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

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CORELATION 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

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Legend to Color Coding on Following Slides

General Guidelines for Interpreting Correlation Coefficients

- [0.10, 0.30) Weak
- [0.30, 0.50) Moderate
- [0.50, 1.00) Strong

- > 0 Positive Relationship
- < 0 Negative Relationship

Effect sizes >0.20 (or < -0.20) bolded

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### 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

<table>
<thead>
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<th></th>
<th>Pct Asian</th>
<th>Pct Black</th>
<th>Pct Hispanic</th>
<th>Pct White</th>
<th>Pct FRPL</th>
<th>Avg Commute</th>
<th>Pct Student Chronic Absent</th>
<th>2013-14 TTB</th>
<th>Pct 1st Year Teacher</th>
<th>Pct 2nd Year Teacher</th>
<th>Pct Teacher Chronic Absent</th>
<th>Average Salary</th>
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<tr>
<td>Pct Black</td>
<td>(0.165)</td>
<td>1.000</td>
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<td></td>
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<td>Pct Hispanic</td>
<td>(0.081)</td>
<td>(0.843)</td>
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<td>0.612</td>
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<td>Pct Student Chronic Absent</td>
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<td>0.349</td>
<td>(0.233)</td>
<td>(0.310)</td>
<td>0.044</td>
<td>0.058</td>
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<tr>
<td>2013-14 TTB</td>
<td>0.032</td>
<td>0.062</td>
<td>0.099</td>
<td>0.025</td>
<td>0.323</td>
<td>0.492</td>
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<tr>
<td>Pct 1st Year Teacher</td>
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<td>0.022</td>
<td>0.019</td>
<td>0.009</td>
<td>0.036</td>
<td>0.083</td>
<td>(0.220)</td>
<td>0.101</td>
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<td>0.036</td>
<td>0.049</td>
<td>0.055</td>
<td>0.244</td>
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<td>0.430</td>
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<td>Pct Teacher Chronic Absent</td>
<td>(0.057)</td>
<td>0.117</td>
<td>(0.118)</td>
<td>(0.050)</td>
<td>0.100</td>
<td>0.229</td>
<td>(0.010)</td>
<td>0.035</td>
<td>0.138</td>
<td>0.430</td>
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<td>Average Salary</td>
<td>0.023</td>
<td>0.197</td>
<td>(0.064)</td>
<td>(0.288)</td>
<td>0.015</td>
<td>0.194</td>
<td>0.249</td>
<td>(0.203)</td>
<td>(0.155)</td>
<td>(0.175)</td>
<td>0.073</td>
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</tr>
</tbody>
</table>

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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

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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

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