Information and Gender Differences in University Economics Courses and Majors in the United States

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Sector(s): Education, Gender

Sample: 1,976 students

Target group: Higher education and universities Students Youth

Outcome of interest: Enrollment and attendance Women's/girls' decision-making

Intervention type: Behavioral economics Information Nudges and reminders

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Research Papers: Gender Differences in Economics Course-Taking and Majoring: Findings from an RCT

Women continue to be underrepresented in economics, which may lead to gender segregation and earning gaps in the labor market, potentially limiting women's economic opportunities. Researchers conducted a randomized evaluation to test the impact of providing information to students on their decision to pursue courses and majors in economics at a public university in the United States. The intervention increased male students' likelihood of studying additional economics courses when compared to female students, but the intervention did not impact students' decision to major in economics, irrespective of gender. Female students who received a lower-than-expected grade in the introductory-level class were less likely to take another economics course.

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Women continue to be underrepresented in economics across high-income countries.[1] For example, in the United States, women represent less than one-third of economics majors at universities. Evidence has shown that men's choice of major is largely influenced by the expected financial gains after graduation. However, women may consider other factors such as their perception of the subject as business-focused, the absence of women role models, gender-biased instructional materials, or their academic performance.

Such underrepresentation may lead to gender segregation and earning gaps in the labor market, potentially limiting women's economic opportunities. What are the gender differences in providing information nudges to undergraduate-level students to increase their interest in pursuing courses, majors, and careers in economics?

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The evaluation was conducted among undergraduate students who were taking introductory-level microeconomics, macroeconomics, or statistics classes at the University of Illinois at Urbana-Champaign, a public university in the United States. At the time students were invited to participate in the intervention, only 8.9 percent had chosen an economics major, and 43.6

percent had chosen any major. Among the study population, there was no significant difference in expected grades between women and men at the beginning of the study. However, men had a higher chance of being US citizens, had better pre-college math skills, and reported a higher inclination toward majoring in economics at enrollment.



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Researchers conducted a randomized evaluation to test the impact of providing information to university students on their decision to pursue economics courses and majors at the University of Illinois at Urbana-Champaign in the United States. At the beginning of the Fall 2015, Spring 2015, and Fall 2016 semesters, researchers offered extra credit to freshman or sophomore students taking one of the introductory-level courses for completing an online survey focused on their background characteristics and expectations about their course grades. Students who achieved a B- or higher grade at the end of the semester were eligible for the intervention.

A total of 1,976 students (1,134 men and 842 women) were equally randomized into one of the following groups:

1. *Prosocial Group:* Students received information highlighting the diversity of career choices and potential personal benefits related to the Economics major. Students also received an attachment with examples of positions held by well-known economists and alumni, and evidence of employment opportunities.
2. *Earnings Group:* Students received information highlighting the financial returns associated with the Economics major. They also received an attachment with examples of jobs taken by the department alumni, pay trajectories, and trends on pre-graduation employment offers for studying economics compared to other subjects.

3. *Comparison Group:* Students received no attachments and no additional information.

In both the *Prosocial* and *Earnings* groups, students received a personalized email and physical letter from the Economics department. The letter had three paragraphs, with the first and third paragraphs including the same content for both groups. The first paragraph aimed to encourage and reassure students about their abilities; the third paragraph shared general information about the department as well as contact and administrative details.

Researchers used university administrative data at the student level to analyze grades obtained in the introductory courses, track the students' decisions to undertake additional economics courses, and select Economics as their major at the end of their junior year. Researchers kept track of students' outcomes through the Spring 2019 semester.

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Both the Prosocial and Earnings intervention groups increased male students' likelihood of enrolling in additional economics courses compared to female students, but the intervention did not impact students' decision to major in economics. Across intervention groups, female students who received a lower-than-expected grade in the introductory-level class were less likely to take another economics course.

Decision to take another economics course: After the intervention, 66.3 percent of students decided to take another course following their introductory-level economics course. Men were more likely to take a subsequent course in both the Prosocial and Earnings groups by 5.3 and 3.2 percent, respectively. Researchers found no impact on women's decision to take another economics course in either intervention group.

Decision to major in economics: Among the students who selected a major by the end of their junior year, 22.2 percent of students chose economics. Across intervention groups, women were 7.2 percent less likely to choose economics as a major than men. The interventions had no effect between women's and men's decision to major in economics.

Course grades: Women who received a grade lower than they expected in the introductory-level economics class were less likely to take a subsequent economics course in both the Prosocial and Earnings groups by 10.2 and 10.1 percent, respectively. In contrast, men with lower-than-expected grades in the introductory-level class in the Earnings group were six percent more likely to take another economics course.

Female teaching assistants (TA): Having a female TA did not impact female students' outcomes, suggesting that economics Ph.D. students as TAs may not be effective role models for female undergraduate students. However, male students who had a female TA were more likely to take a subsequent economics course for those in both the Prosocial and Earnings groups by 9.6 and 9.7 percent, respectively.

These results suggest caution when devising strategies aimed at increasing women's representation in economics fields. Contrary to previous evidence, the researchers found neither evidence of women's preference for prosocial messaging nor a distaste for an earnings framing. Researchers suggest considering the potential unintended consequences of these types of interventions, such as how disappointment from lower-than-expected performance may disincentivize women's decisions.

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1. Vidal-Fernandez, Marian, Duygu Yengin, Rigissa Megalokonomou (2021). "Why having more women/diverse economists benefits us all," VOXEU Column. Available here: https://cepr.org/voxeu/columns/why-having-more-womendiverse-economists-benefits-us-all