Summer Data Summary

Each year, Kids Read Now hires a third-party data firm to analyze the change in reading scores from spring to fall for those who participated in the program. We then compare those summer gains and losses to students who did NOT participate in Kids Read Now to see if there were any meaningful differences. Independent analysis consistently shows that Kids Read Now works, and the results get stronger each year.

Mile High

The data distilled.

KRN students GAINED 3 days worth of reading skills PER BOOK READ

Students who completed the program GAINED nearly a month of reading skills vs. those who didn't participate.

Students who participated in KRN for two or more years GAINED 1.4 months of reading skills vs. those who didn't participate.

Plain English

All of the numbers, algorithms, and equations translated into a more readable format.

- The fit is reasonably good.
- The Constant Intercept is not particularly easy to interpret in this model, it tells the expected score of a student that had an average score of 0, read 0 books, didn't participate previously, and was not economically disadvantaged.
- This is not easily interpreted in the month based model. Students typically do 10% better than their mean of their Fall 2016, Winter 2017, and Spring 2017, but that score is in the student's grade equivalent.
- Students that read books tend to do better. For each book a student reads in KRN their average improvement is equivalent to 0.0926 months of schooling.
- Students that participated previously in KRN on average have a higher schore by the e3quivalent of 1.4044 months of schooling.
- Students that are listed as economically disadvantaged were found to score worse than their counterparts with all other factors held equal at a level equivalent to 1.2001 months of schooling on average.

Each of these statements describes findings about how students performed in comparison to their peers is all other factors are held constant.

This was done by mapping from the student's scores to the STAR reading assessment, and then estimating the score in STAR's Grade Equivalent (GE) score divided by 12, to approximate a students performance in terms of a number of months of equivalent schooling. This is intended to provide an estimate of the features impacting the student's performance in terms of the number of months of schooling equivalent, a parameter that is of particular interest to educators.

- On average we find that students that read books improved their reading scores in Fall 2017 by the equivalent of 0.1 months of schooling for each book that they read.
- On average we find that students that participated previously in KRN scores higher in Fall 2017 than their counterparts by the equivalent of about 1.4 months of schooling.
- On average, we find that students that are classified as economically disadvantaged scored lower in Fall 2017 when compared to their counter parts by the equivalent of 1.2 months of schooling.

The Microscope -

Numbers only a statistician can love.

MODEL BUILT ON SCORES THAT ARE CONVERTED TO MONTHS

- We have changed the model to predict a version of the fall 2017 scores that have been converted into a number of months equivalent.
- This puts the coefficients in terms of the number of months of schooling equivalent, instead of a raw score.
- It seems like the most appropriate method for adapting the results to be in terms of the number of months of schooling equivalent instead of a STAR score equivalent.

PARAMETERS OF INTEREST TO KRN

- Adj. R-squared = 0.784
- ConstantIntercept = 0.9830 +- 0.498 (pvalue=0.049)
- MappedMeanScoreMonths = 1.0972 +- 0.015 (pvalue=0.000)
- BooksRead_x = 0.0926 +- 0.047 (pvalue=0.049)
- ParticipatedPreviously_numeric = 1.4044 +- 0.376 (pvalue=0.000)
- EconDisadv_numeric = -1.2001 +- 0.350 (pvalue=0.001)

INTERPRETING THE MODEL RESULTS

- The fit is reasonably good.
- The ConstantIntercept is not particularly easy to interpret in this model. It tells the expected score of a student that had an average score of 0, read 0 books, didn't participate previously, and was not economically disadvantaged.
- This is not easily interpreted in the month based model. Students typically do 10% better than their mean of their Fall 2016, Winter 2017, and Spring 2017, but that score is in the student's grade equivalent, which is hard to interpret and is not easily accessible.
- Students that read books tend to do better. For each book a student reads in KRN their average improvement is equivalent to 0.0926 months of schooling.
- Students that participated previously in KRN on average have a higher score by the equivalent of 1.4044 months of schooling.
- Students that are listed as economically disadvantaged were found to score worse than their counterparts with all other factors held equal at a level equivalent to 1.2001 months of schooling on average.

- Adj. R-squared = 0.784
- ConstantIntercept = 0.98 +- 0.50 (pvalue=0.049)
- MappedMeanScoreMonths = 1.10 +- 0.02 (pvalue=0.000)
- BooksRead_x = 0.09+- 0.05 (pvalue=0.049)
- ParticipatedPreviously_numeric = 1.40 +- 0.38 (pvalue=0.000)
- EconDisadv_numeric = -1.20 +- 0.35 (pvalue=0.001)