

## Submissions Abstract Book - All Papers (Included Submissions)

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Explaining Employment Sector Choices among Doctoral Graduates in Germany

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**Research Domain:** Academic practice, work, careers and cultures (AP)

**Abstract:** Knowledge on the decision-making processes underlying doctoral graduates' career decisions is still insufficient – especially for the German context. We integrate the empirically known determinants of sector choices within a rational choice framework taking into account preferences and restrictions. Our data is the PhD Panel 2014 (waves 1–5), which was collected by the German Centre for Higher Education Research and Science Studies (DZHW). The data is representative of the 2014 doctoral graduation cohort in Germany. In line with previous research and our theoretical assumptions, we find that individual preferences, objective labour market conditions, subjective career prospects, external encouragement, and individual career constraints are associated with doctoral graduates' employment sectors five years after graduation.

**Paper:** Doctoral graduates largely contribute to modern economies' ability to innovate and societies' ability to solve current and future problems (Auriol et al. 2013; Bogle et al. 2011; Diamond et al. 2014; European Commission 2009). Therefore, a doctoral degree qualifies for jobs both inside and outside academia. In fact, there is a huge variation in postdoctoral career paths and employment sectors. Many doctoral graduates leave academia to work in the public service, in companies' research and development departments, or in non-profit organisations.

Inside academia, working conditions are changing in many countries. Differentiation and stratification, as well as competition for resources, and evaluation of achievements are increasing among institutions of higher education. Doctoral graduates' working conditions largely depend on national higher education systems. While Anglo-American higher education systems provide established tenure track systems and tenured positions beyond the professorship, such as lecturers, the academic labour market in German-speaking countries is characterised by precarious working conditions beyond professorships and a declining proportion of full or associate professorships and other tenured positions. Thus, in Germany, academic careers require a large amount of flexibility and perseverance. Generally speaking, doctoral graduation and the subsequent years are crucial for the decision to leave academia or to stay in order to try to realize an academic career.

While research careers inside academia have become more and more competitive, accelerating technological change, and increasing societal complexity have evoked an increased demand for scientifically trained staff outside academia. At present, the demand for doctoral graduates outside academia is high and likely to keep growing in the future.

Understanding how doctoral graduates select into different employment sectors is key for policy makers, employers inside and outside academia, career advisors, and doctoral graduates themselves. This understanding may help to improve the competitiveness and attractiveness of both academic and non-academic jobs for doctoral graduates, to achieve a good match between individual characteristics and preferences on the one hand and job requirements on the other hand, and to support doctoral graduates to take sustainable career decisions.

A large body of research has described the employment sectors of doctoral graduates for different national contexts. However, there is still insufficient knowledge on the decision-making processes underlying doctoral graduates' career decisions. Why do doctoral graduates choose certain employment sectors over others? What expectations do they have towards different employment sectors? Previous research has shown that individual preferences for certain job attributes, subjective career prospects, and objective labour market conditions shape doctoral graduates' career decisions. The most comprehensive study is by Bloch et al. (2015) for doctoral graduates in Denmark, but similar results are available for the United States (Agarwal und Ohyama 2013) and the Netherlands (Waaijer 2017). For Germany, where the number of awarded doctoral degrees is highest within the European Union (Eurostat 2021) and where no established academic tenure track system exists, these questions remain largely unanswered.

Against this background, this paper builds on previous research on the employment sector choice of doctoral graduates. Primarily, this paper aims to reproduce Bloch et al.'s (2015) study and apply their approach to doctoral graduates in Germany. Similar to Bloch et al. (2015), we examine how individual preferences, external encouragement, and objective labour market conditions affect doctoral graduates' sector choice. Beyond that, we investigate the role of subjective career prospects (Waaijer 2017) and of individual career constraints, and we integrate these predictors into a rational choice framework.

Our data is the PhD Panel 2014 (waves 1–5), which was collected by the German Centre for Higher Education Research and Science Studies (DZHW). The data is representative of the 2014 doctoral graduation cohort in Germany and their career trajectories up to five years after graduation. To compensate for item-non response, we applied multiple imputation. We differentiate between five distinct employment sectors (1. the academic sector, 2. research jobs in the (non-academic) public sector, 3. research jobs in the private sector, 4. non-research jobs in the public sector, and 5. non-research jobs in the private sector) and carry out multinomial logistic regression analyses.

In line with previous research and our theoretical assumptions, we find that individual preferences, objective labour market conditions, subjective career prospects, external encouragement, and individual career constraints are associated with doctoral graduates' employment sectors five years after graduation. Because most doctoral graduates leave academia, we argue that they need to be prepared for and informed about the various postdoctoral career options beyond academic careers during doctoral training.

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