

Differences in men's and women's academic productivity persist and are most pronounced for publications in top journals

Description

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This blog post is based on the authors' co-written article, "How does research productivity relate to gender? Analyzing gender differences for multiple publication dimensions" published in *Scientometrics*. Find the original study [here](#).

As a scientist, one's work and oneself are constantly evaluated. This personal assessment is usually based on the number and prestige of published scientific articles. These assessments have become more and more important for scientists: Access to career opportunities, third-party funding, and additional university resources, all depend on how much and where one has published. Many previous studies have looked at publication rates. We know that in most cases, men publish on average more articles than women and that there is a gender publication gap. This gap in "how much" one publishes is now well established.

However, previous analyses have not taken into account the prestige of the publication outlet. For instance, one explanation for these previous results could be that women publish less on average, but focus on higher prestige journals. In this respect, not every publication can be counted equally, as there are structural differences between publication types. On the one hand, publications in collections and books can be relatively easy to obtain. Editors are often looking for authors and research that they can include in edited volumes and the demand for chapters is as high as the supply. Peer-review procedures have become more common for book chapters, but in general these are less rigorous compared to journals. On the other hand, it is harder to publish a journal article. Journals are generally more competitive; they have greater rates of submission and rejection, stricter peer-review guidelines, and higher minimum standards. Journal articles usually reach a larger professional audience, are more widely cited, and as a result are well received in evaluations.

To probe deeper into this gender publication gap, we took a sample of full professors of psychology in Germany and analysed their publication records between 2013 and 2014. We distinguished between different publication forms for our analyses of the publication gap between men and women and looked at articles in top-10% journals (1st decile, based on the journal impact factor), ordinary journals (all other journals), and book chapters. For research articles, we relied on information from the Web of Science and book chapters were taken from the database PSYINDEX. This data set was enriched with CV data and structural data for the institute and university. Psychology is particularly suited for a study of this nature, as the disciplinary culture ranges from natural sciences to neuroscience to social sciences to social psychology and thus covers a range of publication cultures.

In our sample of psychology full professors, we found that women, over the two-year period, published significantly less ordinary (-1.8) and top (-0.9) journal articles than men, but found no gap for the publication of less prestigious book chapters. The distribution and mean for the three publication types are displayed in Figure 1. More women than men do not have any articles in top journals, whereas men more often than women did not publish book chapters.

It is often proposed that the gender publication gap is actually caused by other confounding variables. Notably, career age is considered to be positively related to number of publications. If men have on average a higher career age than women, gender differences would then be a result of career age and not gender. However, the gender publication gaps in top and ordinary journal articles persist even after we controlled for confounding individual and organizational factors such as career age, size of chair and department, and amount of collaboration. The results suggest that women do research and write manuscripts, but have different publication patterns: instead of submitting to highly competitive journals, they are satisfied with less-prestigious book chapters. As publications in peer-reviewed (top) journals are especially important for career advancement as well as peer recognition, we argue this publication pattern is most likely disadvantageous for women.

The gender publication gap is therefore statistically significant for publications in ordinary and top journals. This gender gap remains for top journal publications, even after

controlling for individual and organizational variables. The gender publication gap in research productivity is thus a challenge that policymakers should consider if they intend to address gender inequality in academia. Even in psychology, a discipline with a large share of women, female professors publish less highly rated journal articles than male professors. As a result, they are less visible to the scientific community and less likely to gain prestige and recognition. Hence, these findings should be taken into account when applying publication-based metrics to evaluate researchers. Finally, additional studies are needed to determine the cause for this gap – why is it that women are less likely to publish in journals, but more likely to publish book chapters? We suppose that women avoid the risk of rejection by this publication strategy, but survey-based data is needed to support this chain of explanation.

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