




Is a School's Location Predictive of it Closing?

School Closure Trends in California

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LOCAL NEWS • News

South Whittier School District to close Monte Vista Elementary School

Monte Vista students will go to Los Altos Elementary School, only a hop, skip and a jump away.



Monte Vista Elementary School, 12000 Loma Dr, Whittier, will Close in the 2021-22 school year.. (Staff photo by Mike Sprague)



By **MIKE SPRAGUE** | msprague@scng.com | Whittier Daily News

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Objective

Identify if a **school's location** is predictive of **school closure** by observing trends at the district level in California.

Data Analysis

Definitions

Local Educational Agency (LEA): An LEA is a local entity involved in education including but not limited to **school districts**, county offices of education, direct-funded charter schools, and special education local plan area.

Biased model: The presence of systematic errors in a model that can cause it to consistently make incorrect predictions, such as being biased towards the **majority class** in the dataset

National Center for Education Statistics (NCES) Data

Dataset 1: Common Core of Data, Local Education Agency (LEA)

Dataset 2: Public School District Geocode File

Data Cleaning & Transformations

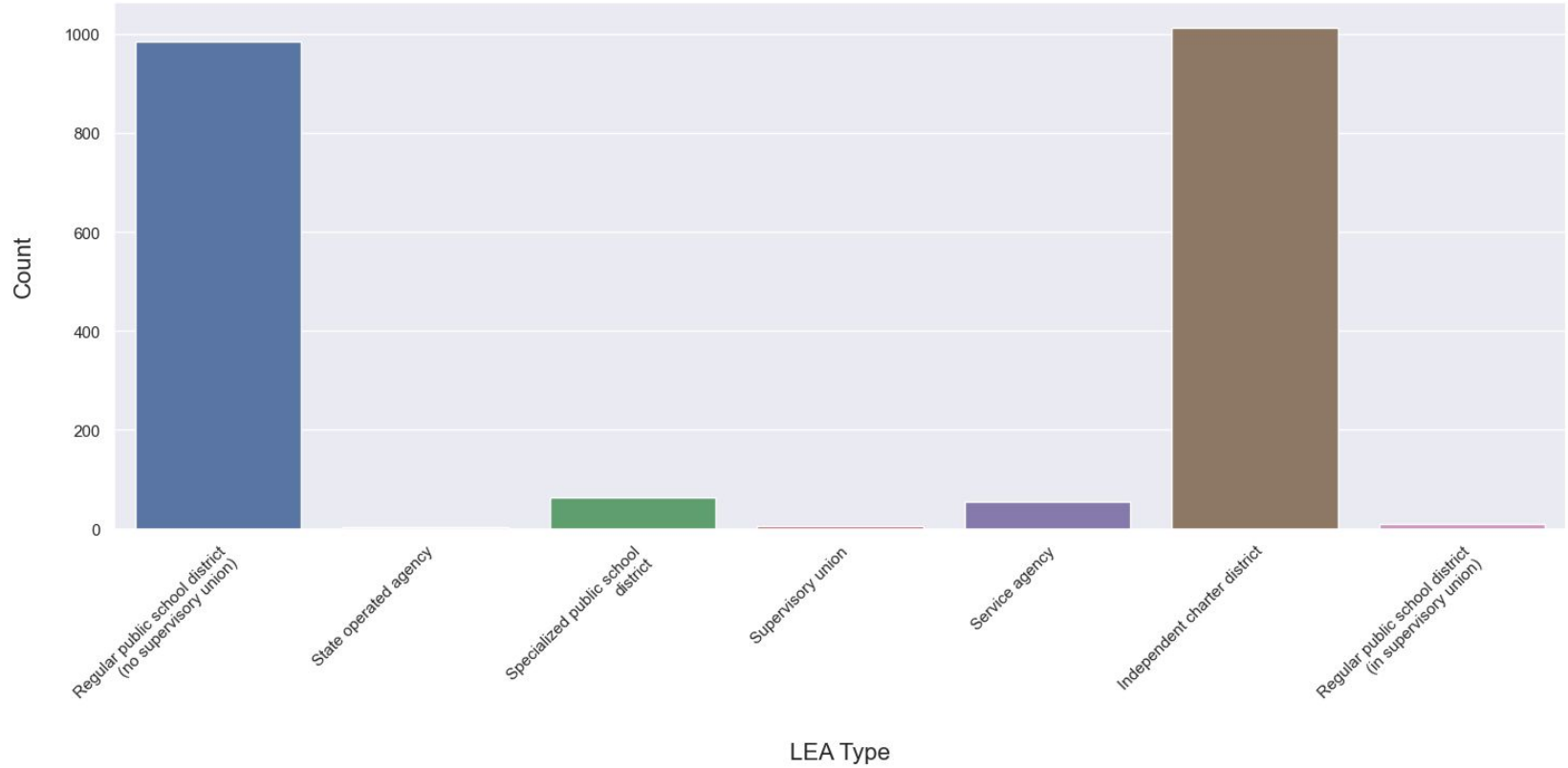
Scope:

- California (CA)
- 2022-2023 school year

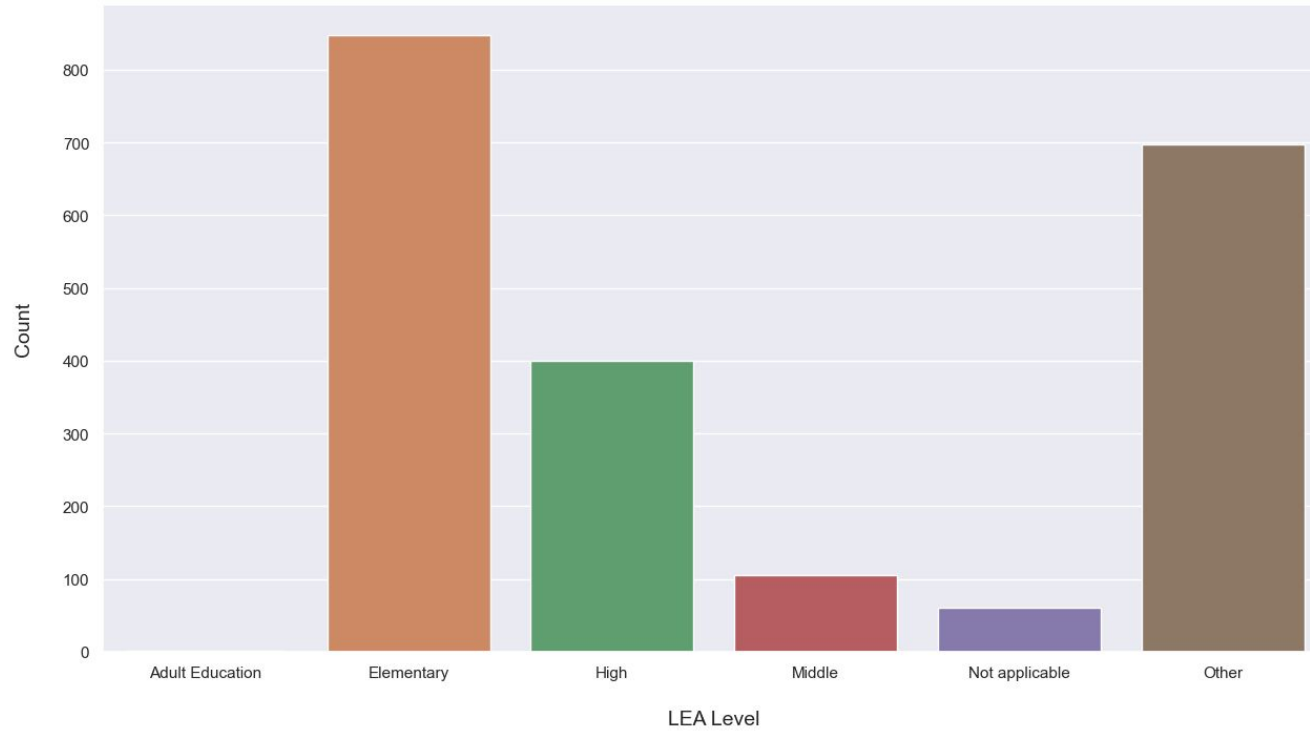
leaid		name	city	zip	state	locale	lea_type	lea_type_text
1232	600001	Acton-Agua Dulce Unified	Acton	93510	CA	41	1	Regular public school district that is not a c...
1233	600002	California School for the Blind (State Special...	Fremont	94536	CA	21	5	State operated agency
1234	600003	California School for the Deaf-Fremont (State ...	Fremont	94538	CA	21	5	State operated agency
1235	600006	Ross Valley Elementary	San Anselmo	94960	CA	21	1	Regular public school district that is not a c...
1236	600007	CA Sch for the Deaf-Riverside (State Special S...	Riverside	92506	CA	11	5	State operated agency

start_status	start_status_text	updated_status	updated_status_text	effective_date	operational_schools	lowest_grade_offered	highest_grade_offered	lea_level
1	Open	1	Open	8/21/23	3	KG	12	Other
1	Open	1	Open	8/21/23	1	KG	12	Other
1	Open	1	Open	8/21/23	1	KG	12	Other
1	Open	1	Open	8/21/23	5	KG	8	Elementary
1	Open	1	Open	8/21/23	1	KG	12	Other

Amount of Each LEA Type

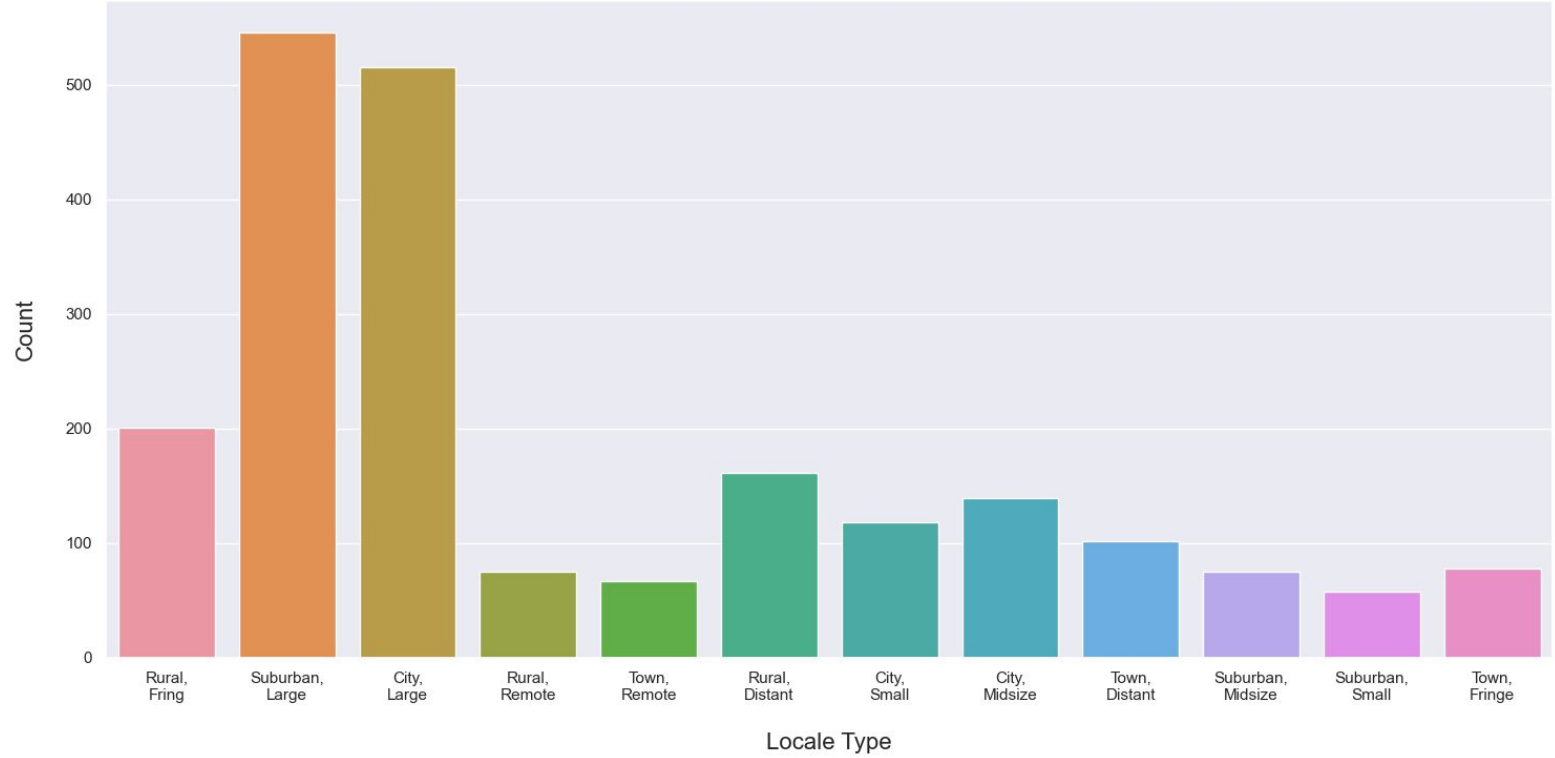


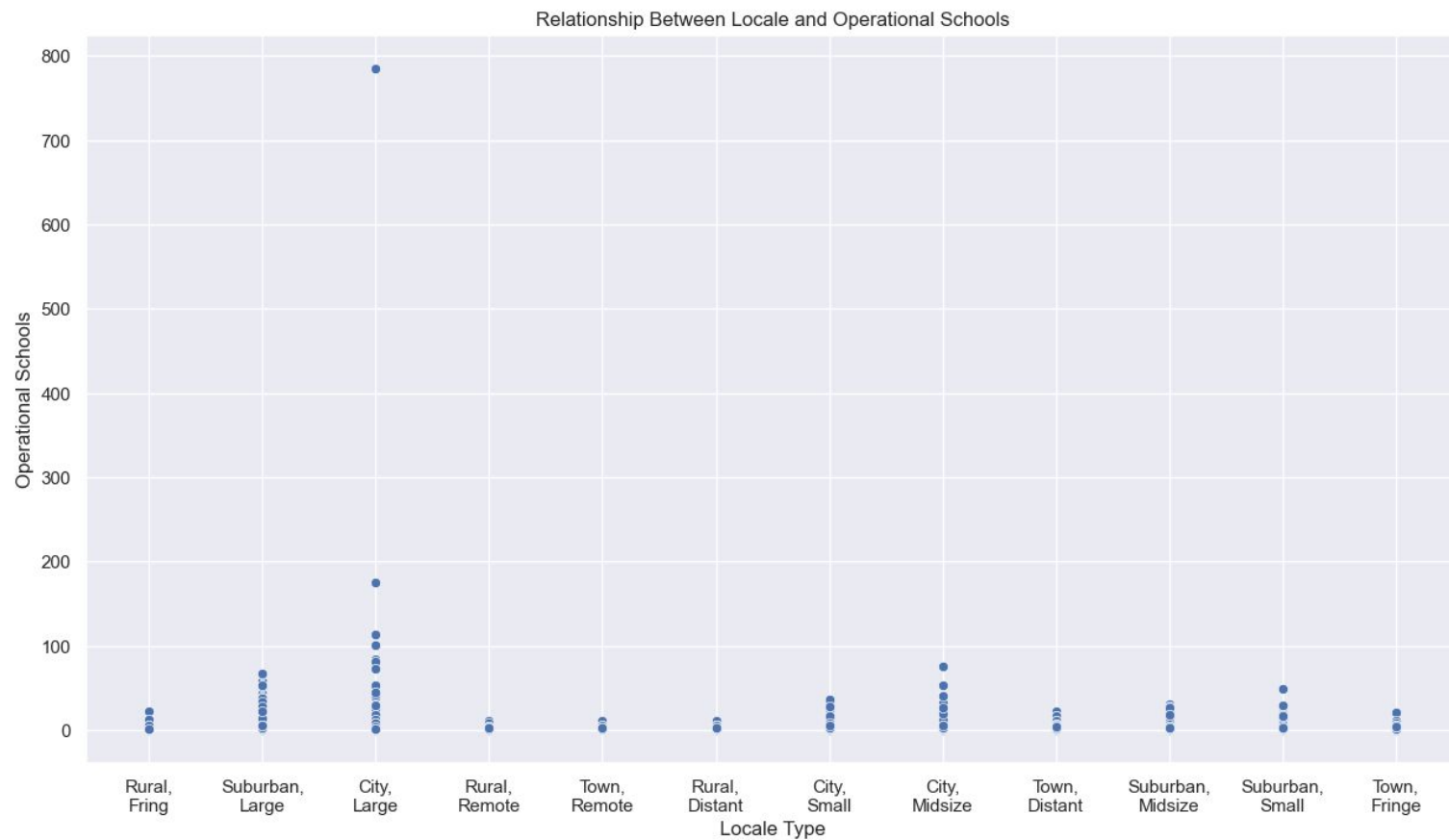
Number of Open Schools by LEA (District) Level



lea_level		closed_status	
0	Not reported	23	

Number of LEA's by Locale





updated_status

1 2112

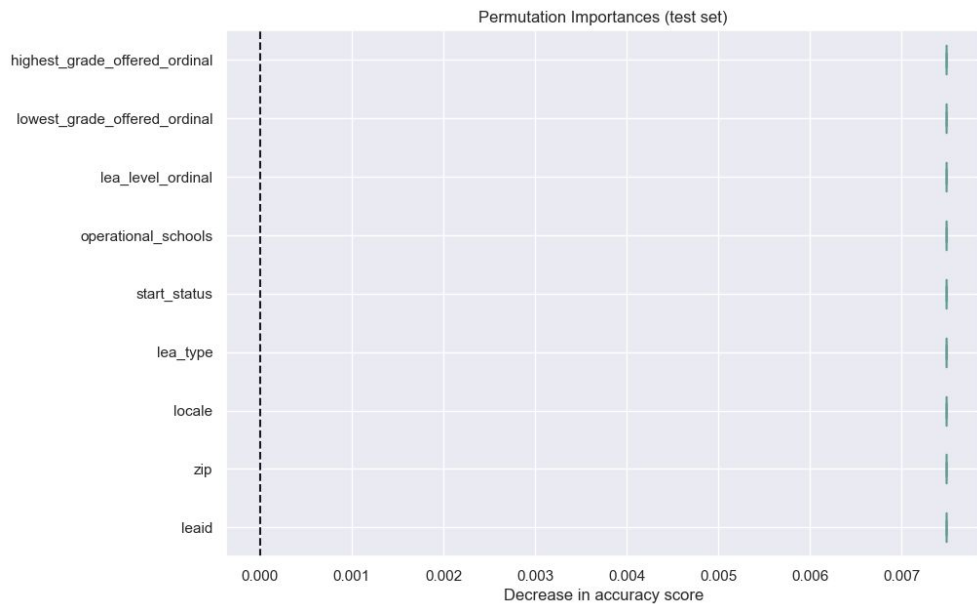
2 23

Name: count, dtype: int64

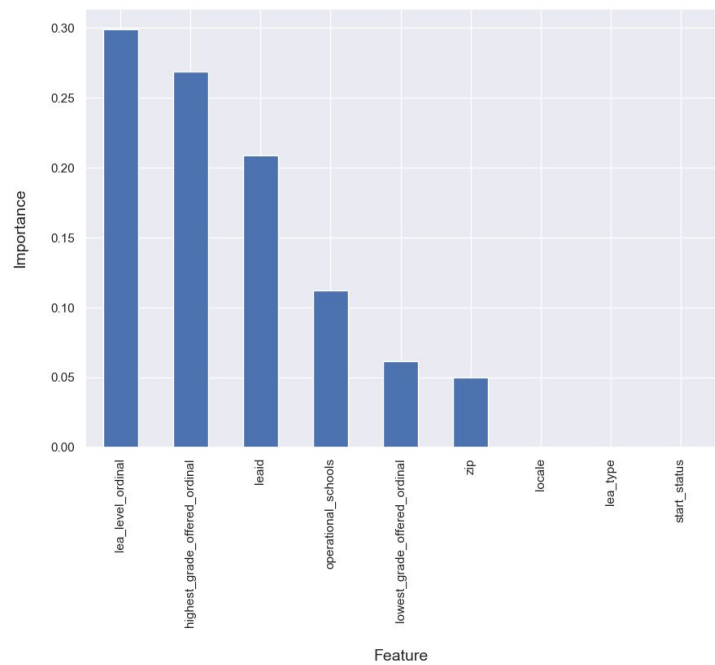
Class='Open' : 2112/2135 (0.989)

Class='Closed' : 23/2135 (0.011)

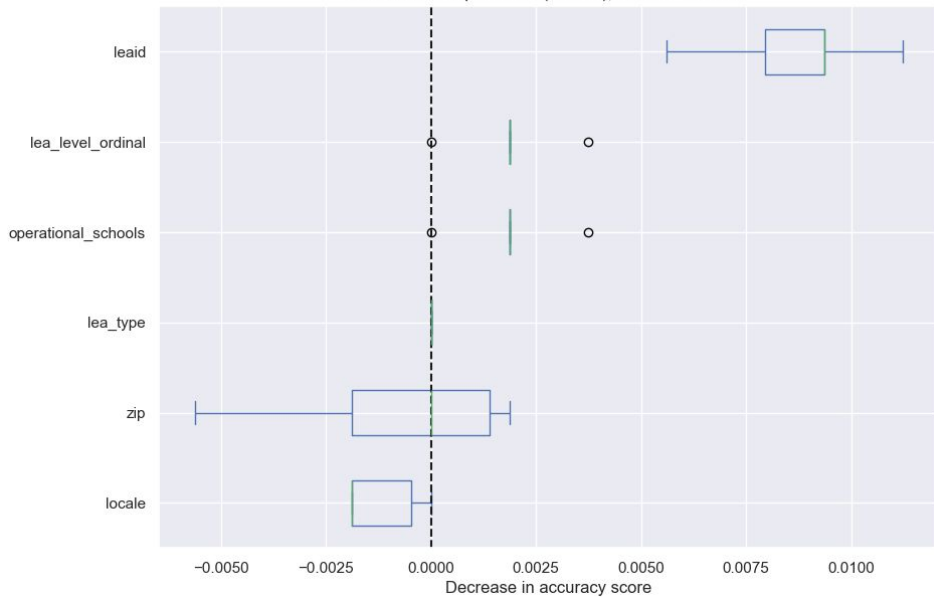
Predictive Modeling



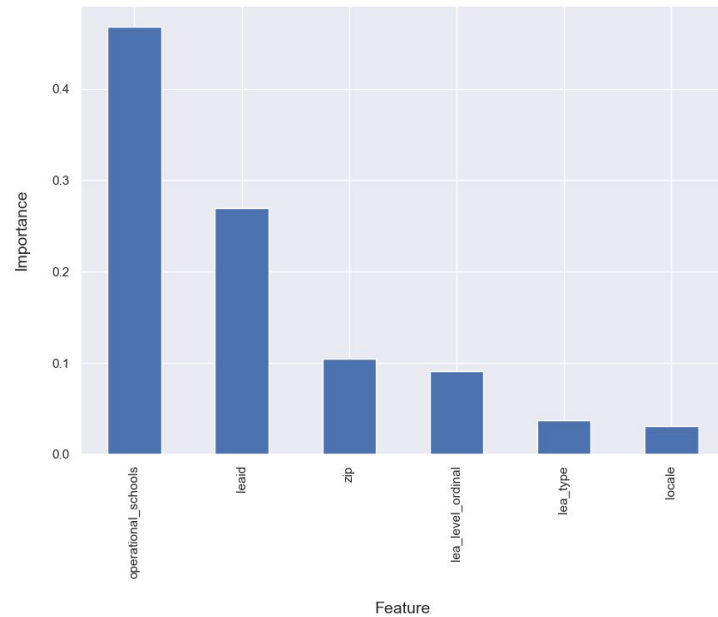
Feature Importance in the Random Forest Classifier with Stratified Train-Test Samples, Random State 11



Permutation Importances (test set), Random State 12



Feature Importance in the Random Forest Classifier with Stratified Train-Test Samples, Random State 12



Next Steps



How to improve the model

1. Use a larger scope: analysis on more than one state
2. Improve district level analysis to observe wealth gaps
3. Additional predictive modeling approaches
4. Additional NCES dataset on School Neighborhood Poverty Estimates



Potential Applications

EQUITY & DIVERSITY

Race Is a Big Factor in School Closures. What You Need to Know

By Evie Blad & Ileana Najarro — November 28, 2023 ⌚ 5 min read



— iStock/Getty Images Plus

SCHOOL & DISTRICT MANAGEMENT

Pressure to Close Schools Is Ramping Up. What Districts Need to Know



By Mark Lieberman — January 24, 2024 ⌚ 8 min read



— Illustration by Liz Yap/Education Week (Images: iStock/Getty)

These findings could **inform strategic planning and interventions** to facilitate closures and **minimize negative implications** of these transitions on students, educators and neighborhoods.

Thank you!