hw_6

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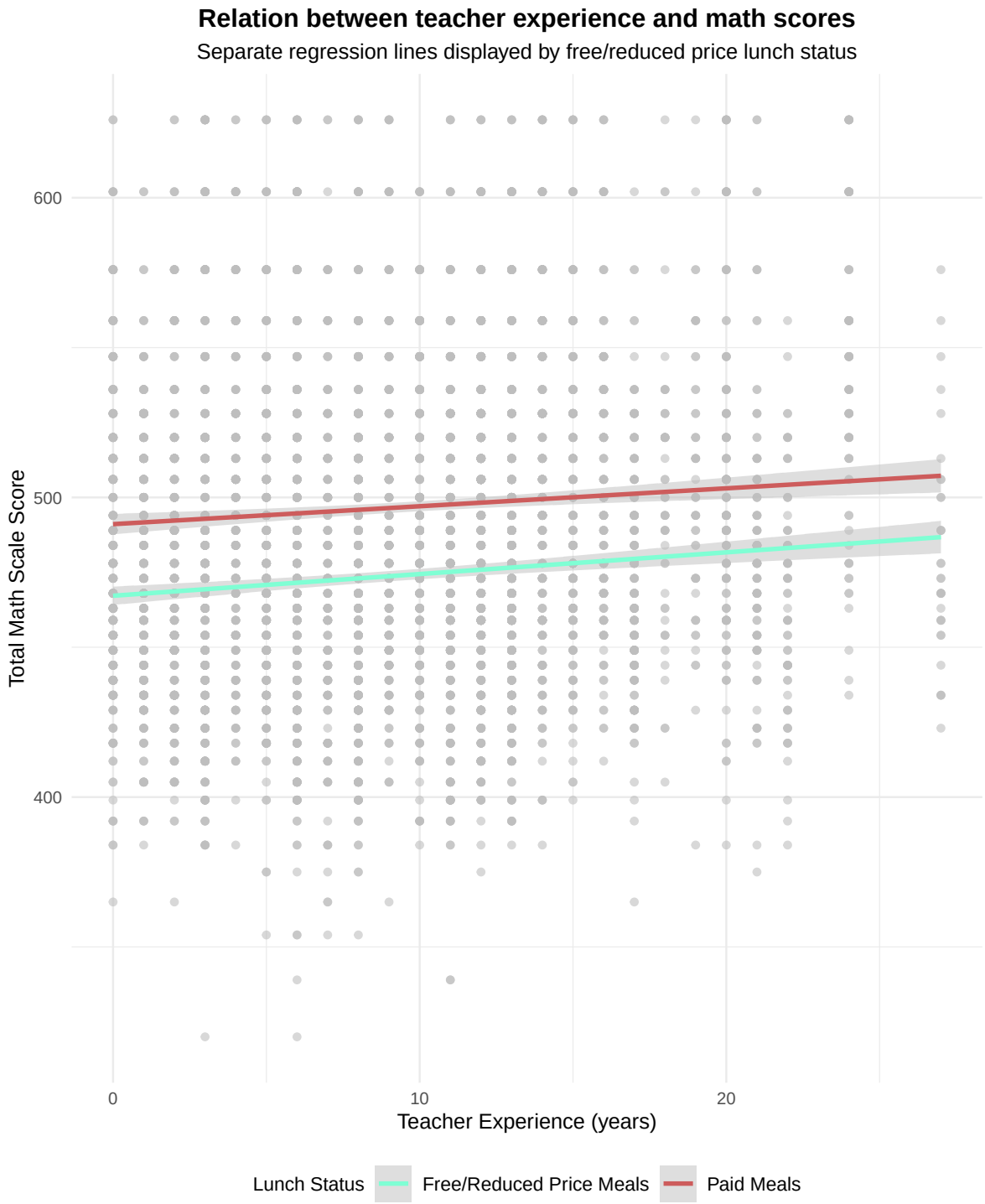
We used the following packages for this assignment: knitr (Xie 2025), tidyverse (Wickham et al. 2019), Rio by Chan et al. (2023), and here (Müller 2025).

We also reviewed the website for the National Student Clearinghouse Research Center (National Student Clearinghouse Research Center 2025) as it provides information on persistence and retention.

sex	frl	math_mean	math_sd	rdg_mean	rdg_sd
boy	no	492.85	46.34	441.46	32.32
boy	yes	469.87	46.09	425.38	26.63
girl	no	501.21	45.96	448.54	34.52
girl	yes	477.51	46.30	430.80	27.42

This table describes the mean and standard deviation on math and reading scores by sex and free and reduced lunch (frl) status. The data show that students, regardless of sex, show higher math and reading scores on average when they are not also on free and reduced lunch. Furthermore, we see a higher math and reading score average for girls than for boys. There doesn't seem to be any sort of colliding effect between sex and frl status, as the difference in the mean between boys on frl and girls on frl is about the same as the diffferent between boys not on frl and girls not on frl for both reading and math scores.



The graph shows that math scores increase slightly as teacher experience increases (in years),

indicating a positive relationship. While both groups benefit from teachers with more years of experience, students who receive free or reduced-price lunch consistently score lower than those who do not, highlighting a socioeconomic achievement gap.

References

Chan, Chung-hong, Thomas J. Leeper, Jason Becker, and David Schoch. 2023. *Rio: A Swiss-Army Knife for Data File i/o*. https://cran.r-project.org/package=rio.

Müller, Kirill. 2025. *Here: A Simpler Way to Find Your Files*. https://doi.org/10.32614/CRAN.package.here.

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Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.

Xie, Yihui. 2025. *Knitr: A General-Purpose Package for Dynamic Report Generation in R*. https://yihui.org/knitr/.