

Persistence in Economics: Differences across Identities and Institutions (aka The Impact of Institution Type on Developing RBG in Economics: Evidence from a multi-year survey)

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Working papers and policy briefs can be found at the MCDE website:
<https://www.stkate.edu/academics/shas/political-science-and-economics-department/mcde>

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Motivation

“Leaky pipeline” in economics

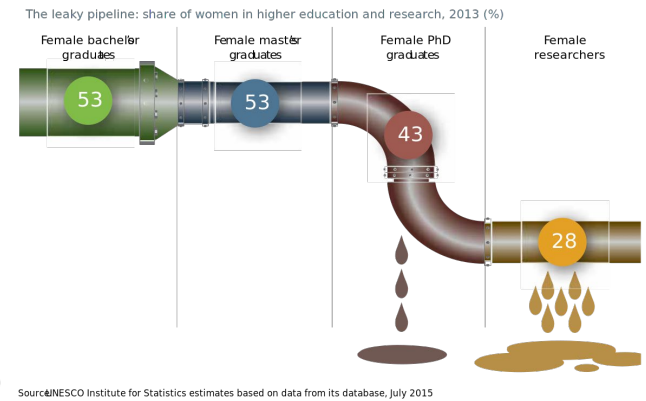
- Women are 34% of bachelor’s degrees, 18% of full professors (Chari 2023)
- Underrepresented minority (URM) students are 18% of bachelor’s degrees, 7% of full professors (CSMGEP 2023)

Relevance, belonging & growth mindset (RBG) is a potential mediator of persistence

- RBG correlates with course grades, persistence and completion of economics major (Bayer et al 2020)
- URM students and female students in introductory economics courses have lower RBG than non-URM male students (Bayer et al 2020)

Institution type is a potential mediator of RBG and of persistence

- The vast majority of underrepresented students attend less-selective institutions, including many two-year colleges and institutions that are classified as minority-serving institutions (MSIs)
- Case study evidence about identity-focused institutions (Alston et al. 2022; Edwards et al. 2023; Calkins et al. 2023; Butcher, McEwan, and Weerapana 2023) as well as role-modeling and peer effects literatures
- Are there aspects of identity-focused institutions that are generalizable?



Results Preview

RBG predicts persistence, but...

Changes in RBG don't predict changes in persistence

Persistence declines over time, but declines less for female and minority-identifying students

Institution type doesn't seem to impact change in persistence

As with all good research, we get more questions than answers.

NSF Build & Broaden Award 2126635



Baseline data collection

805 observations from 24 institutions



Baseline paper

CTREE 2023, ASSA 2024, working paper on MCDE website



Endline data collection

199 observations from 21 institutions

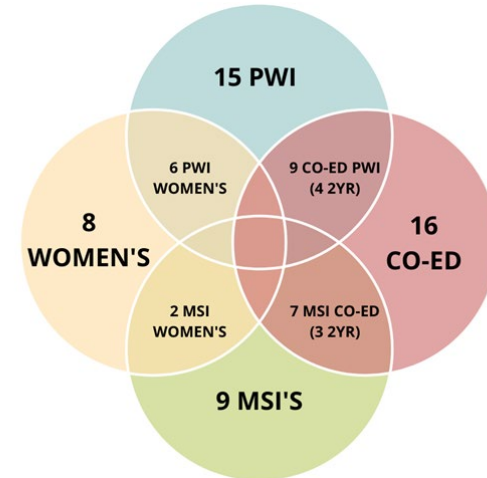


Endline paper & mini-conference

Oversampled women's colleges & MSIs

Longitudinal – student survey fall 2022 and fall 2023 (faculty survey fall 2022)

Demographic information (baseline only) and likert scale responses about perceptions and persistence in economics



Student surveys

Persistence (self-reported likelihood):

- How likely are you to take more courses in economics?
- How likely are you to pursue a degree in economics?
- How likely are you to pursue graduate study in economics?
- How likely are you to have a career in a field that will use your economics education?

RBG (individual items and principal factor analysis):

- Relevance example: “We discuss important, real world issues in economics classes”
- Belonging example: “I feel comfortable asking questions in economics classes”
- Growth mindset example: “Economics ability is something you can’t change very much – Economics ability can be developed”

Baseline evidence (initial RBG & persistence)

RBG differed by gender and racial identity & by institution type

- Female students scored higher on relevance (women's college effect?)
- Minority students scored lower on relevance, belonging and growth mindset (students at MSI's start with lower growth mindset)

Persistence differed by racial identity & institution type

- Female students had similar baseline persistence as male/non-binary students (women's colleges had higher baseline persistence)
- Minority students had lower baseline persistence than white students (MSI's had lower baseline persistence)

Longitudinal hypotheses: Institution type matters

Value-added models (endline response accounting for baseline response). Note: In this presentation, going to focus on simple t-tests, see paper for regression models.

H1 & H2: Female-identifying (minority-identifying) students at women's colleges (MSIs) will have greater change in persistence in economics than female-identifying (minority-identifying) students at co-ed (PWI) institutions.

$$ECON_{k,i,t1} = \beta_0 + \beta_1 ECON_{k,i,t0} + \beta_2 INDIV_i + \beta_3 INST_i + \beta_k X_{k,i,t0} + \varepsilon_i$$

H5 & H6: Female-identifying (minority-identifying) students at women's colleges (MSIs) develop higher senses of RBG in economics than those at co-ed (PWI) institutions. $RBG_{d,i,t1} = \beta_0 + \beta_1 RBG_{d,i,t0} + \beta_2 INDIV_i + \beta_3 INST_i + \beta_k X_{k,i,t0} + \varepsilon_i$

Endline evidence (changes in RBG & persistence)

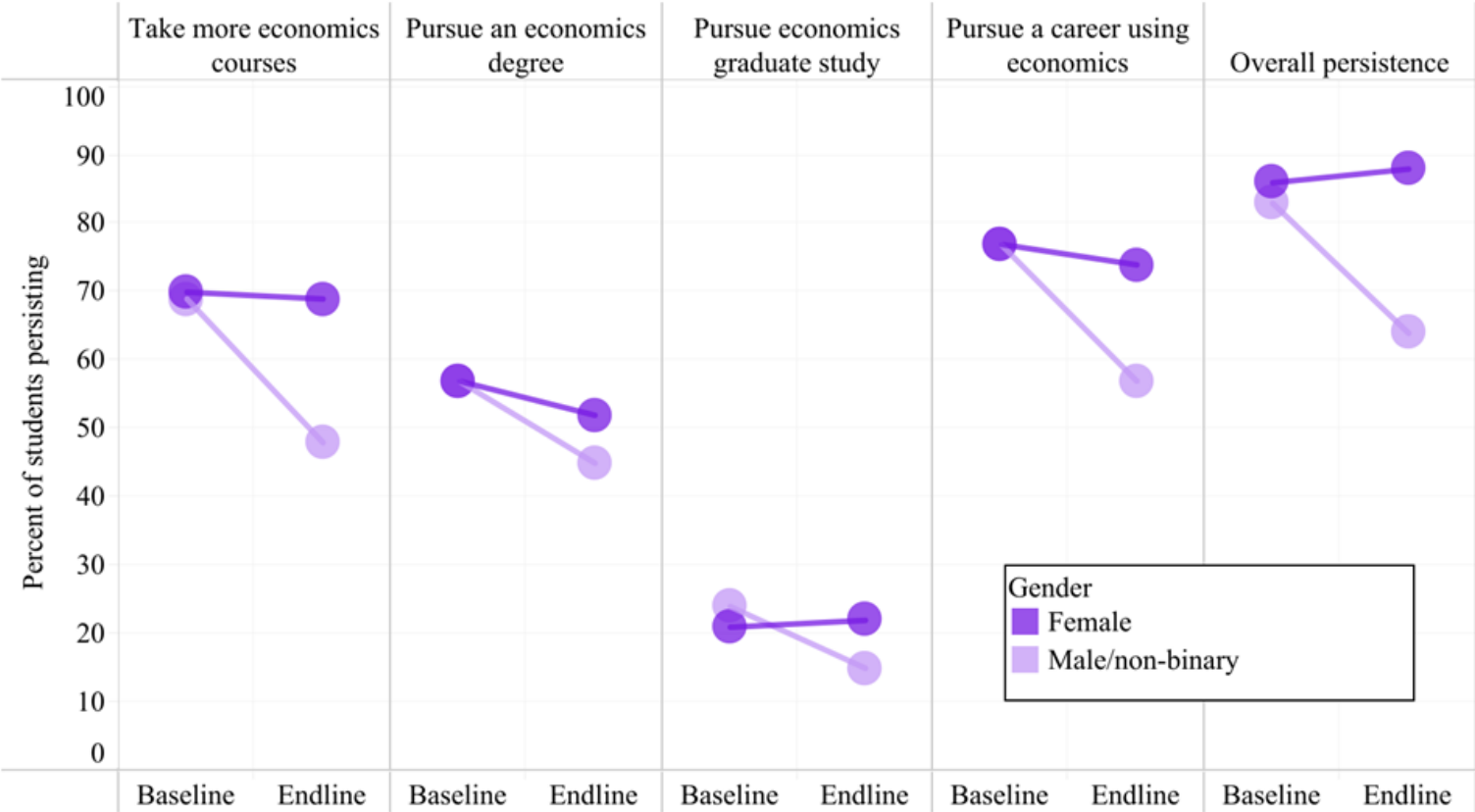
Caveats:

- Disappointing levels of attrition (BUT good institutional representation)
- Surveys only 1-year apart (BUT improvement on point in time)
- Selection bias, students choose institutions

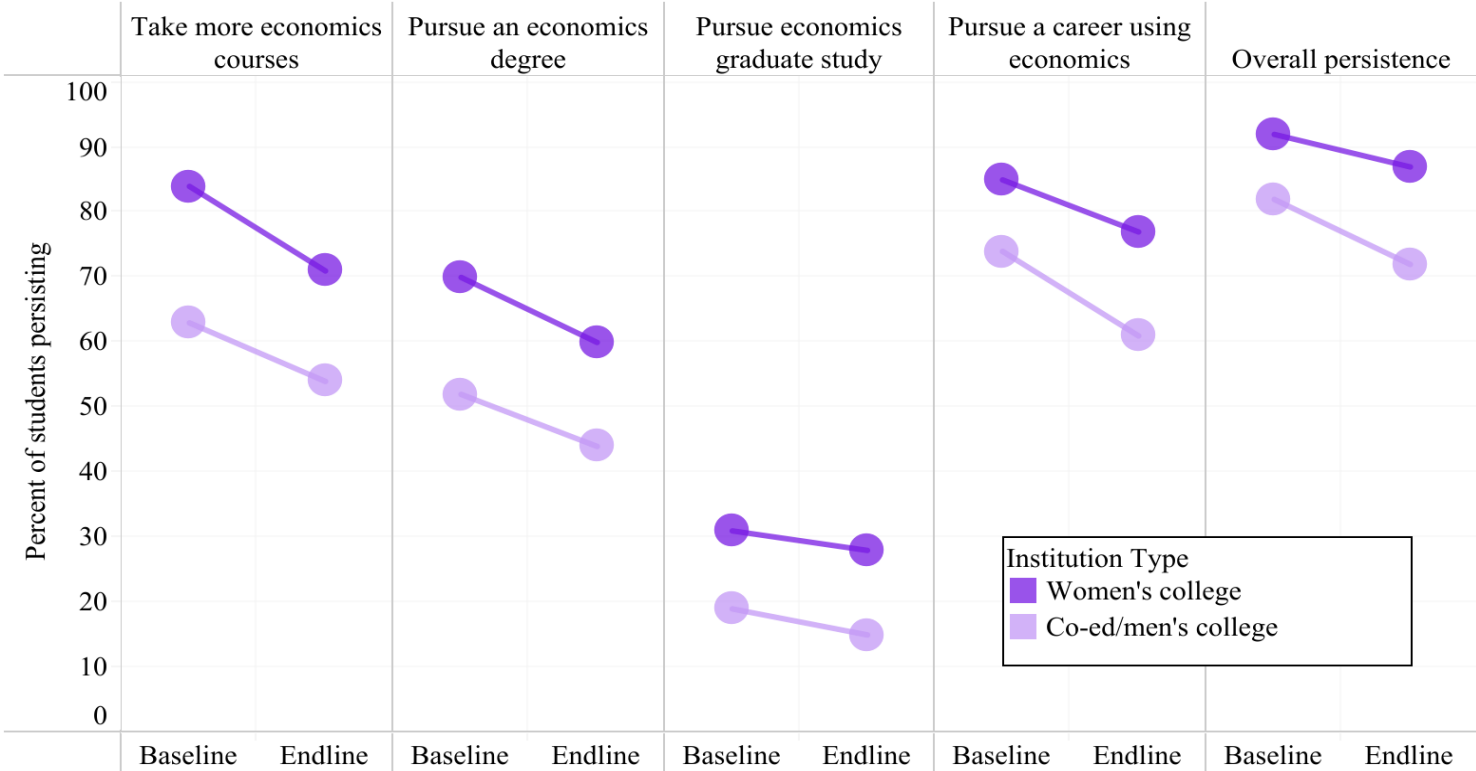
Key findings:

- Persistence declines are the general rule (positive coefficients on dummy variables should be read as “less negative” or “smaller declines”)
- Female and minority students show smaller declines or slight increases in persistence compared to male/non-binary and white students (selection story?)
- Women’s colleges start out with higher relevance & persistence, MSIs start out with lower RBG and have smaller declines in persistence

Endline Paper – Gender Change in Persistence



Endline Paper – Women’s Colleges vs. Co-ed Change in Persistence



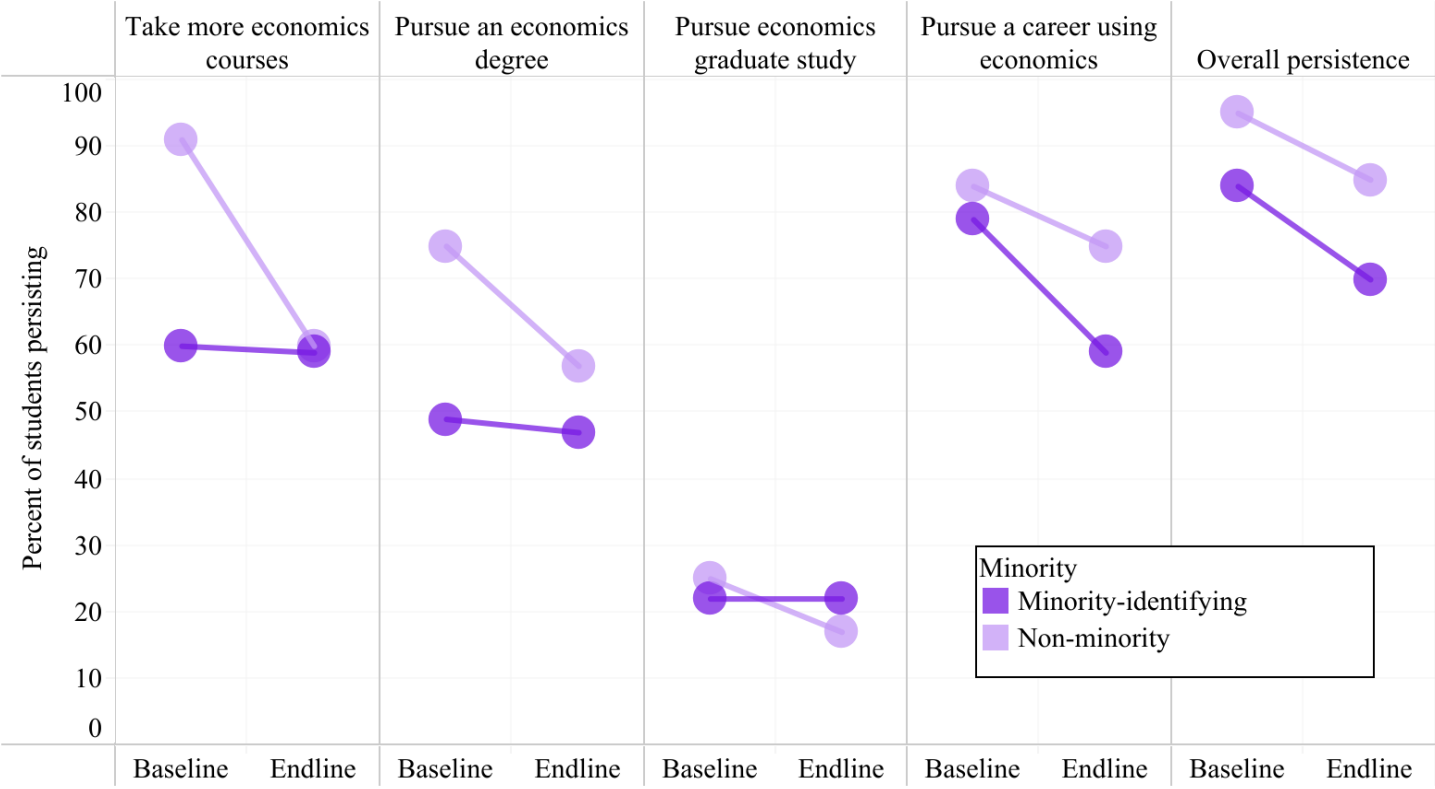
Persistence, female-identity & women's colleges

Women see smaller declines in persistence than men/NB

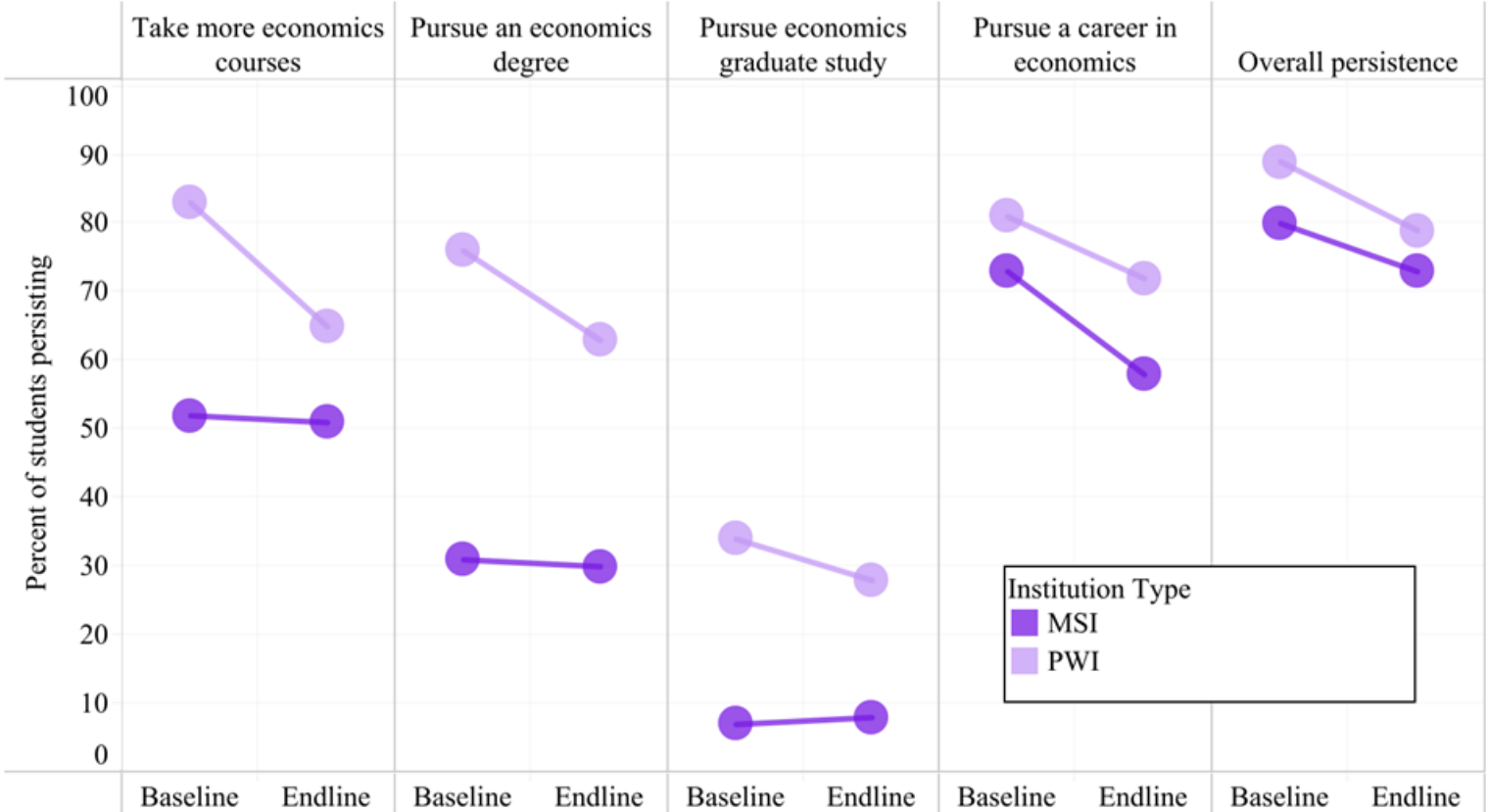
Why? Not sure...

- Not moderated by changes in RBG (if we control for change in RBG, we still see positive coefficient on female)
- Not moderated by institution type (women's colleges started out with high persistence, no difference in change)
- Could be a selection story: women who choose economics (or who have made it to our sample) are already persist-y types... what does this mean for interventions? (earlier is better!)

Endline Paper – Minority-identifying Change in Persistence



Endline Paper – MSI vs. PWI Change in Persistence



Persistence, minority-identity & MSIs

Minority students see smaller declines in persistence than white students

Why? Not sure...

- Minority students start off with lower persistence (less distance to fall)
- In t-tests, see positive effect of MSIs on majoring in economics
- In value-added regressions, see positive effect of MSIs on econ grad school
- MSIs have positive effect on growth-mindset (started with lower growth mindset)
- Some evidence of peer effects. What does this mean for interventions? (mentoring!)

RBG as a Mediator

Baseline RBG does predict baseline persistence

Change in RBG does not predict change in persistence

Future research...

- Differentiate between intro classes and upper level classes
- Longer time in between surveys to develop RBG
- Investigate course and faculty covariates that relate to change in RBG

Where do we go from here?

Know... **RBG at baseline matters.** Need to learn...

- what influences changes in RBG
- RBG→Persistence or Persistence→RBG

Know... **persistence declines for all groups.** Need to learn...

- what prevents people from selecting out
- which decision points are most critical

Know... **context matters.** Need to learn...

- HBCUs vs. other types of MSIs
- intersections of race & gender & class

Papers - MCDE Website



Data - Open ICPSR



Thank you!