

# New research reveals a hidden obstacle for women in academia

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For more than a decade, women have earned more doctoral degrees than men in the United States. Despite that, women still lag behind men in getting tenure, getting published and reaching leadership positions in

academia.

Much of the [research](#) into why that might be focuses on structural barriers and explicit prejudice. But a new study by a team of researchers at Stanford Graduate School of Education (GSE) finds a widespread implicit bias against academic work that simply seems feminine—even if it's not about [women](#) or gender specifically.

Analyzing nearly 1 million doctoral dissertations from U.S. universities over a recent 40-year period, the researchers found that scholars who wrote about topics associated with women, or used methodologies associated with women, were less likely to go on to get senior faculty positions than those who did not.

The issue wasn't so much a prejudice against feminist studies or gender studies, which have expanded considerably since the 1970s. In fact, people who wrote their dissertations explicitly about women had slightly better career prospects than those who wrote explicitly about men.

The real problem was a more subtle bias against topics and research designs that were "feminized," meaning they were more associated with traditions of women's work. Scholars whose dissertation abstracts had words like parenting, children or relationship, for example, had slimmer career prospects than people who used words like algorithm, efficiency or war.

Even within a particular field, whether sociology or computer science, scholars whose dissertations were associated with women's traditions in research had poorer prospects than those who wrote more "masculinized" dissertations in their respective fields. Despite changes in social norms and a growing number of women scholars over time, the researchers found the devaluation of women's research was more or less consistent throughout the 40-year period.

"Everyone emphasizes that [academia](#) is based on meritocracy, that everything is neutral and based on the scientific value of research," said the study's lead author, Lanu Kim, who led the research team as a postdoctoral fellow at Stanford GSE and is now an assistant professor at the Korea Advanced Institute of Science and Technology. "It's somewhat fake, and it's somewhat impossible. There can be differences in men's and women's research interests, and some topics are already associated with women rather than men. The process cannot really be neutral."

The study was recently released online in advance of its publication in the January 2022 issue of *Research Policy*.

## Uncovering patterns through AI

The researchers used natural language processing, a type of artificial intelligence used to study patterns in text, to analyze the abstracts of dissertations in every field from universities throughout the United States between 1980 and 2010.

To measure how "feminized" or "masculinized" a dissertation might be, the researchers tallied the concentration of words that had been used disproportionately by male or female doctoral candidates in previous years. This included words explicitly referencing gender, such as woman, man, her or him.

Beyond that, however, the researchers looked for words associated with women's or men's interests, even if the words in themselves had nothing to do with gender.

Among the terms with a strong association to women: School, teacher, child, parent, culture and participation. Terms strongly associated with men, by contrast, ranged from algorithm and efficiency to words connected with energy and electronics.

The researchers then measured academic prospects by looking at which of the scholars went on to hold senior faculty positions. Specifically, they looked at whether a scholar was later named as the primary faculty advisor on someone else's doctoral thesis, which is a strong indicator of an emerging scholar's long-run success as an academic.

Though there are many other measures of success, Kim and her colleagues wanted to know whether academic institutions implicitly penalize scholars for certain types of research.

Overall, only 6.3 percent of those who received Ph.D.s went on to become faculty advisors, but women were about 20 percent less likely than men to reach that mark.

Notably, scholars who wrote dissertations explicitly about women had a slight advantage over those who wrote explicitly about issues for men. That reflected efforts by many universities to make up for lost ground after years of giving short shrift to women's issues.

Scholars who pursued topics and research designs more implicitly associated with women, however, had poorer prospects: Their chances of becoming a faculty advisor were 12 percent lower than average. Perhaps even more startling, the implicit bias was actually greater in fields that had strong traditions of research associated with women's work in academia, such as sociology, than in fields dominated by men, like mechanical engineering.

For scholars working in fields with a preponderance of research traditionally associated with women, female Ph.D.s are more likely to suffer a triple disadvantage on the job market, the authors wrote. "They are penalized for being women, [for] not doing a Ph.D. in a masculinized field and [for] not adopting man-type research practices."

"The troubling inequity we identified is one that women faculty have likely long suspected but continue to experience," said Daniel McFarland, a professor at Stanford GSE and one of the study's co-authors.

Kim and her colleagues confirmed that women are now modestly rewarded for research on women's issues. But that progress, they concluded, is being overwhelmed by implicit biases.

"As a society, we've made outstanding progress over the last century in transforming higher education and science institutions," said Daniel Scott Smith, a doctoral candidate at Stanford GSE and co-author of the study. "But implicit biases against certain kinds of research undermines our current efforts to make the academy more diverse—in terms of who becomes [university](#) professors but also in terms of what's considered valuable academic knowledge."

**More information:** Lanu Kim et al, Gendered knowledge in fields and academic careers, *Research Policy* (2021). [DOI: 10.1016/j.respol.2021.104411](#)

Provided by Stanford University

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