

# Do I Belong in Economics? Student Perceptions

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## Persistent underrepresentation of female and minority students in economics

The underrepresentation of female and ethnic/racial minority students is persistent and pervasive in economics. Only 19% of undergraduate economics degrees were awarded to underrepresented minority (URM) individuals in 2021, who comprised 32% of the population and received 27% of all bachelor's degrees (CSMGEP, 2022). The share of degrees earned by minority students has been slower to increase in economics than in STEM (CSMGEP, 2022). In fact, URM students received a higher percentage of undergraduate degrees in STEM (22%) than in economics.

Women represent 55% of college undergraduates but only 36% of economics undergraduate majors. There has only been slight growth in the share of economics degrees earned by women over time (Chari, 2022).

## Underrepresented students experience lower relevance, belonging, and growth mindset in economics

Previous research has established that URM and female students in introductory economics courses have lower relevance, belonging, and growth mindset (RBG) than non-URM men (Bayer, Bhanot, Bronchetti, & O'Connell, 2020). Past research on RBG has been based on a single, elite liberal arts institution (Bayer, Bhanot, Bronchetti, & O'Connell, 2020). Minority serving institutions (MSIs) and women's colleges, two kinds of "identity-focused institutions," have been found to promote RBG and the pursuit of typically white and male-dominated STEM fields (Calkins, Binder, Shaat, & Timpe, 2023; Kinzie, Thomas, Palmer, Umbach, & Kuh, 2007; National Center for Science and Engineer-

## Survey Data Collected

We report the results of survey data collected in the fall semester of 2022 from 24 institutions across four states. Student surveys provided demographic information for 805 students across 105 undergraduate economics classes as well as levels of RBG in the context of their economics class.

## What is RBG?

- The relevance factor summarizes students' level of agreement with six statements related to the material covered in economics courses at their college.
- The belonging factor combines agreement with eight statements about students' experiences in economics classes and a yes/no response to the question, "Do you feel different from the typical economics student?"
- The growth mindset factor includes students' level of agreement with two statements related to learning the material and their beliefs about economics ability on a scale from "Economics ability is something you cannot change very much" to "Economics ability can be developed."
- Finally, the overall RBG factor summarizes all the items included in the three separate relevance, belonging, and growth mindset factors.

ring Statistics, 2021; Perna et al., 2009; White, DeCuir-Gunby, & Kim, 2019). We explore whether identity-focused institutions increase RBG and hence persistence and retention in economics.

### Assessing relevance, belonging, and growth mindset across a variety of institutions and identities

To better understand RBG across a variety of settings, we undertook data collection that intentionally oversampled minority-serving institutions (MSIs) and women's colleges, as well as including co-ed schools and predominantly white institutions (PWIs) to assess how RBG differs between minority-identifying and white students and female-identifying and male/non-binary students across a variety of institutional settings.

We measure each of relevance, belonging, and growth mindset by asking students about several components related to each. We use principal factor analysis to generate a standardized factor for each of relevance, belonging, and growth mindset and an overall RBG factor that includes all items.

#### How does RBG differ by gender?

Female students had similar[1] belonging, growth mindset, and overall RBG factors to

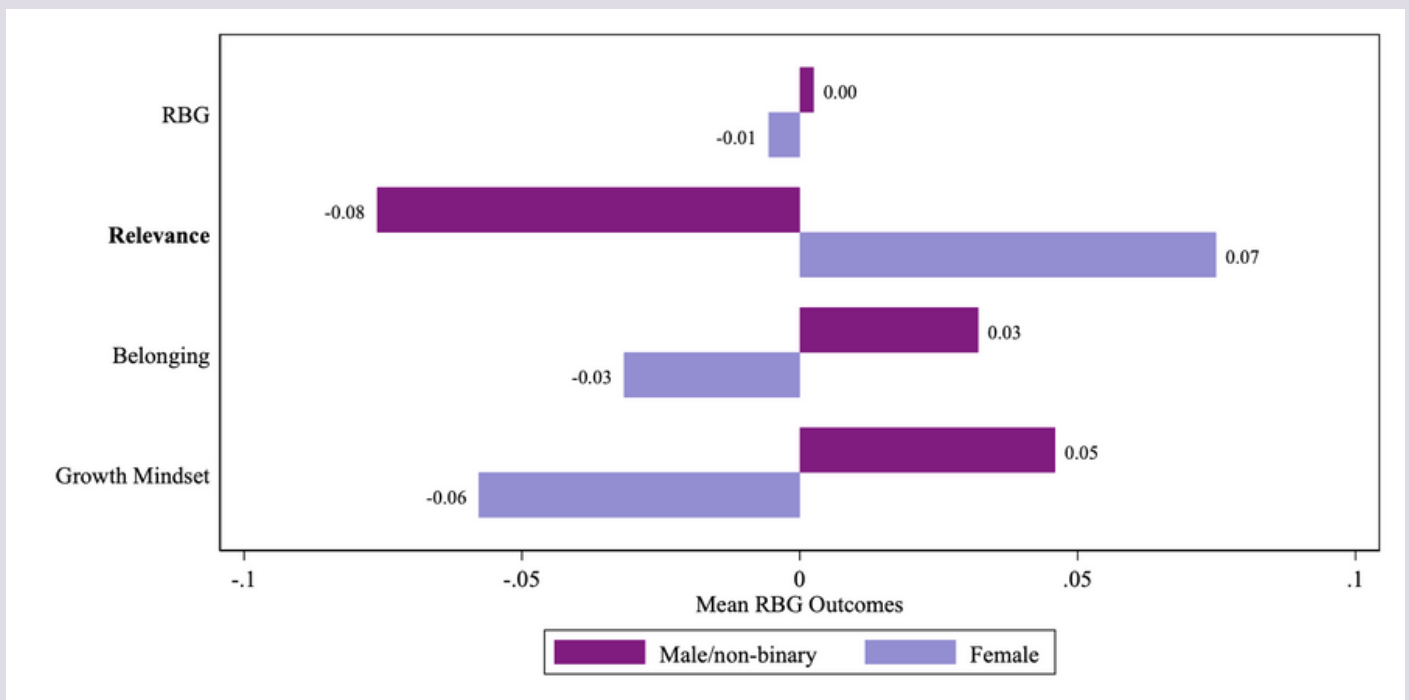
male/non-binary students but had a relevance factor of 0.15 standard deviations higher (Figure 1).

Differences in RBG were driven by female students being more likely to agree that professors used examples relatable to their lives, that they discussed important real-world issues in class, and that they felt economics provided a useful framework for thinking about important issues (Figure 2).

This difference was also driven by the high proportion of female students in the sample that attended women's colleges, where relevance was especially high. However, female students had significantly lower scores on two individual outcomes related to belonging, responding less often that "people like me can become economists" and more often that they felt different than the typical economics student. Female students also had lower scores on some of the outcomes related to the growth mindset factor, including being less likely to agree with the statement "I believe I can learn the material."

**Figure 1. Female students experienced higher relevance in economics**

*Mean RBG factor outcomes by gender identity*



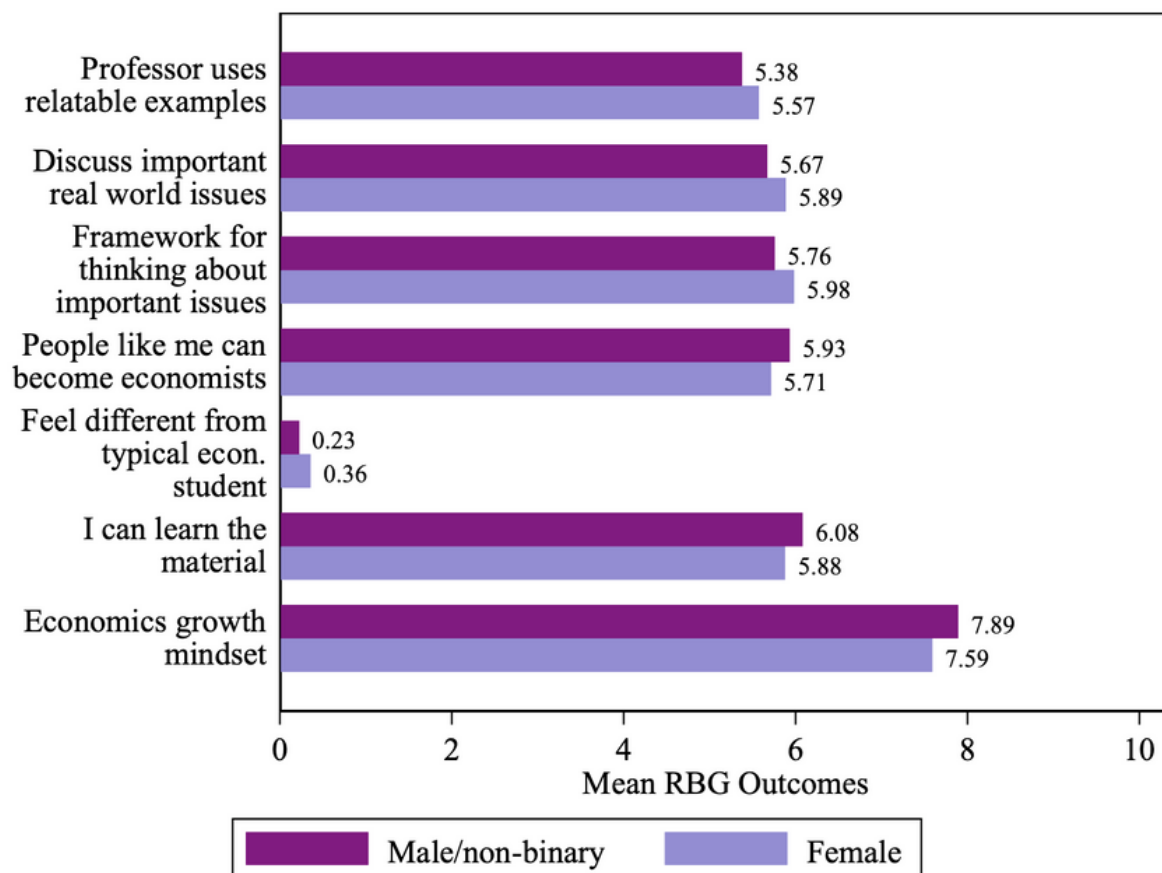
Notes: Shows standardized RBG factors, with labels bolded if differences are significant (relevance is significant)

Source: Authors' calculations based on RBG surveys

[1] We test for statistically significant differences (at the 5% level) and report differences for only those items and factors with significant differences.

**Figure 2. Female students found economics relatable but struggled with belonging and economics growth mindset**

*Mean RBG item outcomes by gender identity*



Notes: Shows the individual RBG outcome items with statistically significant differences by gender, on a 7 point scale of agreement except for “Feel different from typical econ. student” which is given as a proportion and economics growth mindset (10-point scale).

Source: Authors’ calculations based on RBG surveys

### How does RBG differ between co-ed and women’s colleges?

Students at women’s colleges show a significantly higher relevance factor (by 0.25 standard deviations) than students at co-ed colleges (Figure 3). Three items related to relevance drive this difference. Women’s college students are more likely to agree that their professor uses examples relatable to their lives, they discuss important, real-world issues in class, and economics gives them a useful framework for thinking about important issues (Figure 4). Additionally, women’s college students are significantly more likely to feel supported by the tutor or teaching assistant and feel different from the typical economics student.

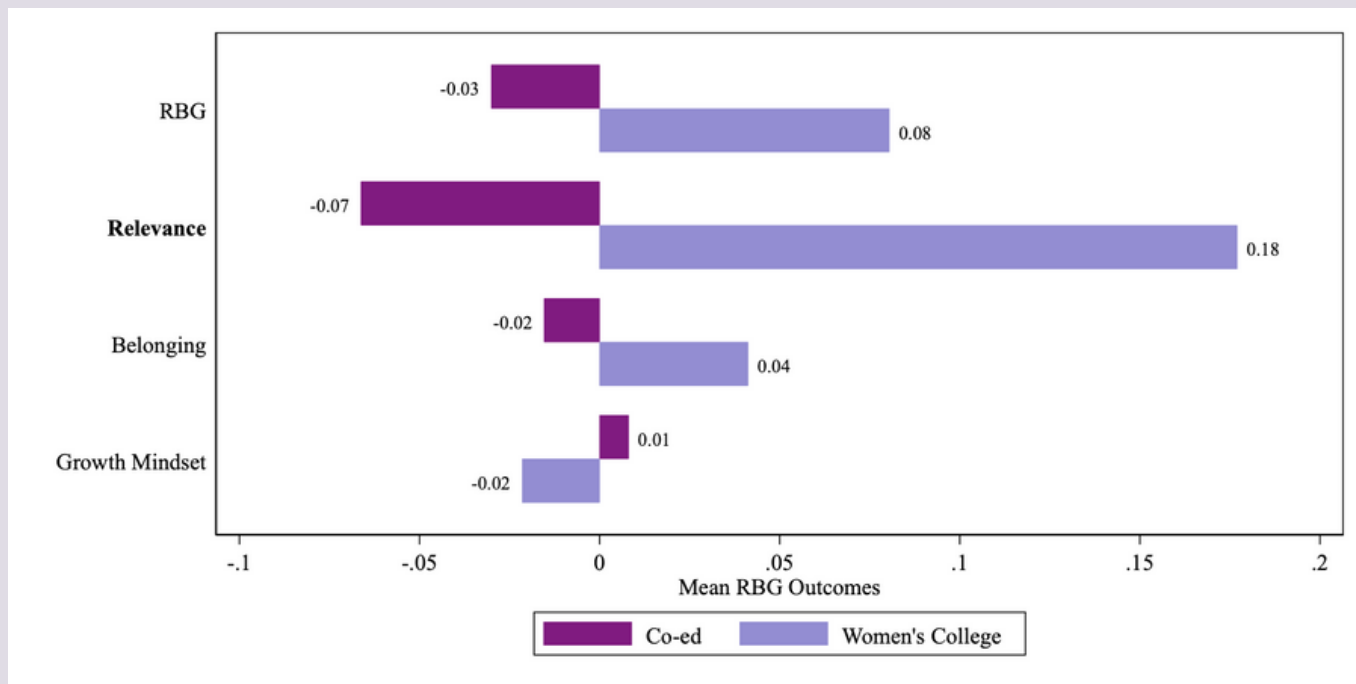
Finally, women’s college students actually have stronger economic growth mindsets than co-ed college students and are equally likely to believe that “people like me can be economists.” This is despite female students having lower scores on these outcomes than male/non-binary students.

### How does RBG differ by minority identity?

Minority-identifying students show a significantly lower overall RBG factor than their white peers (by 0.22 standard deviations), driven by significantly lower scores in all the components: relevance (by 0.17 standard deviations), belonging (by 0.20 standard deviations), and growth mindset (by 0.20 standard deviations) (Figure 5).

**Figure 3. Women’s college students experienced higher relevance in economics**

*Mean RBG factor outcomes by co-ed vs. women’s college*

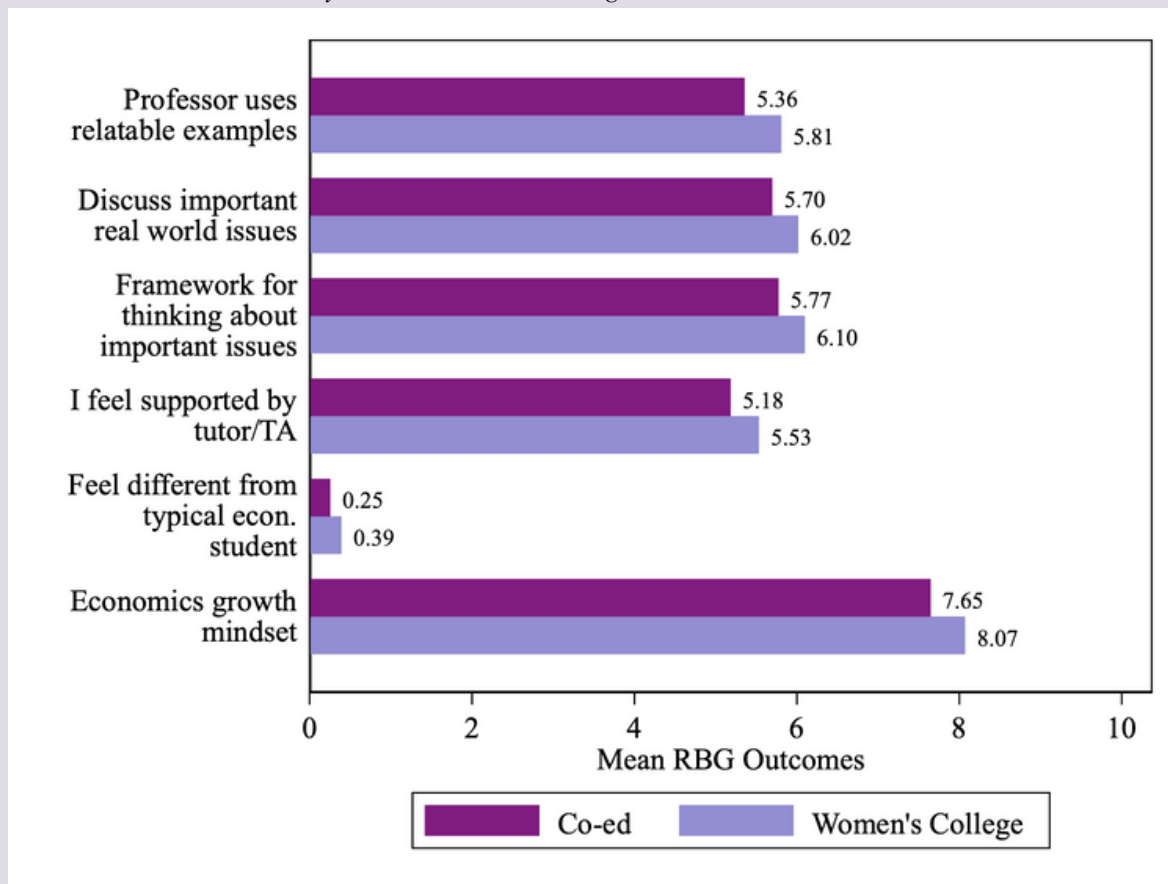


Notes: Shows standardized RBG factors, with labels bolded if differences are significant (relevance is significant)

Source: Authors’ calculations based on RBG surveys

**Figure 4. Women’s college students had higher relevance and growth mindset items but still felt different from typical economics students**

*Mean RBG item outcomes by co-ed vs. women’s college*

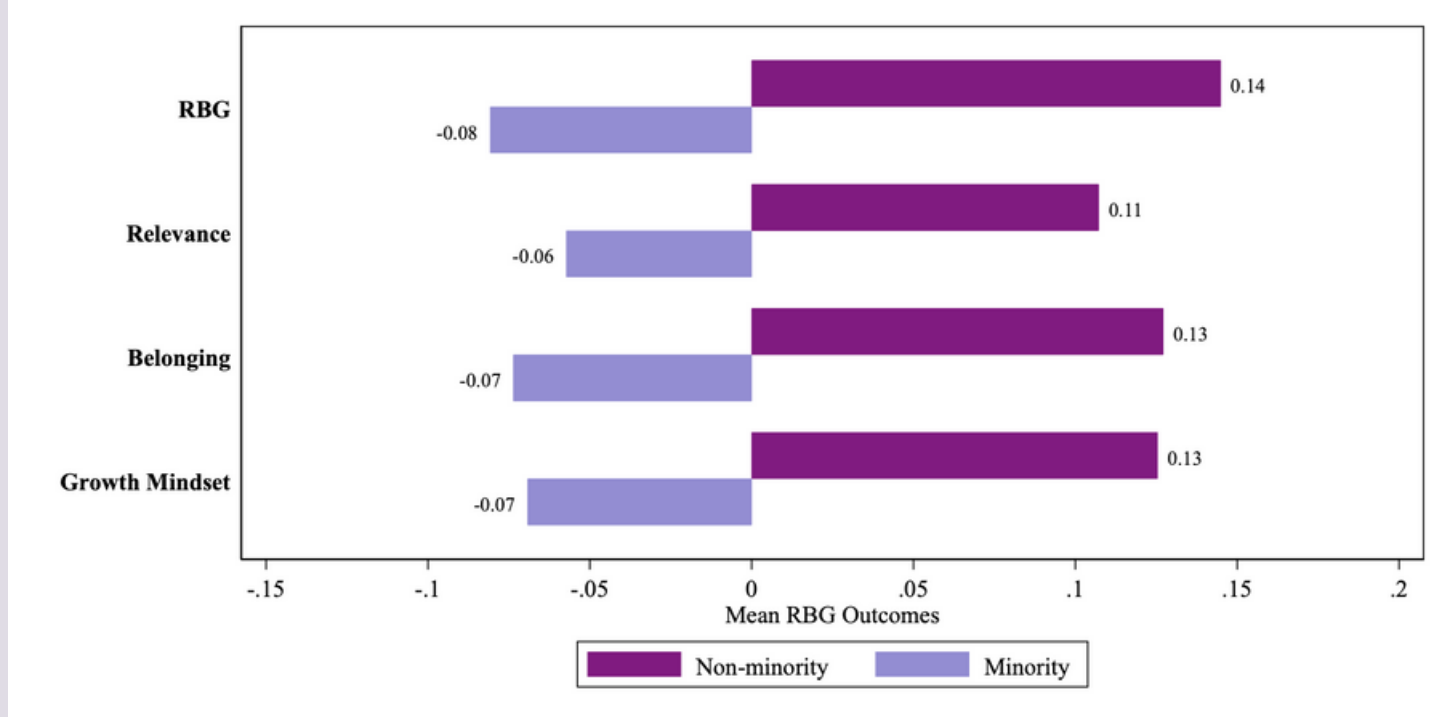


Notes: Shows the individual RBG outcome items with statistically significant differences by women’s college versus co-ed, on a 7 point scale of agreement except for “Feel different from typical econ. student” which is given as a proportion and economics growth mindset (10-point scale).

Source: Authors’ calculations based on RBG surveys

**Figure 5. Minority students had lower RBG in all dimensions: relevance, belonging, and growth mindset**

*Mean RBG factor outcomes by minority identity*



Notes: Shows standardized RBG factors, with labels bolded if differences are significant (all are significant)

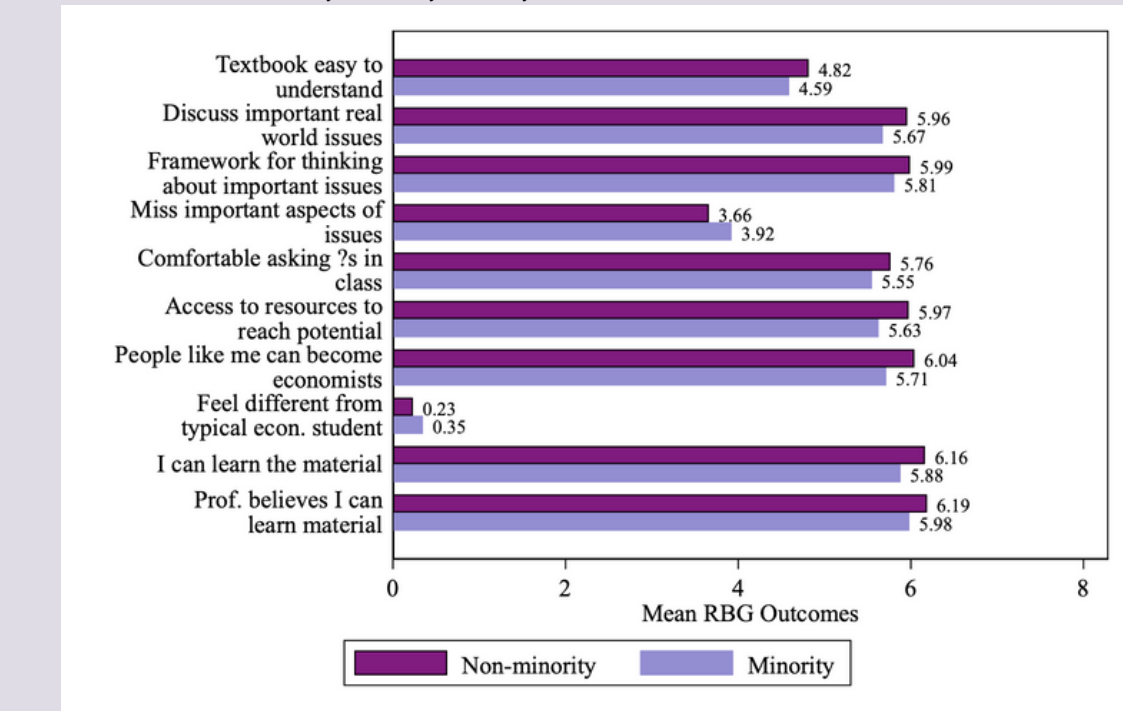
Source: Authors' calculations based on RBG surveys

The significant differences in individual items (Figure 6) signal that minority-identifying students find economics classes to be less relevant to their lives and the real world, have inadequate access to resources

they need to succeed, feel less supported and comfortable and are less likely to believe they can learn the material or that professors believe they can learn.

**Figure 6. Minority students experienced lower RBG across a number of different items**

*Mean RBG item outcomes by minority identity*



Notes: Shows the individual RBG outcome items with statistically significant differences by minority identity, on a 7 point scale of agreement except for “Feel different from typical econ. student” which is given as a proportion. Source: Authors' calculations based on RBG surveys

### How does RBG differ between PWIs and MSIs?

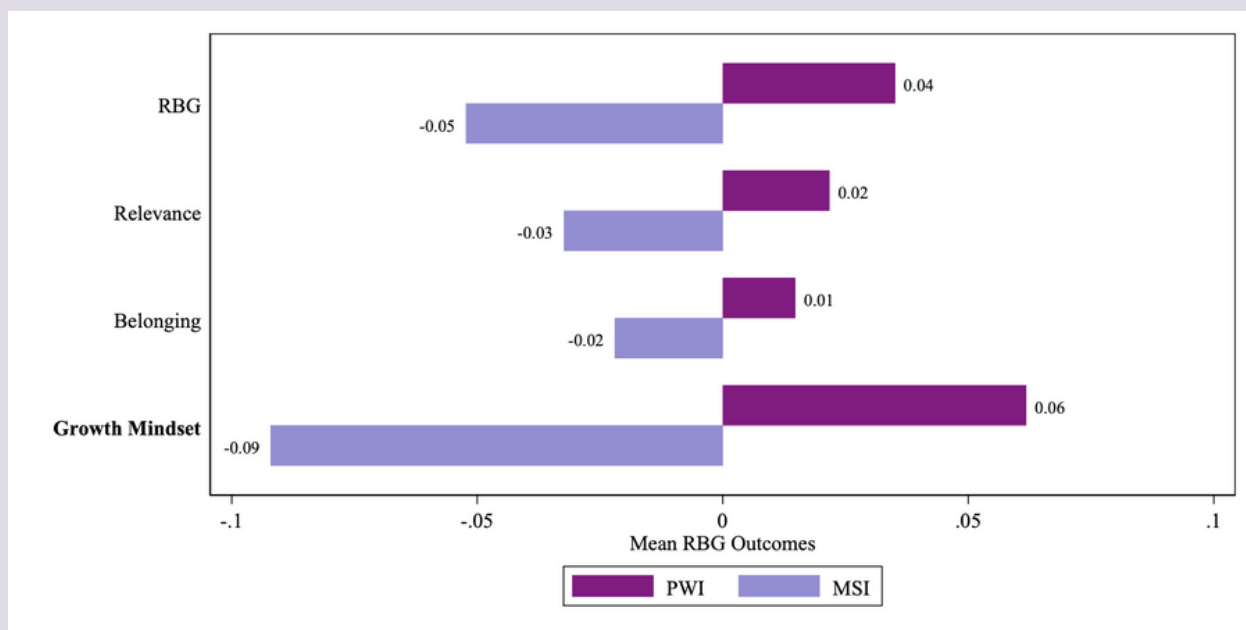
Students at MSIs have similar relevance, belonging, and overall RBG factors to PWI students but have a significantly lower growth mindset factor by 0.15 standard deviations (Figure 7). This is driven by students being less likely to agree that their professors believe they

can learn the material.

As for differences in other individual items (Figure 8), MSI students are less likely to agree that their classes discuss real world issues or build a framework for thinking about important issues. They also feel less comfortable asking questions in office hours

**Figure 7. Students at MSIs had lower growth mindset**

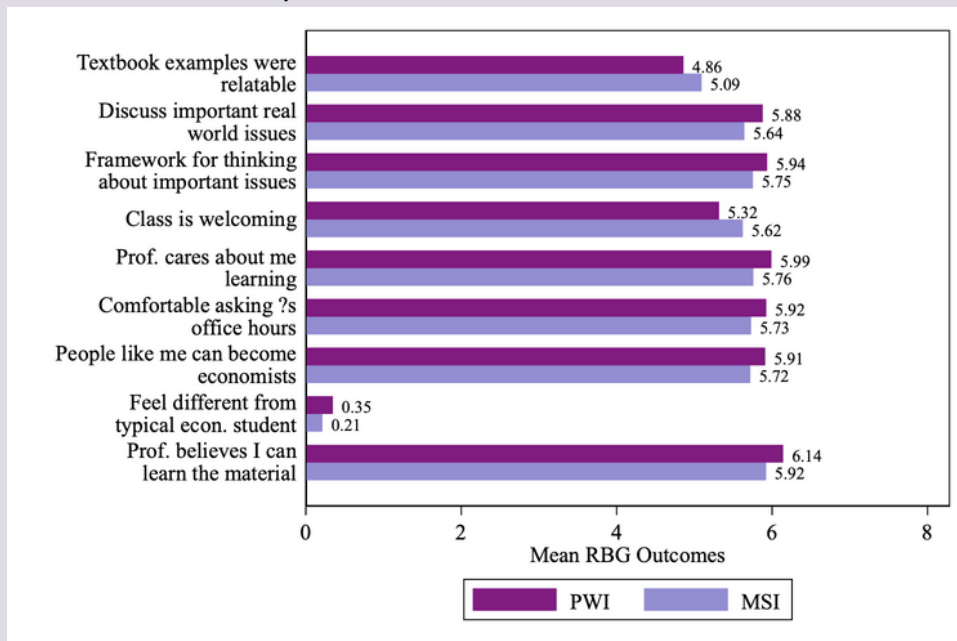
Mean RBG factor outcomes by MSI vs. PWI



Notes: Shows standardized RBG factors, with labels bolded if differences are significant (growth mindset is significant)  
 Source: Authors' calculations based on RBG surveys

**Figure 8. Students at MSIs had better RBG on some relevance and belonging items, but worse on other items**

Mean RBG item outcomes by MSI vs. PWI



Notes: Shows the individual RBG outcome items with statistically significant differences by gender, on a 7 point scale of agreement except for "Feel different from typical econ. student" which is given as a proportion.  
 Source: Authors' calculations based on RBG surveys

and are less likely to believe that their professor cares about them learning. However, MSI students are more likely to find textbook examples relatable to their lives, and to feel that their economics classes are welcoming. Interestingly, students at PWIs are more likely to report feeling different from the typical economics student but are also more likely to believe that people like them can become economists.

### **How can we increase the representation of female and racial/ethnic minority students in economics?**

In exploring differences across institutional settings, we see that students at minority-serving institutions had stronger growth mindsets than students at predominantly white institutions, and students at women's colleges had higher levels of relevance than students at co-ed colleges. While we are unable to determine whether these differences are a result of attending these types of institutions or due to differences in the students who choose to attend identity-focused institutions, these discrepancies may signal that it could be beneficial to adopt practices standard at MSIs and women's colleges at a more widespread scale. Underrepresented students are unlikely to achieve parity in RBG without structural changes in how economics departments and faculty engage with students.

#### ***Impact of Role Models***

One crucial difference between MSIs and women's colleges and PWIs and co-ed institutions may be the availability of role models in economics for underrepresented students. Among our sample,

- MSIs have more minority-identifying faculty (64%) than PWIs (21%)
- Women's colleges have more female faculty (67%) than co-ed colleges (29%)

## **Interventions in Institutions**

### **Exposure to Role Models**

Students at women's colleges are more engaged and challenged, take on more leadership roles, report higher feelings of support and connections with peers and professors, and have more significant gains in learning, supportive of a higher level of RBG (Kinzie, Thomas, Palmer, Umbach, & Kuh, 2007).

### **Representation in Introductory Classes**

Lack of representation in introductory materials may be particularly problematic since belonging at the introductory level has been emphasized as an essential site for fostering the inclusion and retention of underrepresented students (Al-Bahrani, 2022)

### ***Increasing Representation***

Guest speakers have been shown to increase persistence in economics. This effect may be more prominent when the speaker is the same gender as the student so both gender and racial/ethnic diversity among role models are essential (Patnaik, Pauley, Venator, & Wiswall, 2023; Porter & Serra, 2020).

Peer groups and peer effects may be critical; in an introductory business course, women did worse, on average, when randomly assigned to male-dominated groups (Hansen, Owan, & Pan, 2006), while another study (Booth & Hanna, 2023) found no significant impact of gender-specific section assignments on grades in introductory economics courses.

Additionally, the lessons and examples in introductory economics textbooks are disproportionately white and male. The female and BIPOC examples are likely to be portrayed as ordinary people rather than economists, policymakers, or business leaders (Krafft et al., 2022; Stevenson & Zlotnick, 2018).

Furthermore, a disproportionate number of the people pictured in these textbooks as examples of those in poverty are Black (Clawson 2002). Interventions that develop RBG for underrepresented students are also likely to be best practices that broadly increase RBG for all students and improve retention and completion. Economics remains a largely "chalk and talk" discipline (Asarta, Chambers, & Harter, 2020). For instance, a "using big data to solve economic and social problems" course at Harvard was highly rated and achieved near gender parity (Bayer, Bruich, Chetty, & Housiaux, 2020). The impact of different pedagogical and curricular approaches to economics on RBG, diversity, and persistence remains an important area for future research.

### Area for future research: socioeconomic disparities

In our multivariate regressions that accounted for differences in student background and experiences, such as income, the disparities in RBG we observed only occasionally persisted. The results suggest that socioeconomic disparities, particularly household income, may play an important role in RBG disparities. Economics PhDs are the least socioeconomically diverse of all fields (Schultz & Stansbury, 2022), and understanding socioeconomic diversity earlier in the economics pipeline is an important area for future research.

## References

- Al-Bahrani, A. A. (2022). Classroom Management and Student Interaction Interventions: Fostering Diversity, Inclusion, and Belonging in Undergraduate Economics. *The Journal of Economic Education*, 53(3), 259–272.
- Alston, M., Darity, W. A., Eckel, C. C., McNeil, L., & Sharpe, R. (2022). The Effect of Stereotypes on Black College Test Scores at a Historically Black University. *Journal of Economic Behavior and Organization*, 194, 408–424.
- Asarta, C. J., Chambers, R. G., & Harter, C. (2020). Teaching Methods in Undergraduate Introductory Economics Courses: Results From a Sixth National Quinquennial Survey. *The American Economist*, 1–11.
- Bayer, A., Bhanot, S. P., Bronchetti, E. T., & O'Connell, S. A. (2020). Diagnosing the Learning Environment for Diverse Students in Introductory Economics: An Analysis of Relevance, Belonging, and Growth Mindsets. *AEA Papers and Proceedings*, 110, 294–298.
- Bayer, A., Bruich, G., Chetty, R., & Housiaux, A. (2020). Expanding and Diversifying the Pool of Undergraduates Who Study Economics: Insights from a New Introductory Course at Harvard. NBER Working Paper Series No. 26961. Cambridge, MA.
- Booth, A., & Hanna, D. (2023). Gender in Tutorial Class and Academic Achievement: An Experiment at an Australian University. In *Twelfth Annual Conference on Teaching & Research in Economic Education (CTREE)*.
- Calkins, A., Binder, A., Shaat, D., & Timpe, B. (2023). When Sarah Meets Lawrence: The Effect of Coeducation on Women's Major Choices. *American Economic Journal: Applied Economics* (Forthcoming).
- Chari, A. (2022). The 2022 Report of the Committee on the Status of Women in the Economics Profession.
- Clawson, R. A. (2002). Poor People, Black Faces: The Portrayal of Poverty in Economics Textbooks. *Journal of Black Studies*, 32(3), 352–361.
- CSMGEP. (2022). Report of the Committee on the Status of Minority Groups in the Economics Profession (CSMGEP).
- Hansen, Z., Owan, H., & Pan, J. (2006). The Impact of Group Diversity on Performance and Knowledge Spillover -- An Experiment in a College Classroom. NBER Working Paper Series No. 12251. Cambridge, MA.
- Kinzie, J., Thomas, A. D., Palmer, M. M., Umbach, P. D., & Kuh, G. D. (2007). Women Students at Coeducational and Women's Colleges: How Do Their Experiences Compare? *Journal of College Student Development*, 48(2), 145–165.
- Krafft, C., West, K., Mcfarlane, A., Kula, E., Abdinoor, F., Weyrens, M., & Karri, W. (2022). Virtually Nonexistent: Gender and Racial Representation in Online K - 12 Economics Lessons. *Eastern Economic Journal*.
- National Center for Science and Engineering Statistics. (2021). Women, Minorities, and Persons with Disabilities in Science and Engineering: 2021. Special Report NSF 21-321. Alexandria, VA: National Science Foundation.
- Patnaik, A., Pauley, G., Venator, J., & Wiswall, M. (2023). The Impacts of Same and Opposite Gender Alumni Speakers on Interest in Economics. NBER Working Paper Series No. 30983. Cambridge, MA.
- Perna, L., Lundy-Wagner, V., Drezner, N. D., Gasman, M., Yoon, S., Bose, E., & Gary, S. (2009). The Contribution of HBCUS to the Preparation of African American Women for Stem Careers: A Case Study. *Research in Higher Education*, 50(1), 1–23.
- Porter, C., & Serra, D. (2020). Gender Differences in the Choice of Major: The Importance of Female Role Models. *American Economic Journal: Applied Economics*, 12(3), 226–254.
- Schultz, R., & Stansbury, A. (2022). Socioeconomic Diversity of Economics PhDs. *PIIE Working Paper No. 22–4*. Washington, D.C.
- Stevenson, B., & Zlotnick, H. (2018). Representations of Men and Women in Introductory Economics Textbooks. *AEA Papers and Proceedings*, 108, 180–185.
- White, A. M., DeCuir-Gunby, J. T., & Kim, S. (2019). A Mixed Methods Exploration of the Relationships between the Racial Identity, Science Identity, Science Self-Efficacy, and Science Achievement of African American Students at HBCUs. *Contemporary Educational Psychology*, 57, 54–71.