Literature Review

Most of the literature surrounding gender segregated education and its relation to labor market outcomes specifically focuses on female students and math performance. This is due to data showing women are less likely to pursue careers in high paying STEM fields in most societies (cite something). The lack of women in the STEM fields contributes to the gender wage gap, as these careers tend to have high wages.

One such study focusing on the gender segregated classes and student performance was conducted by Eisenkopf, Hessami, Fischbacher, and Ursprung using data from Switzwerland. In this study, they found that there is a positive relationship between female student performance in mathematics and singe sex schooling, and that this effect actually increases if there is a male teacher. (Eisenkopf et al., 2011)

The researchers also conducted a survey showing that females educated in single sex settings rate their mathematics performance positively and attribute this to hard work as opposed to special talent or chance(Eisenkopf et al., 2011)

. To summarize, this study supports the idea that gender segregated education insulates female students from stereotype threat, the concept that a people often internalize negative stereotypes such as “boys are better at math”, producing anxiety and negative performance in an area.

Another study focusing on gender segregated schooling and female performance in mathematics was conducted by Smith and Evans using data from New Zealand. In this study, the researchers begin by pointing out how, according to UNESCO, the lack of women in STEM occupations is not an issue and even “reversed” within Eastern Europe and muslim majority countries, where gender segregated schooling is the norm, and that this suggests there are cultural factors behind the international gender STEM disparity(Smith & Evans, 2024).

They then explore and analyze public school data in New Zealand, which is plentiful, given that the majority of the gender segregated schools in the country are state ran rather than private. The results of their research found that boys from higher socioeconomic households and girls from lower socioeconomic households in single sex schools perform much better in science and mathematics than their counterparts in co-ed learning environment(Smith & Evans). This study also points towards reduced stereotype threat as a key mechanism underlying this relationship, as well as deliberate messaging encouraging girls to pursue careers in STEM(Smith & Evans, 2024)

A more novel approach to studying the gender math performance disparity was taken by C. Borra, M. Iacovou, and A. Sevilla. In their study, they examined indicators that could point to potential biological causes of this disparity by using markers for puberty alongside academic marks during various stages of children’s lives. This was only possible using data from British 1958 National Child Development Study (NCDS) which tracked various aspects of children’s physical and social lives(and is still ongoing). The authors introduce further evidence that the factors behind gender math performance disparity are social rather than biological. This evidence involved examining pre-pubescent math performance of students and observing changes as the children underwent the prominent changes and sexual dimorphism that happens during puberty, such as breast formation. Their analysis showed that these changes in performance are more evident with outward signs of puberty more so than unseen signs of puberty such as pubic hair growth, and that these changes vary by the children’s early self-perceived math abilities(Borra et al., 2023).

These 3 studies, as mentioned, were aimed at exploring the relationship between gender and labor market outcomes, by exploring math performance. However, there is other research that focuses directly on the gender composition of learning environments and labor market outcomes.

One approach in this area was taken by (Lee & Nakazawa, 2022)

using data from Korean School districts in Seol and other major metropolitan areas. They found that graduating from a single sex school significantly lowered women’s wages post-graduation. Their data also showed that women leaving these schools were more likely to enter fields such as healthcare that have a much higher presence of female workers. Lee and Nakazawa argue that the instruments beneath these differences in labor outcomes are due to these individuals having more anxiety in mixed gender environments. The authors further showed that the women leaving these single sex schools are more likely to be less satisfied with their social skills.

Another study conducted by researchers using data from the University of Canterbury in Australia had completely different results. This research focused solely on students studying engineering, a high earning STEM field. They found that females graduating from single sex schools make up 11.3 percent of female graduates entering the university overall, but 56% of the female students in the university’s engineering program (Docherty et al., 2020).

We argue that the mixed results of these studies suggest that varying cultural factors are at play.

One final study to mentioned that focuses more closely on the \_\_\_ this study will \_\_\_. This research was conducted by Kirabo Jackson using data from Trinidad and Tobago. In this country, the Ministry of education converted 20 coed schools deemed as low-performing to single sex schools in an attempt to address socioeconomic disparities. This conversion happened in phases, in which students admitted prior to 2010 stayed in co-ed classes while incoming students were placed into single sex classes (Jackson, 2021). The country’s Ministry of Education also restricted other changes to ensure that issues such as the replacement of teachers were minimized. Analyzing the data, of different cohorts, Jackson found that both boys and girls perform better academically under the single sex program and have lower rates of arrests and teen pregnancies.

The data that we will use comes from the U.S. states of Texas and Florida. These two have the highest number of single sex schools in the country(cite), and are at the forefront of implementing gender segregated educational envuornments in order to \_\_\_ low income children. We gathered data from the Texas State Department of Education consisting of

We will examine relationshsps between single gender schooling and behavior as well as academic performance, using

Later in the study, mention self selection bias and how each stufy corrected for that, as well argue that there may be prominent cultural differences and how specific messaging and encouragement towards stem would be best.

There is also literature that directly explores single sex education and labor market outcomes using data from long term studies such as the British \_\_\_\_ that includes information on wages and occupations following students’ entrances into the labor market.

Smith, A., Evans, T. Gender Gap in STEM Pathways: The Role of Gender-Segregated Schooling in Mathematics and Science Performance. *NZ J Educ Stud* **59**, 269–287 (2024). <https://doi.org/10.1007/s40841-024-00320-y>

(Lee & Nakazawa, 2022)

*Lee, Y., & Nakazawa, N. (2022). Does single-sex schooling help or hurt labor market outcomes? Evidence from a natural experiment in South Korea. Journal of Public Economics, 214, 104729-.* [*https://doi.org/10.1016/j.jpubeco.2022.104729*](https://doi.org/10.1016/j.jpubeco.2022.104729)

Borra, C., Iacovou, M., & Sevilla, A. (2023). Adolescent development and the math gender gap. *European Economic Review*, *158*, 104542-. <https://doi.org/10.1016/j.euroecorev.2023.104542>

(Borra et al., 2023)

Dewan, P., Ray, T., Roy Chaudhuri, A., & Tater, K. (2024). Gender peer effects in high schools: Evidence from India. Journal of Economic Behavior & Organization. Pages 470-494, ISSN 0167-2681, <https://doi.org/10.1016/j.jebo.2024.02.002>

(Dewan et al., 2023)

Eisenkopf, G., Hessami, Z., Fischbacher, U., & Ursprung, H. (2011). Academic Performance and Single-Sex Schooling: Evidence from a Natural Experiment in Switzerland. *IDEAS Working Paper Series from RePEc*. Pages 123-143, ISSN 0167-2681, <https://doi.org/10.1016/j.jebo.2014.08.004>

(Eisenkopf et al., 2011)

Docherty, P. D., Fox-Turnbull, W. H., Naswall, K., Homewood, A., Bradley, H., Zaka, P., & Chase, J. G. (2020). The contribution of gender segregated secondary education on the progression to engineering. Australasian Journal of Engineering Education, 25(1), 31–38. <https://doi.org/10.1080/22054952.2020.1788254>

(Docherty et al., 2020)

*Jackson, C. K. (2021). Can Introducing Single-Sex Education into Low-Performing Schools Improve Academics, Arrests, and Teen Motherhood? The Journal of Human Resources, 56(1), 1–39.* [*https://doi.org/10.3368/jhr.56.1.0618-9558R2*](https://doi.org/10.3368/jhr.56.1.0618-9558R2)

(Jackson, 2021)