

Supplemental Presentation: Statistical Relationships between OCR Teacher Data on Teachers and CEPI Student Data

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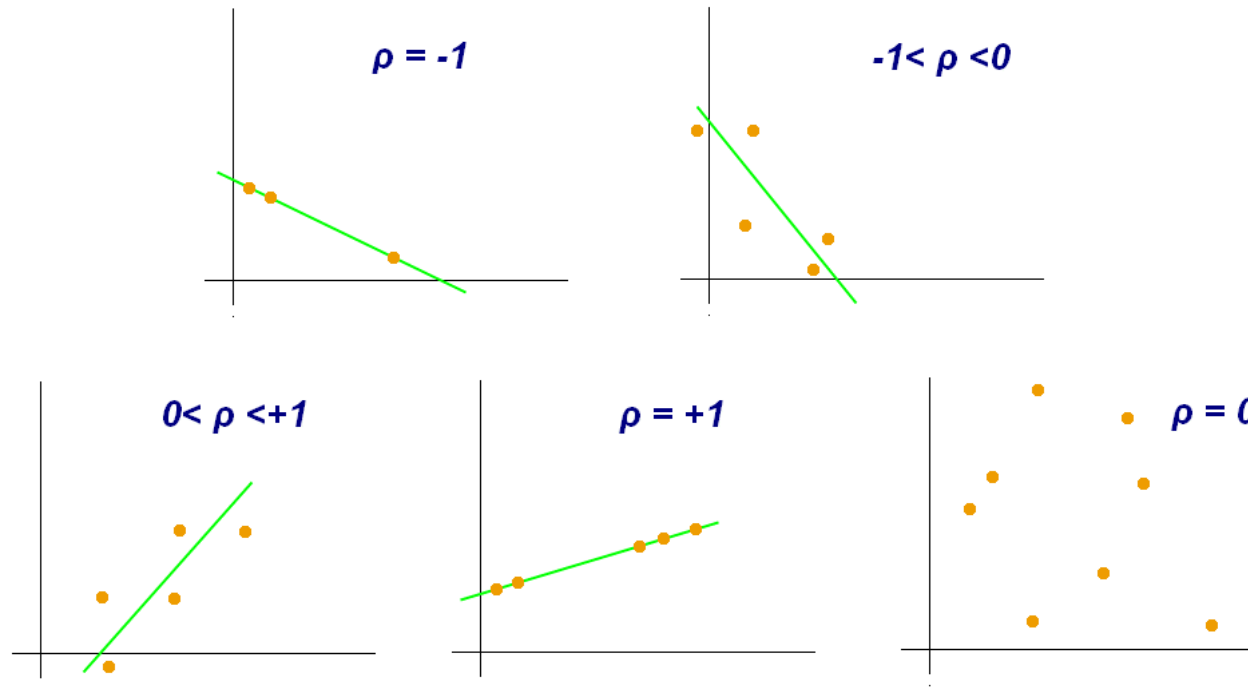
Objectives of This Presentation

- ▶ Note: This is intended as a supplemental Powerpoint to “CFDS Talent Committee: Office of Civil Rights (OCR) Data on Teachers”
- ▶ This supplement will build on the primary Powerpoint in order to:
 - ▶ Provide a brief, (relatively) non-technical overview of what a correlation coefficient is and how to interpret it
 - ▶ Present some very preliminary correlational analysis between OCR data on teachers and

Real Quick Statistics Review...

- ▶ **CORRELATION COEFFICIENT:** Measures the relative strength of the linear relationship between two variables (specifically, Pearson's r)
- ▶ Can take on any value from -1 to +1
 - ▶ -1 indicates a perfectly linear negative relationship
 - ▶ 0 indicates that there is no linear relationship
 - ▶ +1 indicates a perfectly linear positive relationship
- ▶ That is, the larger the absolute value (i.e., farther from zero), the stronger the relationship
- ▶ This is a very basic, preliminary analyses intended to provoke additional questions to explore with more sophisticated analysis rather than definitively provide answers
 - ▶ Often there are relationships between variables that emerge when you “control” for other factors, but looking at the relationships between pairs of variables can be a helpful starting point

A Picture Is Worth...



Legend to Color Coding on Following Slides

General Guidelines for Interpreting Correlation Coefficients

[0.10, 0.30) Weak

Weakly Positive

Weakly Negative

[0.30, 0.50) Moderate

Moderately Positive

Moderately Negative

[0.50, 1.00) Strong

Strongly Positive

Strongly Negative

> 0 Positive Relationship

< 0 Negative Relationship

Effect sizes >0.20 (or <-0.20) bolded

OCR Teacher Covariates Compared to Building-Level Student Demographics (All)

Bivariate Relationships between Student Demographics and OCR Teacher Data, All Schools (2013-14)

Source: Office of Civil Rights, US Department of Education public use datafiles (ocrdata.ed.gov); CEPI Student Count, Student Count Attendance, and TTB public use datafile (mischooldata.org); Data Drive Detroit

	Pct Asian	Pct Black	Pct Hispanic	Pct White	Pct FRPL	Avg Commute	Pct Student Chronic Absent	2013-14 TTB	Pct 1st Year Teacher	Pct 2nd Year Teacher	Pct Teacher Chronic Absent	Average Salary
Pct Asian	1.000											
Pct Black	(0.165)	1.000										
Pct Hispanic	(0.081)	(0.843)	1.000									
Pct White	0.217	(0.612)	0.110	1.000								
Pct FRPL	0.051	(0.174)	0.164	(0.007)	1.000							
Avg Commute	(0.015)	0.215	(0.199)	(0.131)	(0.247)	1.000						
Pct Student Chronic Absent	(0.083)	0.349	(0.233)	(0.310)	0.044	0.058	1.000					
2013-14 TTB	(0.032)	(0.062)	0.099	(0.025)	(0.323)	0.492	(0.235)	1.000				
Pct 1st Year Teacher	(0.004)	(0.022)	0.019	0.009	(0.030)	0.083	(0.220)	0.101	1.000			
Pct 2nd Year Teacher	(0.063)	0.036	(0.049)	(0.055)	(0.244)	0.164	(0.036)	0.126	0.566	1.000		
Pct Teacher Chronic Absent	(0.057)	0.117	(0.118)	(0.050)	0.100	0.229	(0.010)	0.035	0.138	0.430	1.000	
Average Salary	(0.023)	0.197	(0.064)	(0.288)	(0.015)	0.194	0.249	(0.011)	(0.203)	(0.155)	0.073	1.000

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Some Surprising Findings from the Preliminary Correlational Analysis (1 of 2)

- ▶ Across all schools, there is not a statistical relationship between Teacher Chronic Absenteeism and Student Chronic Absenteeism
 - ▶ For both teachers and students, “chronic absenteeism” is defined as missing 10 or more school days
 - ▶ Somewhat surprising that this doesn't appear to be a modeled behavior
- ▶ There is a positive relationship between Average Teacher Salary and Student Chronic Absenteeism
 - ▶ Could be a good thing if it indicates that more experienced teachers are working with more disadvantaged populations
 - ▶ Very surprising because Charter students have the highest rate of Chronic Absenteeism, yet Charter teachers have considerably lower average salaries

Some Surprising Findings from the Preliminary Correlational Analysis (2 of 2)

- ▶ There is a positive relationship between Average Teacher Salary and Percentage of Black Students, while Negative between Average Teacher Salary and Percentage of White Students
 - ▶ Likely an artifact of a larger proportion of white students attending Charters, which average lower teacher salaries than DPS