Educate, Invest, Excel:
Budgets & StateEd Priorities

“Educate, Invest, Excel: Budgets & StateEd Priorities" offers a comprehensive analysis of how state funding influences academic outcomes, with a focus on early education. Leveraging data from the EdFacts 'Adjusted Cohort Graduation Rate' datasets and 'states_all.csv', the project evaluates graduation rates by state alongside financial investments and fund distributions in education. It aims to elucidate the complex link between resource allocation—such as high teacher salaries and substantial early education program investments—and their effects on academic success rates. Through a meticulous examination of enrollment data, financial figures, and achievement scores, the project provides insightful perspectives on how strategic investment decisions can foster academic excellence from elementary through secondary education. Additionally, it investigates the impact of early education program enrollment on graduation rates, offering valuable insights for educators, policymakers, and researchers. This research is poised to enhance funding strategies and improve the quality of early education initiatives, underscoring the strategic significance of state funding allocations on educational outcomes.

Problem Identification:

The dynamics of state funding in education across the United States present a complex picture, involving initiatives, budgeting, and the pursuit of higher graduation rates. There's a notable gap in understanding how state funding, particularly its allocation towards education, correlates with improved graduation outcomes. The focus shifts from a broad emphasis on early education to a more targeted investigation into whether increased state investment—especially in areas such as teacher salaries and early education programs—leads to higher graduation rates. This exploration is vital for uncovering whether there's a tangible link between the financial commitment to education from an early stage and long-term academic success. This inquiry is essential for policymakers, educators, and stakeholders aiming to craft strategies that leverage state funding to significantly enhance educational achievements. By conducting a data-driven analysis, this research intends to illuminate the impact of state funding decisions on educational outcomes, particularly graduation rates, and explore the potential benefits of investing in early education as a foundation for academic excellence.

Data I Will Dive Into:

State Funding (*Financials*):

Explore the relationships between states' total revenue, federal revenue, state revenue, local revenue, and their impact on academic achievement. Investigate whether higher funding correlates with improved student outcomes.

Graduation Rate Success:

Examine the impact of various funding levels and educational programs on graduation rates across states. Determine the relationship between state funding allocations, specifically in education, and the success rates of graduation, highlighting the effectiveness of investment strategies in achieving higher educational outcomes.

Enrollment in Pre-Kindergarten *(Enrollment)* **as an Additional Factor:**

Analyze the correlation between the number of students enrolled in Pre-Kindergarten (GRADES_PK) and both academic achievement scores and graduation rates. Determine if early enrollment in Pre-Kindergarten influences not only immediate academic success but also long-term educational outcomes, including graduation rates.

Expenditure Patterns (*Financials*):

Investigate how states allocate their expenditures, including instruction expenditure, support services expenditure, capital outlay expenditure, and other expenditure categories (primarily, early education allocations and teacher salaries). Assess whether specific expenditure areas are correlated with academic success.

Longitudinal Analysis:

Since the dataset spans multiple years, consider conducting a longitudinal analysis to track changes over time. Examine trends in enrollment, revenue, expenditure, and academic achievement to identify patterns and potential causal relationships.

Additional Factors:

I can consider exploring other factors related to enrollment, such as the breakdown of students by grade and demographic characteristics (race, gender). Analyze whether specific groups exhibit different patterns in academic achievement.

Dataset Sources:

https://www2.ed.gov/about/inits/ed/edfacts/data-files/index.html#acgr
https://www.kaggle.com/datasets/noriuk/us-education-datasets-unification-project

Feedback Requests:

Project Scope: Does the scope of the project align with the title and overall theme? Are there any aspects that could be further clarified or expanded?

Research Methodology: Considering the nature of the project, how effective is the chosen research methodology? Are there alternative methods that you believe could enhance the study?

Data Sources: I am relying on datasets from EdFacts after concatenation, which combines various facets of U.S. education data. Do you think this dataset is comprehensive and suitable for addressing the research questions?

Data Analysis Plan: How robust and appropriate is the planned data analysis approach? Are there specific analyses or statistical methods you would recommend?"