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German Funding Ranking as a Tool for Self-Management

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The German research system is undergoing a fundamental transformation, which is nowhere more evident than in the increasing specialization and structural differentiation of the university landscape. This transition is being played out against the backdrop of a competitive system that requires universities to act increasingly as autonomous institutions. Competitive project funding by the Deutsche Forschungsgemeinschaft (DFG), the European Union, and the federal and state governments—especially in connection with the German Excellence Initiative—as well as other funding sources have driven and sustained this process in an almost catalytic fashion.

The DFG is an association under private law, funded by the German government and various federal states. DFG membership consists of research universities and a number of nonuniversity research institutions. With an annual budget of about €2.2

billion (2009) the DFG funds more than 20,000 projects a year within all disciplines—mainly conducted at universities but often together with partners from nonuniversity research institutions in Germany and abroad.

To support its member universities, identify their strengths, and sharpen their research profiles in an increasingly competitive process, the DFG has established a regular information service since 1997, the Funding Ranking. This service is mainly funded by the DFG and financially supported by the German Stifterverband (Donors' Association for the Promotion of Sciences and Humanities), being a promoter of the continuous growth and development of the Funding Ranking.

The Funding Ranking intends to provide comprehensive and differentiated information about the research priorities of German higher education institutions, in terms of publicly funded research given to certain disciplines or research fields. To be published, a survey conducted by the Institute for Research Information and Quality Assurance and commissioned by the DFG shows that within five years 98 percent of all professors at German universities apply for third-party funding at the DFG (74%) or other funders (24%). Thus, the indicators of the DFG Funding Ranking mainly based on statistics measuring the amount of money received from different funders, map the research activities in Germany in a quite comprehensive way.

FUNDING DATA AND RESEARCH PERFORMANCE

The first edition of the Funding Ranking, published in 1997, mainly answered two questions: how much money did every single university in Germany receive from the DFG? and how does this sum split up on the different disciplines located at one place?

Today the Funding Ranking covers data on approximately 90 percent of funds distributed by public bodies (mainly DFG, the German government, and the European Union). Donated on a competitive basis, these funds are thought to be good indicators for qualitative highly ranked research. Beside monetary indicators, the Funding Ranking also uses indicators that count the number of heads of excellent scientists—such as, research visits by domestic or foreign scientists funded by the European Research Council, Alexander von Humboldt Stiftung, or German Academic Exchange Service or scientists who act as reviewers for the DFG.

Publication statistics are usually based on data that comprise articles in international journals. In many disciplines, particularly life sciences and the natural sciences, such journal articles are the main form of publication, and the respective indicators provide a good impression of the research activity. In the humanities and some fields within the engineering sciences, however, the major publication outputs consist of books, chapters, or articles in proceedings. Moreover, researchers in some of these disciplines are used to publish in their national languages. Therefore, publication indicators based on data that mainly cover articles in English-language journals cannot adequately reflect research performance in these disciplines. A further problem results from the (considerable) time lags until an article gets published and is enlisted in the data base. Even more time passes until the first citation. Thus, citation analyses are of limited value if one aims at a recent mapping of current research performance.

In contrast, the successful acquisition of external research funding is an internationally acknowledged performance indicator. The value of fund raising today is demonstrated in the above-mentioned survey: Applying for research funds nowadays is

"everyday business," not only in Germany but worldwide. Funding data provides a broad and up-to-date impression of the research activity at higher education institutions (as well as other research institutions).

DIFFERENTIATED RESEARCH PROFILES

The Funding Ranking differentiates not only by funding sources but also by the use of funds in various subject-specific and thematic research areas. It is based on a subject classification system including over 200 subjects assigned to 48 disciplinary groups and 14 research areas. For the R&D–project funding by the German government as well as for the funding within the European Union's Framework Programs for Research and Technological Development, the Funding Ranking uses the thematic program classifications of these funding bodies. This allows describing the subject-specific profiles of the institutions in a differentiated manner. For example, it is possible to identify the medium-sized University of Bremen not only as strong in natural and engineering sciences. The differentiated subject classification helps to identify small disciplines that define the university's profile. This focus extends beyond the prior idea of the Funding Ranking to inform about "winners" or "losers" in the competition for additional money given by research funding organizations.

INNOVATIVE VISUALIZATION TECHNIQUES

Beside the "traditional" ranking approach in the form of ranking lists the main step forward of the DFG Funding Ranking includes a broad set of innovative visualization techniques. They encompass the so-called subject maps that indicate which subjects

shape the profile of an institution. These maps contribute to benchmarking purposes because they show which research institutions have similar profiles and are thus likely to be competitors or even potential partners for joint research projects.

Mapping techniques are also used to visualize the collaborative activities between various research institutions. These visualizations, for example, show that Berlin is a vivid and collaborative place in the humanities and the life sciences, whereas in the field of engineering sciences the region around Aachen marks the "hottest place." The figures show which higher education institutions cooperate intensively with nonuniversity research institutions (e.g., from the Max Planck Society or the Helmholtz Association) and provide information on the success in overcoming institutional barriers often (and falsely) perceived to be fixed.

A Holistic Look at the Research System

The explicit consideration of nonuniversity research is another unique feature of the Funding Ranking. International ranking studies focused exclusively on higher education institutions do not sufficiently account for national specifics of research systems. This approach is demonstrated in the Funding Ranking by an analysis of the participation in the European Union Framework Program in a country comparison. The analysis shows that in Germany, the three groups of recipients (industry and commercial companies, higher education institutions, and nonuniversity research institutions) were allocated approximately equal funding amounts. However, in France less than 15 percent of all funding recipients are located at higher education institutions (62% nonuniversity institutions, 25% industry), whereas in the United Kingdom the

higher education institutions' share is almost 60 percent (27% nonuniversity institutions, 13% industry).