to career development (such as the Clinician Scientist Awards, fellowships and PhD training programmes) are also cited more than average.
- With the exception of two fields (Cell Biology and Endocrinology & Metabolism), HRB-supported papers by its top 20 *Web of Science*SM journal categories by volume are very well cited relative to the world average and relative to benchmarks for similar Irish clinical/health/pre-clinical and biological sciences research. The citation impact of HRB-supported papers in Oncology, Immunology, Genetics & Heredity and Psychiatry is particularly high.
- Around two-fifths of HRB-supported papers have been internationally (40.8%) and domestically (40.0%) co-authored. This has risen from around one-third of HRB-supported papers (33.8% and 34.7%, respectively) to over two-fifths (43.8% and 42.1%). Internationally co-authored HRB-supported papers are cited over twice the world average (2.28) and citation impact is rising.
- The citation impact of internationally co-authored papers in the HRB Clinical strategic pillar area is over three times the world average (3.29) compared to all papers in this strategic pillar area (2.20). In the HRB Biomedical strategic pillar area, internationally co-authored papers have a citation impact over twice the world average (2.11) compared to all papers in this strategic pillar area (1.67). The

citation impact gain of internationally co-authored papers compared to all papers in the HRB Population Health and Health Services research strategic pillar area is more negligible (1.51 compared to 1.40, respectively). There is little difference in citation impact between the three HRB strategic pillar areas that were authored purely at the national level.

- Researchers from the USA and the UK have been the most frequent international co-authors of HRB-supported papers (43.6% and 43.1% of internationally co-authored papers, respectively) which suggests a strong Anglophone dimension to international co-authorship along with partners from countries such as Australia and Canada (10.3% and 8.1%, respectively). European partners also feature, particularly countries such as Germany (12.6%), Italy (8.7%) and France (8.7%). These partner countries are mapped in Section **Error! Reference source not found.**.
- The Irish academic sector has produced around 90% of HRB-supported papers and the Irish health sector has produced around one-third. These proportions have been more or less constant over time, although there are suggestions that the Irish health sector is producing a greater proportion of HRB-supported papers (Section **Error! Reference source not found.**).

Explanation of terms used above:

Papers:

Papers refer exclusively to substantive journal articles, reviews and peer-reviewed proceedings papers, and it excludes editorials, meeting abstracts or other types of non-peer reviewed publication.

Citations:

The citation count is the number of times that a citation has been recorded for a given paper since it was published.

Citation impact:

‘Citations per paper’ is an index of academic or research impact (as compared with economic or social impact). It is calculated by dividing the sum of citations by the total number of papers in any given dataset. Impact can be calculated for papers within a specific research field such as clinical neurology, for a specific institution or group of institutions, or for a specific country. Citation count declines in the most recent years of any time period, as papers have had less time to accumulate citations (papers published in 2007 will typically have more citations than papers published in 2012).

Journal impact factor (JIF):

The average number of citations per paper can be used to indicate the impact and/or importance of a journal. The impact factor for a journal (JIF) is calculated using data for a three-year period. For example, the 2012 impact factor for a given journal is calculated as the average number of times that articles from the journal published in the past two years (2010 and 2011) were cited in 2012. Thus, a JIF of 2.0 means that, on average, the articles published in 2010 or 2011 have been cited twice.

Impact profile:

An Impact Profile[®] enables an examination and analysis of the strengths and weaknesses of published outputs relative to world average and relative to a reference profile. This provides much more information about the basis and structure of research performance than conventionally reported averages in citation indices.