

Last update: 22.08.2024, TUM-GS

Doing a Doctorate as First-Generation Academic: Statistics and Trends

Social Background in Higher Education: What do the Statistics Say?

Let's have a look at some numbers. Social origin is a crucial factor in educational success, and it continues to influence access to higher education in Germany. It is important to keep in mind that social origin is a relatively new topic in education monitoring. Therefore, the **definitions of first-generation academics differ**.

According to the [Nacaps study](#), which is currently the only comprehensive study capturing the proportion of first-generation academics among doctoral candidates in Germany, **37% of doctoral candidates** in the winter semester of 2021/22 came from families **without an academic background**. However, this figure also includes parents with degrees from the University of Applied Sciences (UAS). If we define a non-academic family as one where neither parent has a university or UAS degree, the numbers can be expected to be lower. [Die Studierendenbefragung in Deutschland: 22. Sozialerhebung](#) measures the proportion of first-generation academics at the bachelor's and master's levels using the narrower definition of students from families where neither parent has a university or UAS degree. According to this survey, 44% of students at the bachelor's and master's levels in the summer semester of 2021 were first-generation students. ([Die Studierendenbefragung in Deutschland: 22. Sozialerhebung](#), p. 28)

Across different **fields of study**, the percentage of students from academic backgrounds varies. For example, 74% of students in human medicine and dentistry have at least one parent with a degree, while this figure is 56% in engineering (Table 1). In mathematics and the natural sciences, 62% of the students come from families where at least one parent has a degree. Compared to other fields of study, it is widespread for medical students to have both parents with a university degree (45 percent). In mathematics and the natural sciences, 33 percent of the students come from families where both parents have degrees. In other fields of study, such as education and social sciences, the proportion of students whose parents do not have a university degree is significantly higher at around 50 percent. ([Die Studierendenbefragung in Deutschland: 22. Sozialerhebung](#), p. 30)

There is a trend towards a decline in the proportion of students from non-academic households at universities in Germany compared to previous years. However, this must also be seen against the backdrop of so-called educational expansion and a trend towards higher qualifications in Germany. Studies show that the patterns of social inequality at the transition to higher education in Germany have remained relatively stable. ([Die Studierendenbefragung in Deutschland: 22. Sozialerhebung](#), p. 27-28)

Parental Education Level of Students by Field of Study (in %)

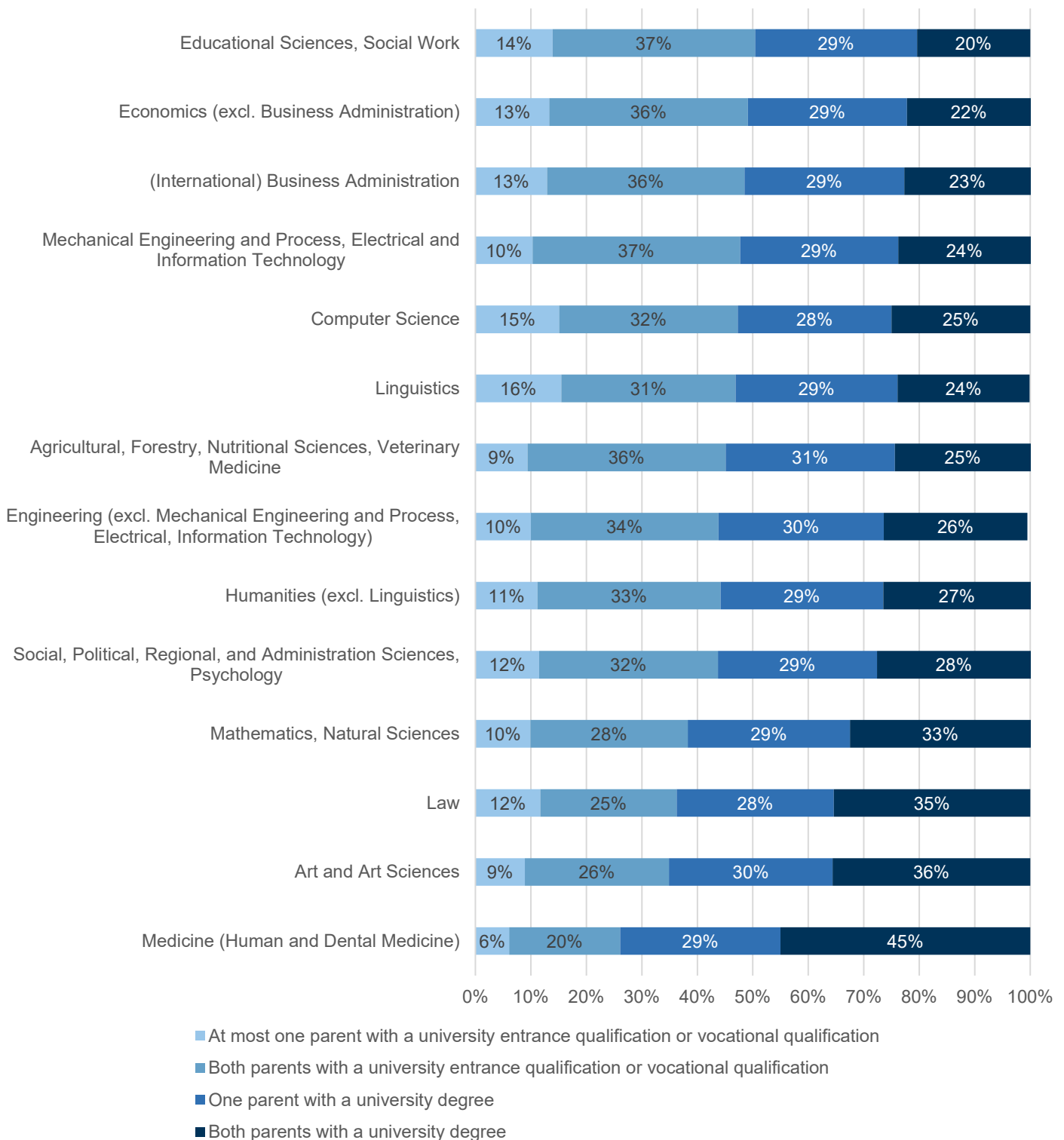


Table 1 Calculation with weighted data from "The Student Survey in Germany" (2021). The analyses are based on responses from 76,314 students. Note: Due to rounding differences, the summed values may deviate from 100.0 percent. Source DIE STUDIEREN-DENBFRAGUNG IN DEUTSCHLAND: 22. SOZIALERHEBUNG, p. 31.

The "Leaky Pipeline" Phenomenon

The term "**Leaky Pipeline**" (or in German "**Bildungstrichter**" specifically for the educational context) refers to the declining proportion of a certain group, e.g. in academia, across various stages of qualification and career levels (Figure 1). Social origin still significantly affects educational success in Germany (as in other Western states such as France and the USA). Compared to children from academic families, fewer children from non-academic families obtain university entrance qualifications, and even fewer continue to a Master's degree or doctorate. For every 100 children from academic families, six earn a doctorate, but for every 100 children from non-academic families, only two reach the same level. (Hochschulbildungsreport 2020)

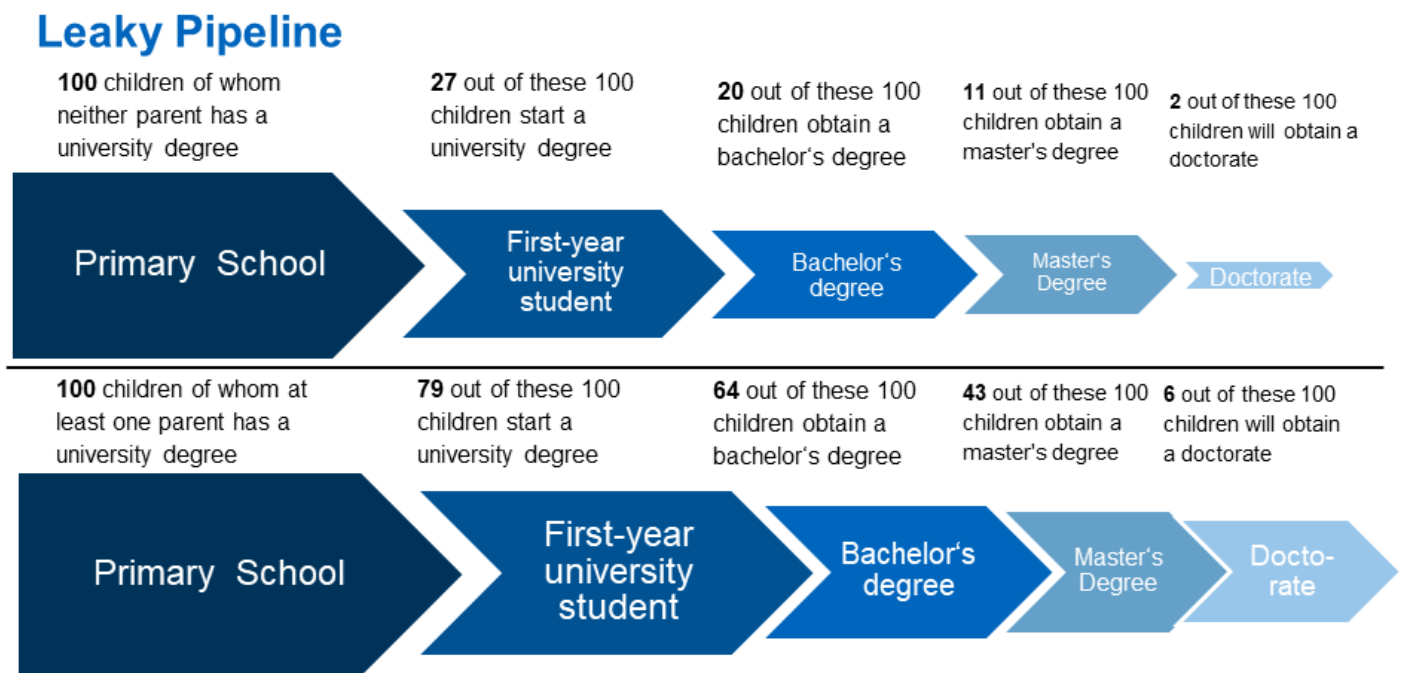


Figure 1 Leaky Pipeline Phenomenon in the Educational Sector

Reasons for Inequality in the Educational System

The French sociologist Raymond Boudon explains social inequality in education through two types of effects: **primary effects**, such as differences in school performance due to fewer resources, and **secondary effects**, where students from non-academic backgrounds may avoid higher education because of concerns about the time and financial costs. (Jaksztat and Lörz, p. 48)

Subtle factors also play a role. Research shows that first-generation academics often feel less confident in academic settings, both in how they communicate and present themselves. Students from academic families on the other hand are more likely to have access to networks and knowledge that help them navigate university life. These differences can lead to feelings of not belonging and higher stress levels, making it harder for first-generation students to succeed in academia.

A Deeper Dive into the Empirical Findings

Social inequality can subtly shape how people behave and make life decisions. For example, a study by Bettina Bock von Wülfigen found that lecturers who are first-generation academics tend to take up less physical space during their lectures compared to those from academic backgrounds. This can negatively affect how the audience perceives the lecture, as the way lecturers present plays a key role in their success. A strong, clear voice, an open, dynamic attitude, varied intonation, and meaningful pauses without filler words are important factors for a successful talk.

Even subtle differences in individual behavior can influence how someone is evaluated. Pierre Bourdieu uses the term "**habitus**" to describe behavior, including how people move, act, and carry themselves. Studies have shown that recruiters tend to favor candidates whose habitus aligns with their own (Bettina Bock von Wülfigen, S. 120). This bias can start as early as school, where teachers may judge students not only by their grades but also by their social background and future aspirations. (Becker; Birkelbach) At German universities, professors from non-academic backgrounds are a minority, suggesting that the habitus of first-generation academics among students and doctoral candidates likely differs from that of most professors (Baudson; Altieri). However, these issues are primarily structural and should not be individualized on the part of either the affected individuals or the professors.

Academia is a social field with numerous explicit and implicit rules for being recognized. Distinct social codes and academic language set this environment apart, making it challenging for newcomers. The French sociologist Pierre Bourdieu has coined the terms social and cultural capital: Students from academic families often possess more social and cultural capital such as support from their networks, helping them navigate these rules more easily. They are already acquainted with the social field of academia or take less time to fit in compared to students from non-academic backgrounds. On the other hand, students from non-academic backgrounds may feel like outsiders, struggling to fit in. Studies from the U.S. and Germany have shown that first-generation students often experience higher levels of stress and mental distress as a result of these challenges. (Bettina Bock von Wülfigen, p. 120)

Why Fewer First-Generation Students Pursue Doctorates

The proportion of first-generation students pursuing doctorates has declined in recent years. Several factors contribute to this trend. First-generation students tend to be overrepresented in fields where doctorates are less common, such as education and social sciences. (Die Studierendenbefragung in Deutschland: 22. Sozialerhebung, p. 30) An empirical study (Jaksztat and Lörz) revealed several additional reasons for this trend. Even though the data dates back to the years of 1989 to 2009, the arguments and theoretical considerations of the authors are still plausible.

Internship, a Semester Abroad or a Job as a Student Assistant

Extracurricular activities like internships, studying abroad, or working as a student assistant have become more important for obtaining an adequate job after graduating. Among these, working as a student assistant significantly increases the chances of continuing to a doctorate. This is because it provides personal contact with potential supervisors, a closer connection to university life, and hands-on experience with relevant methods and research topics. However, students from non-academic backgrounds are more likely to seek jobs outside the university because they often need higher salaries. They may also lack access to insider knowledge about how beneficial a student assistant position can be for an academic career.

Importance of Grades

Grades have become increasingly important for doctoral admission, and data shows a growing performance gap between students from different social backgrounds. This gap, combined with financial barriers and limited access to networks, further reduces the likelihood of first-generation students pursuing doctorates.

In a Nutshell: Potential Barriers for First-Generation Academics

First-generation academics often face additional challenges that make it harder to pursue a doctorate. These include **mental barriers**, such as feelings of not belonging or imposter syndrome. These barriers can stem from being the first in their family to navigate academic environments, where they may lack role models or feel out of place. **Information deficits** are another significant hurdle, as they may lack access to informal networks that provide crucial advice and guidance about the academic journey, funding opportunities, and career prospects. **Financial concerns** are also a significant hurdle, as many first-generation students are unsure about their financial situation during the doctorate or whether a doctorate will pay off in the long run. These challenges can discourage talented first-generation students from pursuing or completing a doctorate.