

REPORT ON THE STUDY OF THE IMPACT OF A FOUR-DAY SCHOOL WEEK ON ACADEMIC ACHIEVEMENT AND GROWTH

STATUTORY AUTHORITY:

Section 161.092, RSMo

Consent Item

Action Item

Report Item

PRIORITY AREA

Success-Ready Students & Workforce Development

SUMMARY

In 2011, under the authority in Section 171.031, RSMo, the first local education agency (LEA) in Missouri adopted a four-day school week. The number of LEAs operating a four-day week schedule increased modestly until 2020, when the numbers began to grow significantly each year. In order to understand the implications of these changes, the Office of Quality Schools commissioned SAS® Institute to investigate student outcomes with regard to the four-day school week. This report presents the key findings of the study, summarizes similar investigations, and proposes an outline for further study of the four-day school week.

PRESENTERS

Lisa Sireno, Assistant Commissioner, Office of Quality Schools; and Amanda Weissman, Research Statistician Developer, and Jennifer Sabourin, Senior Policy Lead, SAS® Institute, will participate in the presentation and discussion of this report.

Office of Quality Schools



Study of the Impact of a Four-Day School Week on Academic Achievement and Building Growth

February 6, 2024

Impact of a Four -Day School Week on Academic Achievement and Building Growth

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Prepared for Missouri Department of Elementary
and Secondary Education by SAS®EVAAS



Outline

- Existing Research Overview
- Missouri Study
 - Who Switched?
 - Analytic Approach
 - Results: Impact on Achievement and Growth
 - Results: Post-Pandemic Switch
- Conclusion

Existing Research Overview

- Multiple studies on effect of four-day week on academic achievement
 - Elementary, middle, and high school students across 16 states
 - Half found no effect, half found small negative effect (-0.02 to -0.09)
- When there were negative achievement results:
 - Driven by non-rural districts¹
 - Explained by decrease in total instructional time²
- No studies on effect of four-day week on building growth as DESE measures growth
 - One study on growth (i.e., gains) from fall to spring³
 - Small negative effect (-0.06) for ELA and Math

¹ Morton, Thompson, and Kuhfeld, 2022; Thompson et al., 2022; Nowak, Perrone, and Smith, 2023

² Thompson, 2021; Thompson et al., 2021

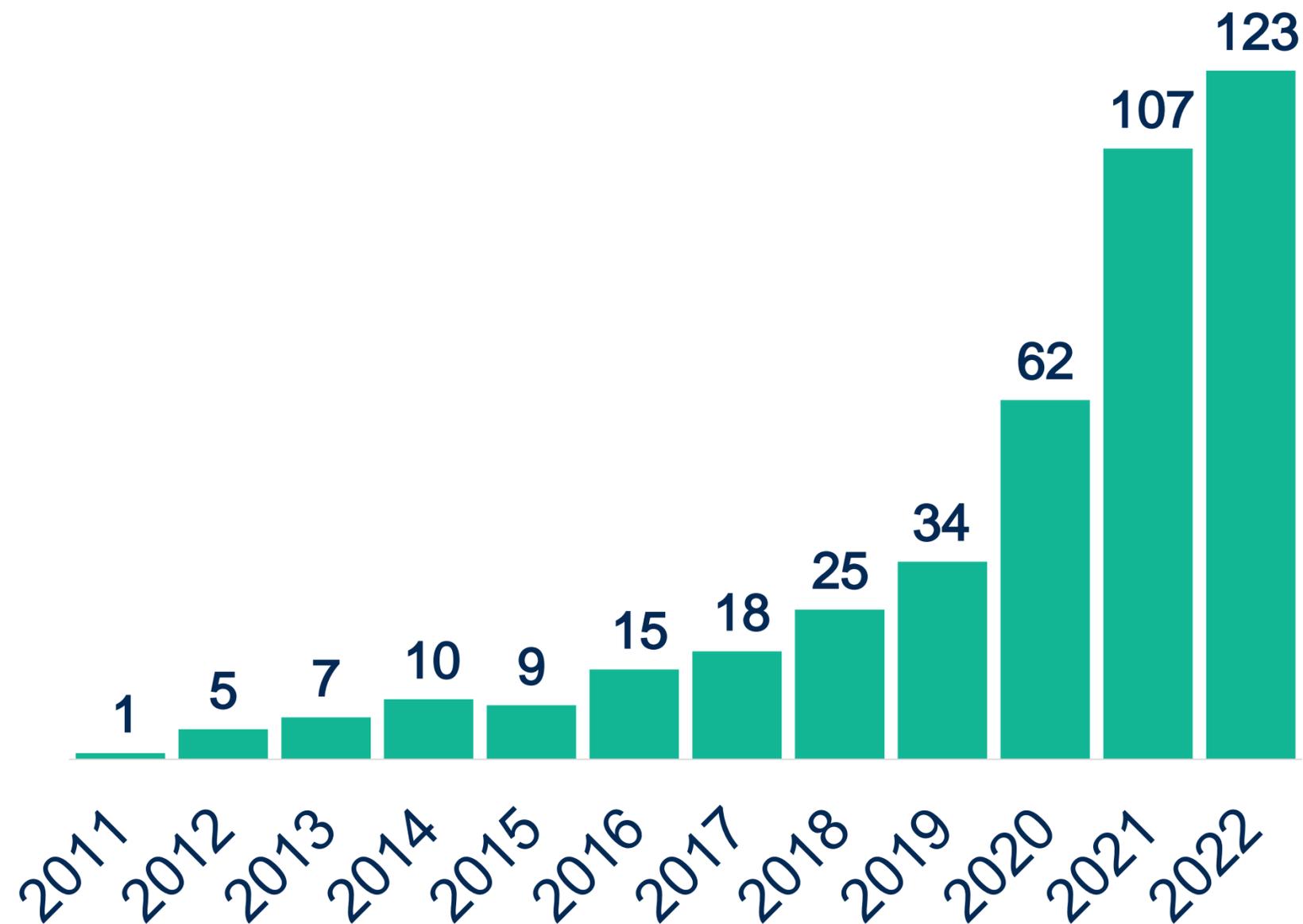
³ Morton, Thompson, and Kuhfeld, 2022

Missouri Study

What was the impact of a four-day school week on academic achievement and on building growth?

Introduction: Who Switched?

Districts with four -day school week over time



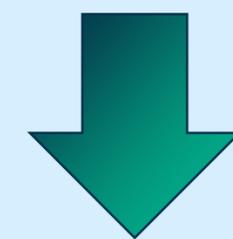
Students who experienced a four-day school week



MORE likely to be rural, white, receive Free or Reduced-Price Lunch



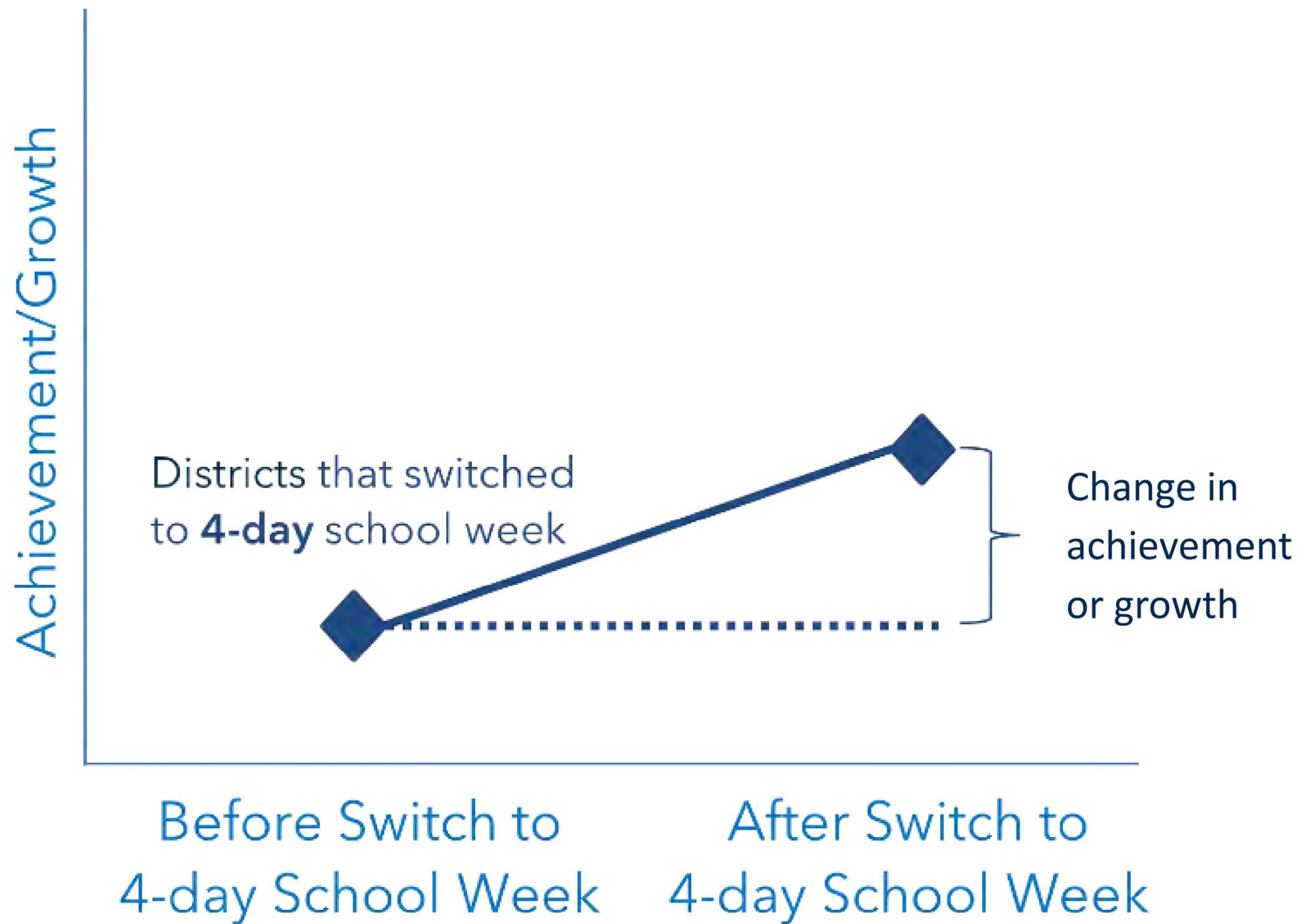
LESS likely to be Gifted, English Learner/Limited English Proficiency



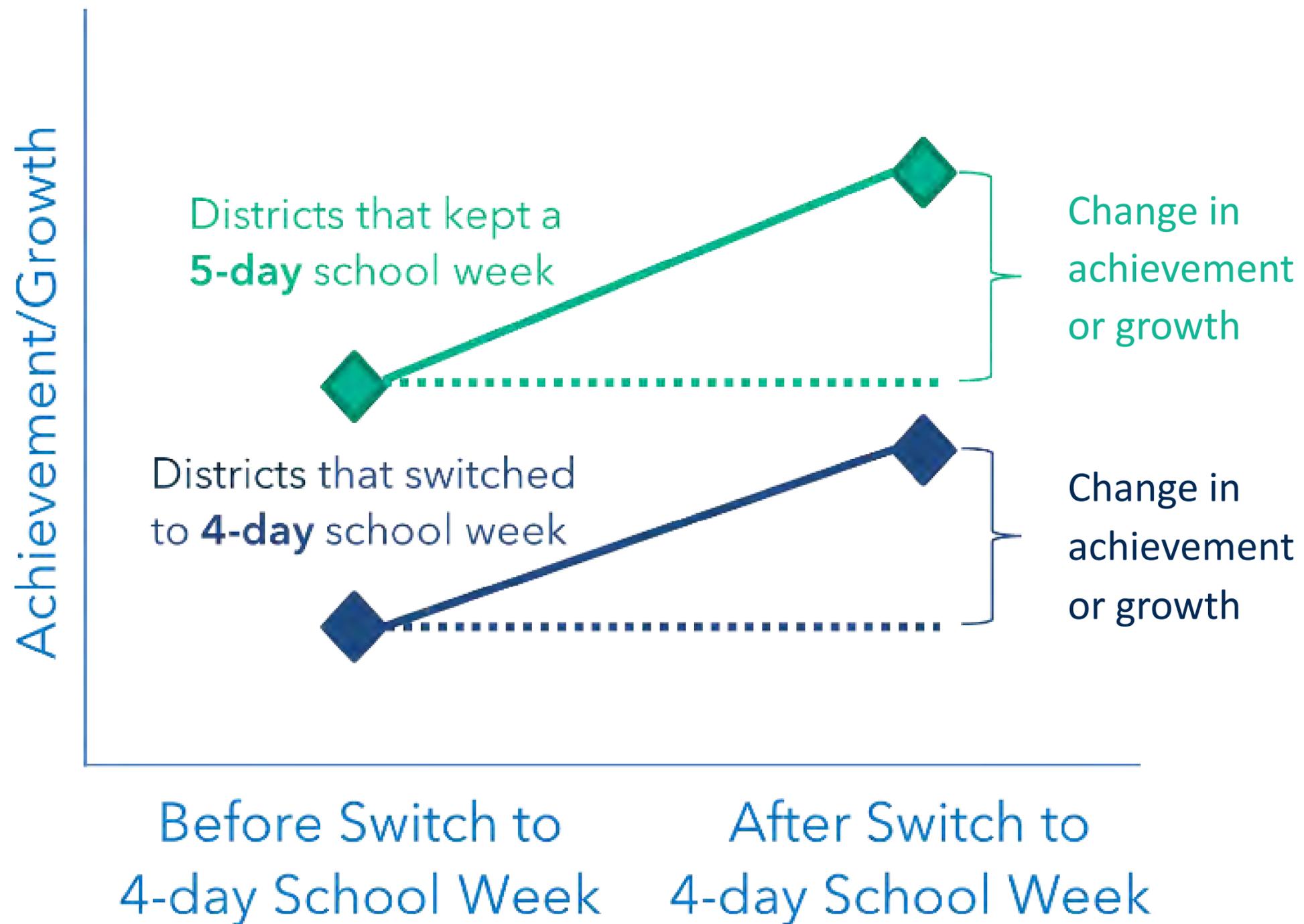
LOWER achievement and growth prior to adopting four-day week

Missouri Study
Analytic Approach
Difference-in-Difference Model

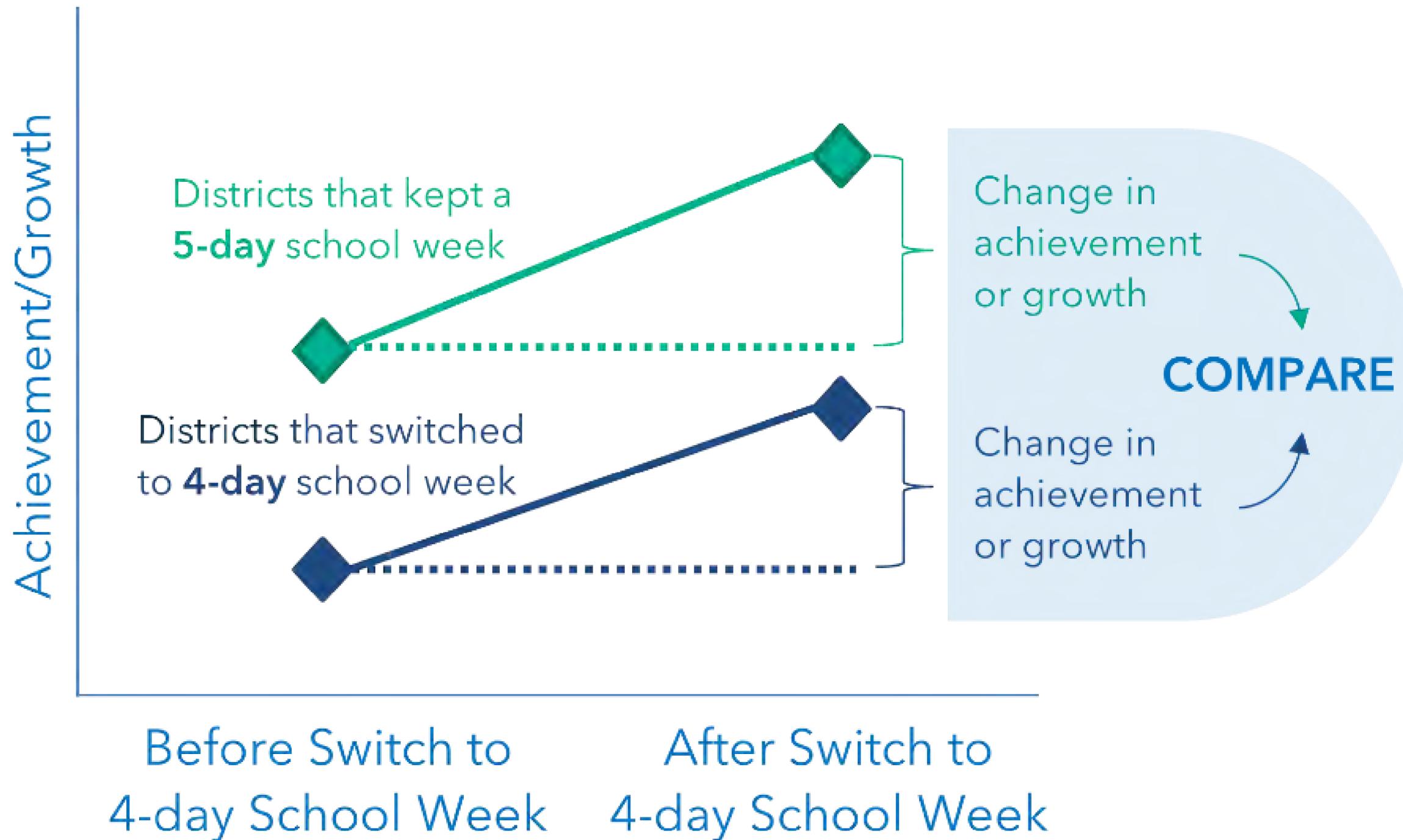
Analytic Approach



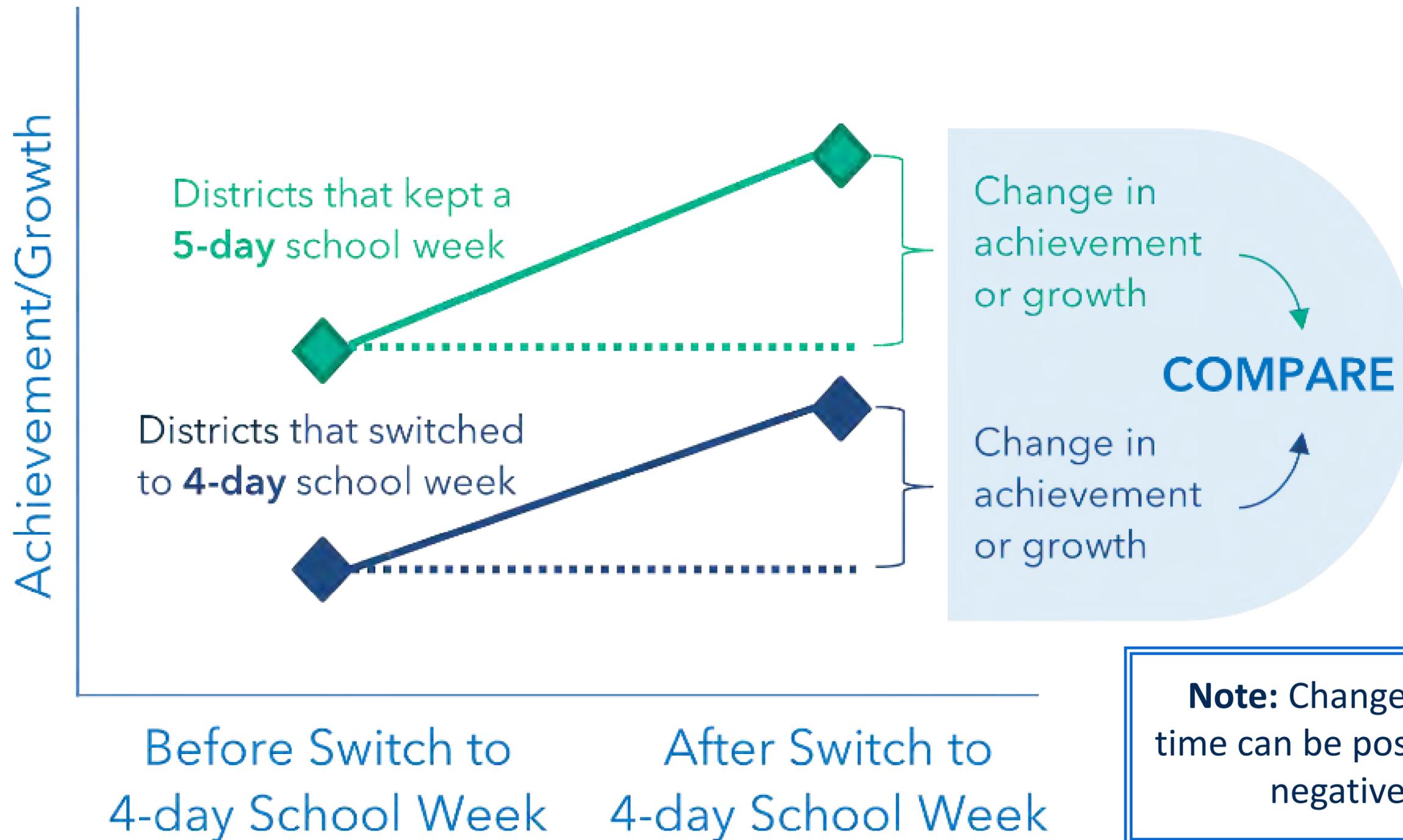
Analytic Approach



Analytic Approach



Analytic Approach



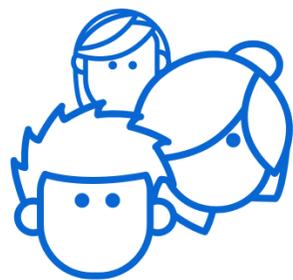
Missouri Study

Results: Impact on Achievement and Growth

Overall, no statistically significant effect on either academic achievement or building growth

Results

Overall, there is no statistically significant effect on either academic achievement or building growth in Missouri. Exceptions include:

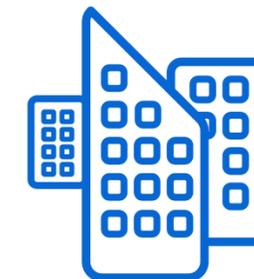


Achievement

- G3 ELA (0.111) and Math (0.117), 3+ years post adoption
- G4 ELA (-0.062) and G5 ELA (-0.067), adoption year
- Algebra I (-0.091), 2 years post adoption

Growth

- G6 ELA (0.051), adoption year



Note: These are all very small effects

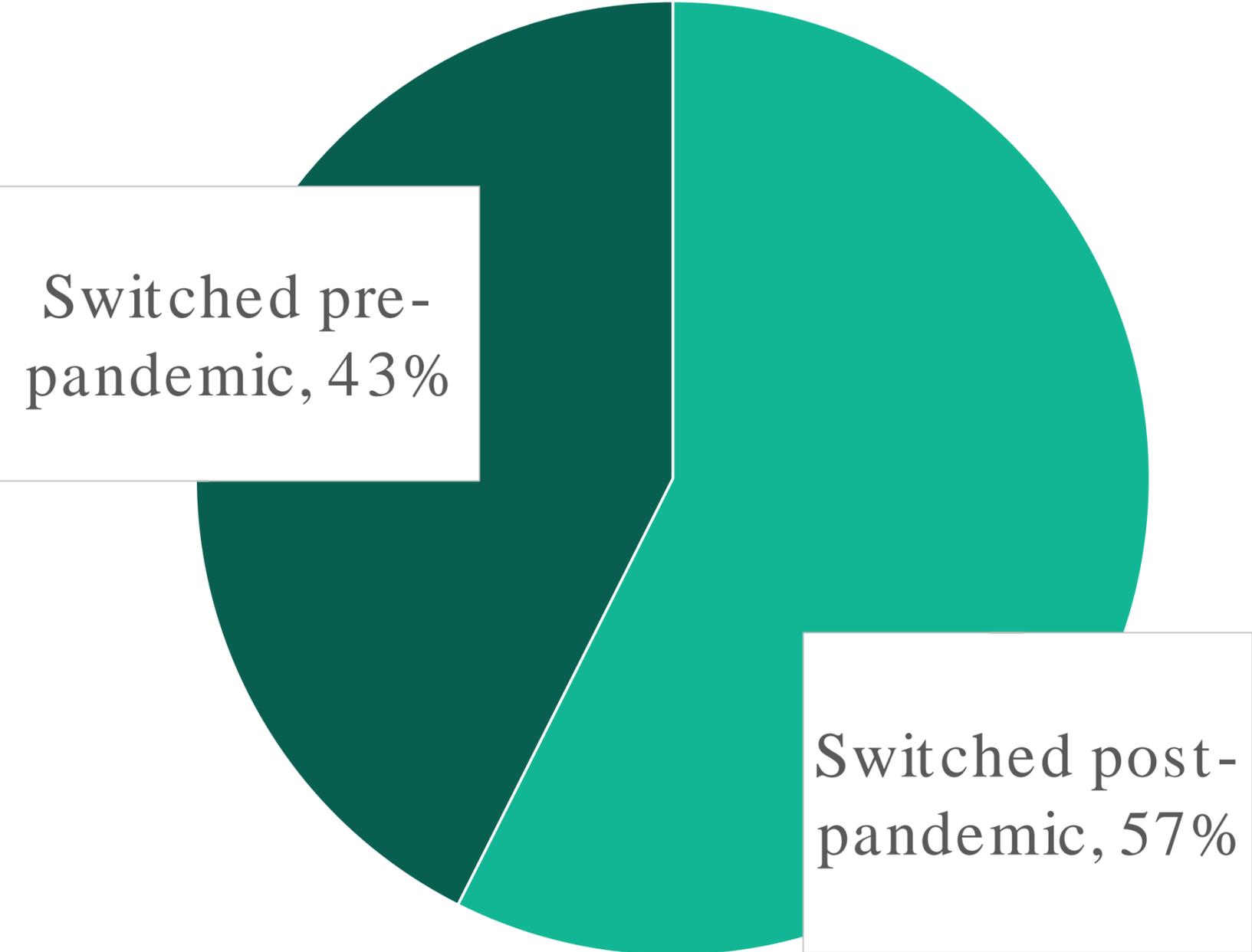
Missouri Study

Results: Post-Pandemic Switch

Do the results change when looking at LEAs that switched after the pandemic?

Post-Pandemic: Who Switched?

50,022 Total Students with a Four-Day Week Since 2011



Compared to Students who Switched Prior to the Pandemic



MORE likely to be:

- **Town**
- Special education
- ELL/LEP
- Foster students
- Hispanic
- Multiracial



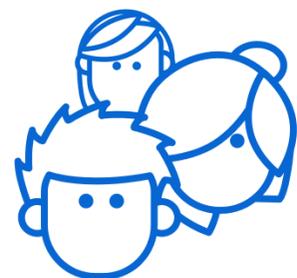
LESS likely to be:

- **Rural**
- Free and Reduced-Price Lunch
- White
- Black

Post-Pandemic: Results

Overall, there is no statistically significant effect on either academic achievement or building growth in Missouri.

Exceptions include:

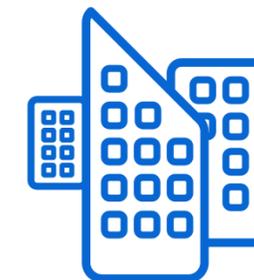


Achievement

- G7 Math(-0.065), 2019-20 and later sample
- G8 Math(-0.093), 2019-20 and later sample
- Both go away for 2020-21 and later sample

Growth

- No exceptions



Note: These are all very small effects

Missouri Study Conclusions

Conclusions

- Overall, four-day school week was neither helpful nor harmful for academic achievement or building growth in Missouri
 - In line with previous research from other states
 - Results, regardless of statistical significance, were very small¹
 - Results hold true when controlling for districts that switched after the pandemic
- Results tell us *what* is happening but not *why*
- Important things to consider:
 - Importance of fifth day
 - Changes in total instructional time
 - Differences in impact based on urbanicity
 - Potential impact on other outcomes

¹0.2 is a commonly used threshold for a small intervention in education research

Questions?