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Focus on Germany: quantity and quality

Research Trends Editorial Board

Country trends

Focus on Germany: quantity and quality

In the previous issue of Research Trends, we presented citation and article data on ten countries whose researchers produce a particularly high number of journal articles. In this issue, we have extended this analysis to eight additional countries including one of the oldest centers for journal literature, Germany. Ulrich's Periodical Directory lists the *Goettingische Gelehrte Anzeigen* as the first German journal, founded in 1739.

On average, Germany's publication output has been growing at a cumulative rate of 5% since 2002, as shown in figure 1. The abundance of quality German journals in areas such as Chemistry, Engineering, Life Sciences, Medicine and Physics was reason enough to analyze the recent patterns for publications in Germany.

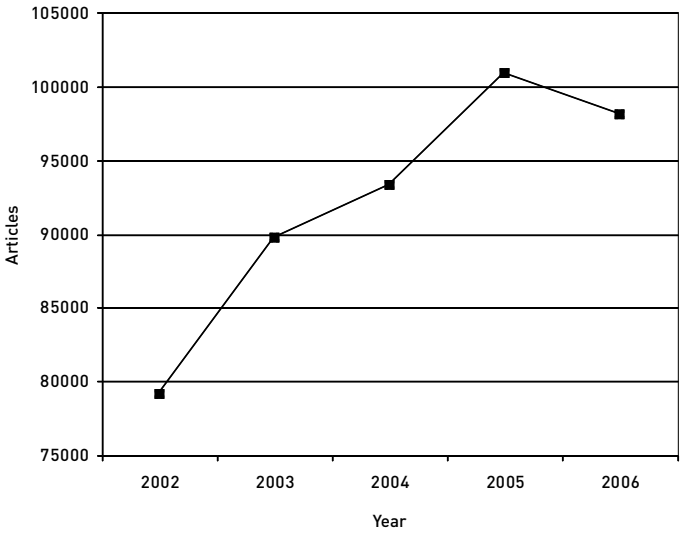

Figure 1 – Number of articles published by German researchers 2002-2006. Source: Scopus

Methodology

An analysis was performed in Scopus to identify the top 1% and 5% of cited papers per subject area. Table 1 denotes the number of papers published in Germany for the period 2002-2006. These counts were then separated into 27 subject categories (as specified in Scopus.com), with table 1 showing the top ten most prolific fields. For each of these years and for each subject category, the number of papers that forms a part of the top 1% and 5% of highly cited papers was derived.

Subject Area	Publications	Article #	1% Threshold	Article #	5% Threshold
Agricultural and Biological Sciences	6705	85	12	415	6
Biochemistry, Genetics and Molecular Biology	16287	175	21	918	10
Chemistry	8832	92	16	529	8
Computer Science	4852	62	6	244	3
Earth and Planetary Sciences	5694	58	20	339	9
Engineering	10282	139	6	549	3
Materials Science	7484	81	11	506	5
Mathematics	5702	82	5	304	3
Medicine	28124	289	19	1512	8
Physics and Astronomy	17686	195	11	969	5

Table 1 – A snapshot of the ten subject categories in Germany with the highest number of publications from 2002-2006. Medicine was the most prolific. Source: Scopus

The German language continues to be of major importance to many of these fields and to local research within German-speaking countries. Indeed, in 2006 Scopus identified almost 12,000 articles published in German, accounting for 11% of Germany's total article output. It is interesting to note that this accounts for only 32% of the total article output in German, indicating German's diversity as a research language throughout the world.

Continued on page 5

Continued from page 4

Prize winners

The influence of Germany on science was clear to see this year, with the announcement of two Nobel Prize-winning German researchers. Gerhard Ertl of the Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin and Honorary Professor at Freie Universität Berlin and Technische Universität Berlin, won the Nobel Prize in Chemistry for his studies of chemical processes on solid surfaces. Peter Grünberg shared the Nobel Prize in Physics for the discovery of Giant Magnetoresistance, which resulted in a breakthrough in gigabyte hard disk drives.

In addition, Olaf Hohmeyer, University of Flensberg, is Vice Chair of the Working Group III of the Intergovernmental Panel on Climate Change. This Group was awarded the 2007 Nobel Peace Prize for its efforts to spread awareness of man-made climate change and lay the foundations for counteracting it.

To see the analysis for the eight countries mentioned at the start of this article (Argentina, Brazil, Chile, Columbia, Mexico, Poland, Turkey and Egypt), please **click here**

To visit the first issue of Research Trends and see the original ten-country analysis, **click here**.

Expert opinion

Scopus data ranks the world

Ben Sowter

In an editorial in *Current Science*, P. Balaram observed that "rankings and ratings enter every sphere of human activity" *(1)* and even went so far as to compare institutional rankings to a "beauty contest". With the publication of The THES-QS World University Rankings on November 9, the winners of the 2007 beauty contest were announced.

The Times Higher Education Supplement (THES), a London-based weekly newspaper that reports specifically on higher education issues, has published its World University Rankings annually since 2004. It works closely with Quacquarelli Symonds (QS), a leading independent network for higher education and related careers that acts as its research and data analysis arm.

Switch to Scopus

For the first time, the data used to compile the World University Rankings have come from Scopus. "As our own methodology developed and improved, we felt we needed a more comprehensive data source," explains Ben Sowter, QS' Head of Research. "We chose Scopus for several reasons: the quality of the data, which will provide enhanced transparency and clarity for the rankings; strong journal representation outside the United States; and more non-English content than other databases. We believe that the strong data found in Scopus, combined with other enhancements we've made to our methodology, will help stabilize rankings, making them more effective for tracking year-on-year performance. They will also result in a more robust and balanced measure of comparative international university quality."

Assessment indicators

Institutions are assessed on six indicators that carry different weightings. These indicators are based on what THES considers the template of a world-class university:

- Research quality (peer review 40%, citations per faculty 20%)
- Graduate employability (recruiter review 10%)
- International outlook (international faculty 5%, international students 5%)
- Teaching quality (student faculty 20%)

In addition to the switch to Scopus for citation data, the key enhancements to QS' methodology are:

- Z-score aggregation of indicators to generate overall scores
- Peer reviewers prevented from promoting their own university
- Consistent usage of Full-time Equivalent (FTE) data for all personnel-related data

For more information on the effect these changes will have on the data and thus the rankings, please **click here**.

References:

(1) Balaram, P. (2004) "The Shanghai Rankings", *Current Science*, Vol. 86, No. 10 from the **World Wide Web**