

2. Institutional factors shaping the performance of research organizations

Groundbreaking research achievements are rare and unevenly distributed across research organizations and countries. In addition, national research systems are institutionally stratified, i.e., divided into a core area of elite institutions and a peripheral area of all other research institutions. Sociologists Joseph Ben-David and Rogers Hollingsworth have investigated the relationship between global groundbreaking research and institutional stratification using the example of biomedicine. Prof. Thomas Heinze's research group is continuing this work with grant-funded research projects and PhD dissertations, including the DFG-funded Research Training Group "Transformations of Science and Technology since 1800: Topics, Processes, Institutions." An important part of this work involves establishing high-quality repositories and making them available to the research community. This includes a dataset of all Nobel Prize winners and their career stages, a repository of all available Nobel Prize nominators and nominees, and a repository on the development of subject structures at state universities in Germany. The empirical analyses carried out refer to middle-range sociological theories.

2.3 Prestige stratification in the German university system

International research is strongly influenced by leading US universities. Recent studies in the field of quantitative science research have re-evaluated stratification within the field of US research universities. Faculty placement (FP) can be used to determine which universities are at the top of the prestige hierarchies (Burris 2004; Clauzet et al. 2015). The FP method is based on comprehensive surveys of professors in academic disciplines. Probably the most comprehensive survey of stratification in the US university system examines the prestige hierarchies of 368 research universities across 108 disciplines (Wapman et al. 2022). This study finds that 80 percent of all professorships at US research universities are filled by scientists who earned their PhD from one of the top 20 percent of departments. The entire system of research universities is thus dominated and integrated from the top down.

The implications of the pronounced dominance of a few educational institutions on the overall university system have so far only been discussed to a limited extent in science and higher education research. In a handbook on research funding, Jappe & Heinze (2023) call for a closer examination of the interactions between research funding and the institutional stratification of higher education systems in order to better assess the long-term structural effects of different research funding strategies. The two authors discuss the comparability of the situation in Europe with that in the United States and consider two scenarios for research funding policy in Europe. In another handbook, Jappe & Heinze (2025) identify the creation of additional professorships as a key challenge for German universities in the context of a globally stratified higher education system. A larger number of independent researchers could strengthen scientific performance and make academic careers more attractive, especially for qualified women. However, a quality-oriented reform of capacity law and a substantial reallocation of research investments in favor of universities would require a coordinated, strategic approach by the federal and state governments.

Furthermore, in his PhD dissertation, Tobias Grabosch examines faculty placement in various academic disciplines in the German higher education system. An initial publication focuses on the two disciplines

of psychology and political science(Grabosch et al. 2026). The study shows that a few influential universities dominate these two disciplines and that the majority of other universities have little influence on the appointment of professors. The article also discusses whether the size of disciplines and the publication productivity of university departments are explanatory factors. The unequal success of universities in placing their doctoral students as professors also raises questions about intellectual diversity in the German higher education system.

Publication of Prof. Heinze's research group

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