

Accepted Manuscript

The economics behind the math gender gap: Colombian evidence on the role of sample selection

Juan Sebastián Muñoz



PII: S0304-3878(18)30491-7

DOI: [10.1016/j.jdeveco.2018.08.007](https://doi.org/10.1016/j.jdeveco.2018.08.007)

Reference: DEVEC 2281

To appear in: *Journal of Development Economics*

Received Date: 19 September 2017

Revised Date: 17 April 2018

Accepted Date: 6 August 2018

Please cite this article as: Muñoz, Juan.Sebastiá., The economics behind the math gender gap: Colombian evidence on the role of sample selection, *Journal of Development Economics* (2018), doi: 10.1016/j.jdeveco.2018.08.007.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

The Economics behind the Math Gender Gap: Colombian Evidence on the Role of Sample Selection

Juan Sebastián Muñoz*

Abstract

The literature that has previously shown that boys outperform girls in math tests has failed to explain the underlying causes of the phenomenon. This math gender gap has been documented to vary across countries, and shown to grow as students advance through school. In this paper I suggest that these patterns may be explained by sample selection caused by gender differences in schooling's opportunity costs, which lead lower-achieving males to drop out. I present and test the implications of a labor supply model that examines the opportunity cost of school attendance and, thereby, the observed math gender gap. Using an exogenous policy change, the launch of a conditional cash transfers program in Colombia, I estimate that sample selection explains between 50 percent and 60 percent of the gap. Estimates of non-parametric bounds show that selection in the lower quantiles of the male distribution explains a significant portion of the gap.

Keywords: Mathematics, Gender, Sample Selection

JEL codes: I21, I25, J16, J24

1. Introduction

It has been widely documented that male students outperform female students on standardized math tests. Many possible explanations - including biological, social and cultural causes - have been put forward, no consensus explanation for the math gender gap has thus far emerged.¹ Recent evidence has additionally shown that the math gender gap varies extensively across countries, and its magnitude increases with each additional schooling grade (i.e. increases monotonically) (Fryer and Levitt, 2010; Bharadwaj et al., 2016; Contini et al., 2017). Cross-country variation has been largely attributed to gender-biased environments (Guiso et al., 2008; Pope and Sydnor, 2010; Fryer and Levitt, 2010). Monotonic increases have not yet been fully explained, at least for the United States, Chile and Italy (Fryer and Levitt, 2010; Bharadwaj et al., 2016; Contini et al., 2017) where the phenomenon has been studied.

*Corresponding author: Juan Sebastián Muñoz. PhD Student, Department of Economics, *University of Illinois at Urbana Champaign*. 214 David Kinley Hall, 1407 West Gregory Drive, Urbana, IL 61801. Email: munozmo2@illinois.edu. I am very grateful to Rebecca Thornton, Eliza Forsythe, George Deltas, Roger Koenker, Evan Riehl, Sergio Ocampo, Juan Herreño, and Mathieu Pedemonte for very valuable comments. I also want to thank participants at the *Applied Micro Research Lunch* at the University of Illinois, and participants at *Lacea-Lames 2017*. Two anonymous referees provided very useful feedback. Andrés Herreño, at the *Departamento para la Prosperidad Social*, provided invaluable help with the data. All the remaining mistakes are solely my responsibility.

¹In section 2 I will discuss the big and very recent body of literature on the topic.

Download English Version:

<https://daneshyari.com/en/article/11004827>

Download Persian Version:

<https://daneshyari.com/article/11004827>

[Daneshyari.com](https://daneshyari.com)