

An Inquiry Into Attendance Rates

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What and How?



Variable: **Student Attendance Rate**

- Variables in percentages (0-1)

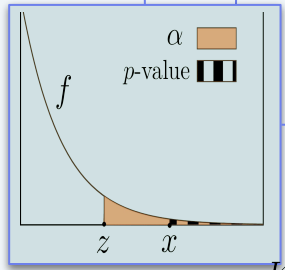
Data: **NYC School Quality Report (SQR)**

All **public middle/elementary** (non-charter) schools in NYC

- Charters can choose their evaluation metrics (with approval)

The Process

Gather / Clean

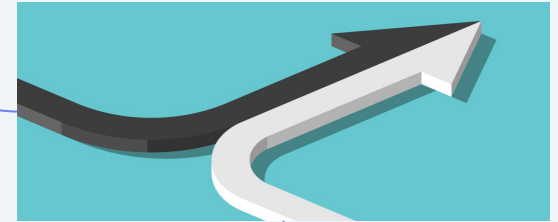


Stat - Testing

Model / Test



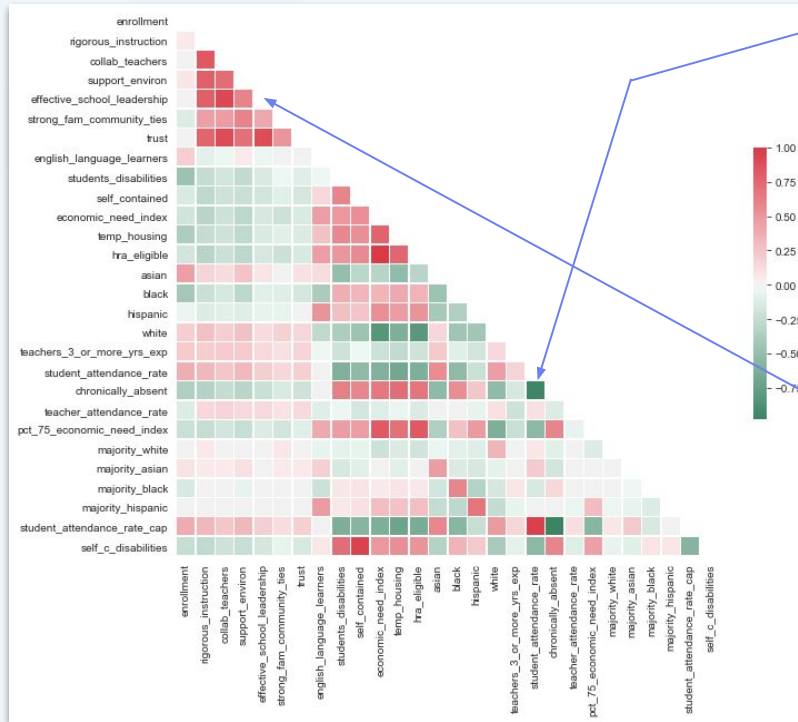
Feature Engineering



EDA



Statistical Testing



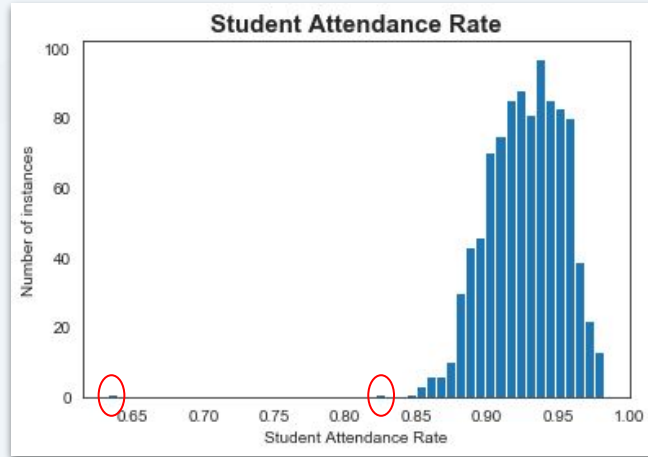
High negative correlation

Chronically Absent
Student Attendance Rate

High positive correlation

Came from same section
of the questionnaire.

EDA

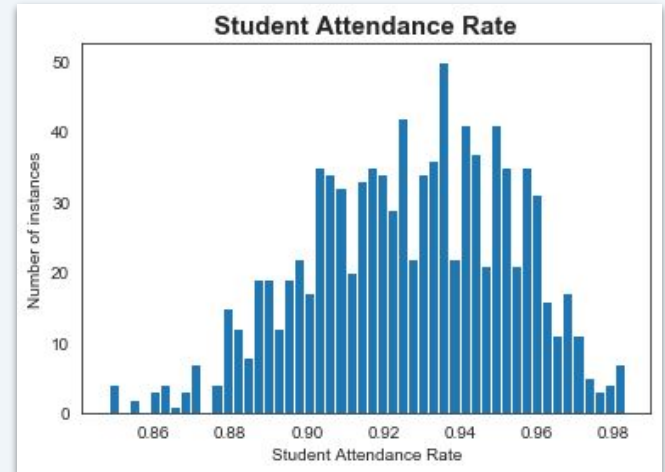


2 outliers

Negative skew

0 outliers

Approximately normal
distribution



Models

	Features	Measurement	Result
Model #1	27	Train RMSE	0.000908
		Test RMSE	0.015365
		Adj R ²	0.945
Model #2	14	Train RMSE	0.004675
		Test RMSE	0.005376
		Adj R ²	0.966
Model #3	16	Train RMSE	0.004673
		Test RMSE	0.00539
		Adj R ²	0.966

Final Model

Coef	Result	P-Value	Measurement	Result
Intercept	0.9545	0.000	Train RMSE	0.004676
strong_fam_community_ties	0.0058	0.255	Test RMSE	0.005379
english_language_learners	-0.0026	0.202	Adj R^2	0.966
students_disabilities	-0.0088	0.006		
self_contained	0.0073	0.092		
economic_need_index	0.0021	0.280		
<u>asian</u>	<u>0.0248</u>	<u>0.000</u>		
black	0.0119	0.076		
<u>hispanic</u>	<u>0.0156</u>	<u>0.017</u>		
white	0.0134	0.039		
<u>chronically_absent</u>	<u>-0.1885</u>	<u>0.000</u>		
majority_white	-0.0022	0.228		
majority_asian	0.0038	0.011		
majority_black	0.0016	0.040		

13 Features

High Fit / Low
Interpretability

Top 3
Chronically Absent
Asian
Hispanic

Takeaways

- **Chronic absences** are a strong factor in driving attendance down
- Factors one might assume **not always statistically impactful**
Ex. temporary housing, teacher collaboration, etc
- Because money allocated by student attendance, recommend **possible implementation of additional questions** on the SQR
Ex. How many times a month are you called by the school and/or teachers