The impact of gender-neutral incentives for researchers on the STI productivity gap: Evidence from Paraguay

Diego Aboal
Maren Vairo
with contributions by Federico Veneri

Introduction

There is extensive evidence pointing to the existence of a gender gap in the labor market: women receive lower wages, are underrepresented in several occupations and work fewer hours than men, while having less access to productive inputs (Cuberes and Teignier, 2015).

STI activities are no different to this reality...

- In LAC, only 6.5% of all patents filed in 2006-2011 were registered solely by women, 69.6% solely by men and 23.9% were filed jointly (Morales and Sifontes, 2014)
- This gap is most likely related to low female participation in Science, Technology, Engineering and Mathematics (STEM) disciplines (Castillo et al., 2014).

Why is there a gender gap in STI?

Several explanations have been put forward for the gender gap in STI:

From the **demand** side:

- Unequal treatment regarding wages (Petersen et al., 2000) and evaluations received when applying for academic positions (Steinpreis et al., 1999)
- Lower propensity by faculty members to write positive recommendations for female candidates (Trix and Pzenka, 2003)
- Women are frequently excluded from networking practices (UNESCO, 2007)

From the **supply** side:

- The prevailing male-dominated culture in STI might generate an unpleasant environment for women to work (Fox, 2005)
- Reinforced by discrimination and cultural stereotypes in higher education (Blickenstaff, 2005)
- The traditional conflict between motherhood and professional development

Objective

The questions to be addressed in this paper are:

Objective

The questions to be addressed in this paper are:

- Which is the impact on academic productivity (publication, technical outputs, number of theses directed, education of researchers, etc.) of men and women of a "gender-neutral" program aimed at promoting STI activities (PRONII) in Paraguay? Is there evidence of differential impacts on men and women?

Objective

The questions to be addressed in this paper are:

- Which is the impact on academic productivity (publication, technical outputs, number of theses directed, education of researchers, etc.) of men and women of a "gender-neutral" program aimed at promoting STI activities (PRONII) in Paraguay? Is there evidence of differential impacts on men and women?
- Was there a pre-existing gender gap in academic productivity?

Objective

The questions to be addressed in this paper are:

- Which is the impact on academic productivity (publication, technical outputs, number of theses directed, education of researchers, etc.) of men and women of a "gender-neutral" program aimed at promoting STI activities (PRONII) in Paraguay? Is there evidence of differential impacts on men and women?
- Was there a pre-existing gender gap in academic productivity?
- Does the program implicitly (at the selection stage) discriminate against women?

Results: Gender and researchers' output

We find a bias against women in the number of bibliographic outputs and papers published in scientific journals. We did not find a bias in the number of technical outputs, papers published in Scopus journals and theses directed.

Results: Probability of entering PRONII

- Gender does not affect program participation
- Entrance into PRONII is highly explained by the program's pre-established selection criteria
- Area of science appears as a source of bias in program allocation though

Results: The gender-specific impact of PRONII

- Candidates: Overall positive impact on publications in scientific journals. This effect is attributable to male researchers, so the program would contribute to widening the gap at this level
- Level 1: Overall positive impact on ongoing direction of theses, and technical and bibliographic production. Impacts on technical and bibliographic production are explained by women, so here we find a closure in the gap

Level 2:

- A negative effect on Master formation in female researchers and a positive effect on technical production in male researchers would contribute to widening the gender gap
- The negative (positive) effect on men's (women's) ongoing direction of theses and the positive impact on women's quality of publications would contribute to closing the gap

Conclusions and policy implications

- The findings show a pre-existent gender gap among PRONII researchers. Other things equal, female researchers have a smaller number of bibliographic outputs and papers published in scientific journals than male researchers.

Conclusions and policy implications

- The findings show a pre-existent gender gap among PRONII researchers. Other things equal, female researchers have a smaller number of bibliographic outputs and papers published in scientific journals than male researchers.
- The results show that the impact of the program is not homogeneous across genders and PRONII levels, which would lead to impacts in the gender gap in researchers' performance.

Conclusions and policy implications

- The findings show a pre-existent gender gap among PRONII researchers. Other things equal, female researchers have a smaller number of bibliographic outputs and papers published in scientific journals than male researchers.
- The results show that the impact of the program is not homogeneous across genders and PRONII levels, which would lead to impacts in the gender gap in researchers' performance.
- We find that the program contributes to closing the gap in bibliographic production in Level 1, and in the direction of theses and quality of publications in Level 2

Conclusions and policy implications

- The findings show a pre-existent gender gap among PRONII researchers. Other things equal, female researchers have a smaller number of bibliographic outputs and papers published in scientific journals than male researchers.
- The results show that the impact of the program is not homogeneous across genders and PRONII levels, which would lead to impacts in the gender gap in researchers' performance.
- We find that the program contributes to closing the gap in bibliographic production in Level 1, and in the direction of theses and quality of publications in Level 2
- Given that PRONII is a recently implemented program, the impacts we identified are those associated to the very short run

Conclusions and policy implications

- The results might help dimension the problem of the gender gap in STI and think about policy initiatives to close it

Conclusions and policy implications

- The results might help dimension the problem of the gender gap in STI and think about policy initiatives to close it
- The evidence of a gender differentiated impact of PRONII on scientific productivity shows that gender-neutral programs can have non-neutral impacts

Conclusions and policy implications

- The results might help dimension the problem of the gender gap in STI and think about policy initiatives to close it
- The evidence of a gender differentiated impact of PRONII on scientific productivity shows that gender-neutral programs can have non-neutral impacts
- We expect the evidence presented here to contribute to a better design of these programs in the region, in particular, in terms of explicitly incorporating gender considerations.

The impact of gender-neutral incentives for researchers on the STI productivity gap: Evidence from Paraguay

Diego Aboal
Maren Vairo
with contributions by Federico Veneri