

Internet Access and ACT Scores

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Introduction

The ACT was created as a comprehensive exam to get an idea of how students rank compared to their peers. Everyone gets the same type of questions and same amount of time, to ensure equality for everyone taking it. Although the ACT was made to rank everyone fairly, there is speculation that students do not have equal access to resources and preparation materials. **We will be investigating how students socioeconomic status impacts ACT scores and the role that internet access plays in how students perform on the ACT.**



Data Used

We used a total of 3 datasets for this project, 2 were from the same source (EdGap.org). One dataset contains the school socioeconomic statistics by county and the second set contains data about how many households in each county have access to internet. The last data set was from National Center of Education Statistics and it has information about every school in each county.

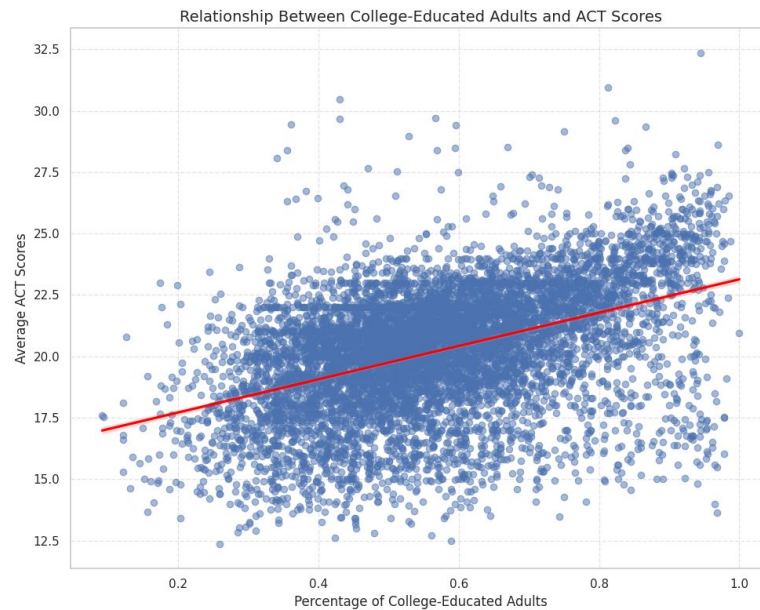
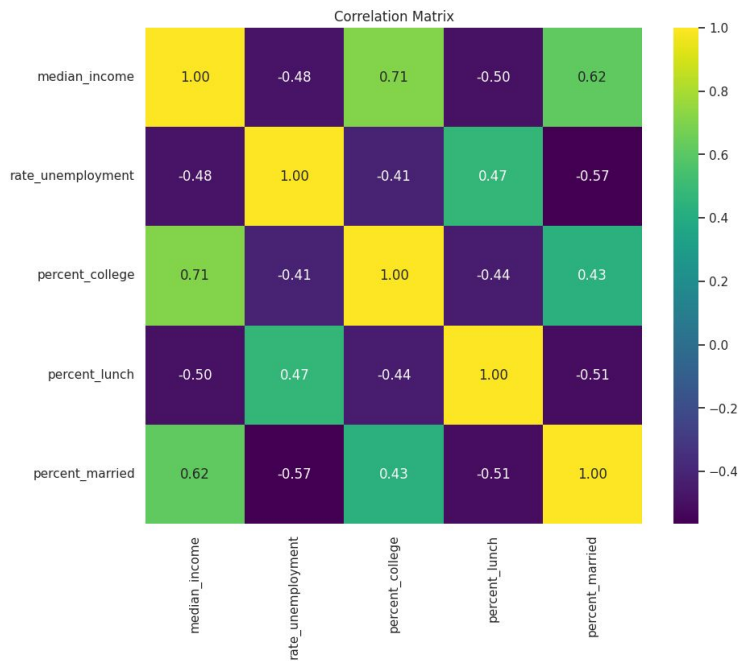


Data Analysis

By conducting a comprehensive data analysis of the effects of socioeconomic factors on ACT scores across counties, constructing a correlation matrix and performing regression analysis (train and test method) were a main priority. The correlation matrix provides insights into the relationships between various socioeconomic indicators, such as median income, unemployment rate, percentage of college-educated individuals, and other demographic factors, and their potential impact on ACT scores. By visually representing the correlations between these variables, we can identify potential predictors of ACT performance and explore which factors may have the most significant influence.



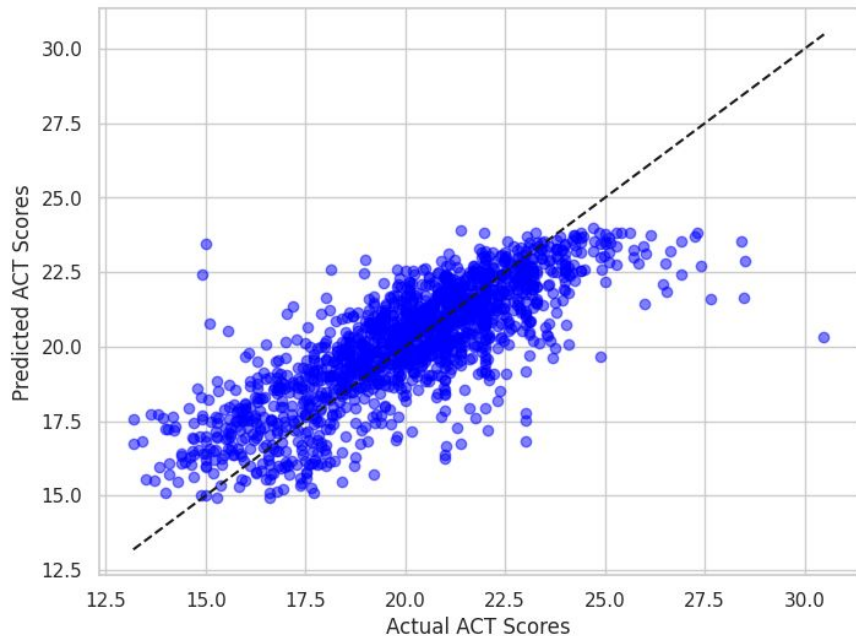
Results



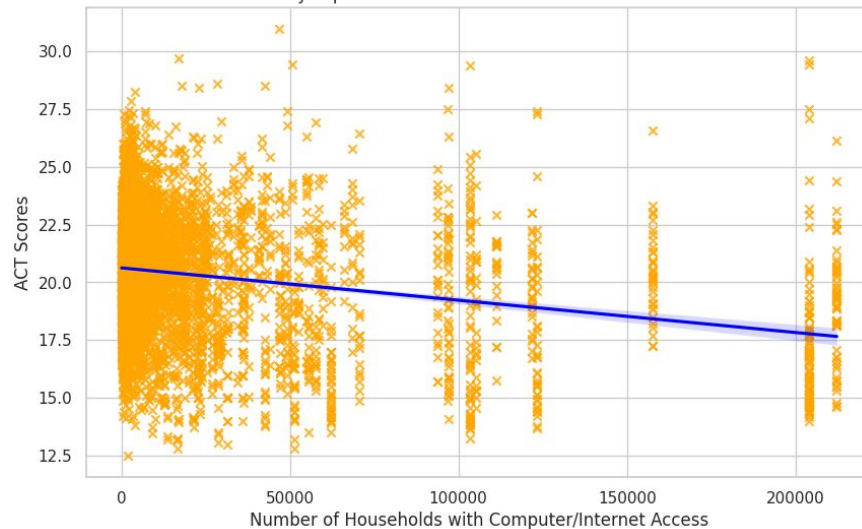


Results

Actual vs. Predicted ACT Scores



County Populations with Internet Access vs ACT Scores





Conclusion

In summary, our analysis highlights the correlation between socioeconomic factors and ACT scores across counties. While variables like median income and unemployment rate demonstrate significant relationships with academic performance, the evidence regarding internet access is inconclusive. The dataset's limitation, presenting internet access as household counts without considering county size, hinders a definitive conclusion on its impact. Further investigation with more nuanced data is needed to understand the role of internet access in shaping educational outcomes effectively. This understanding is vital for informing targeted interventions to promote equitable access to education and enhance student success across diverse communities