An Investigation of Debt Delinquency Across the United States

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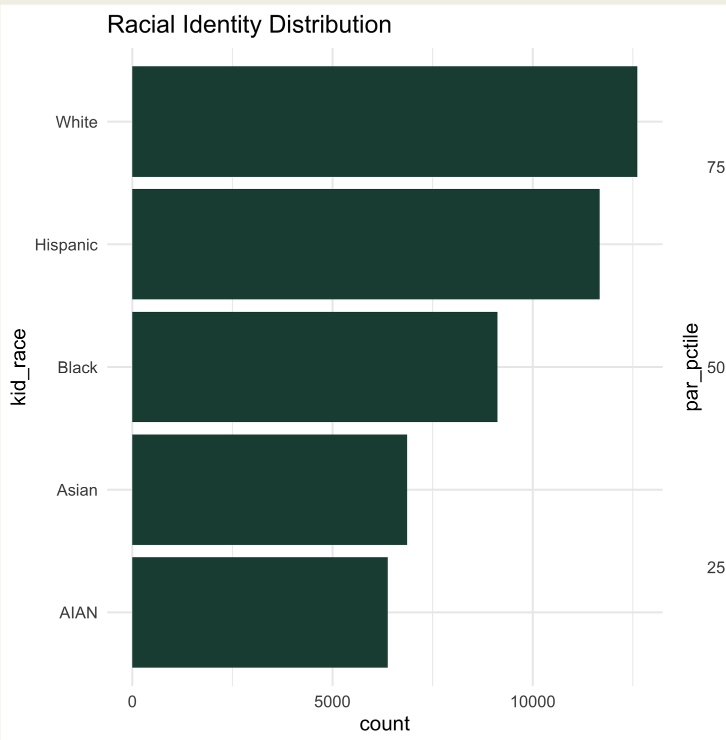
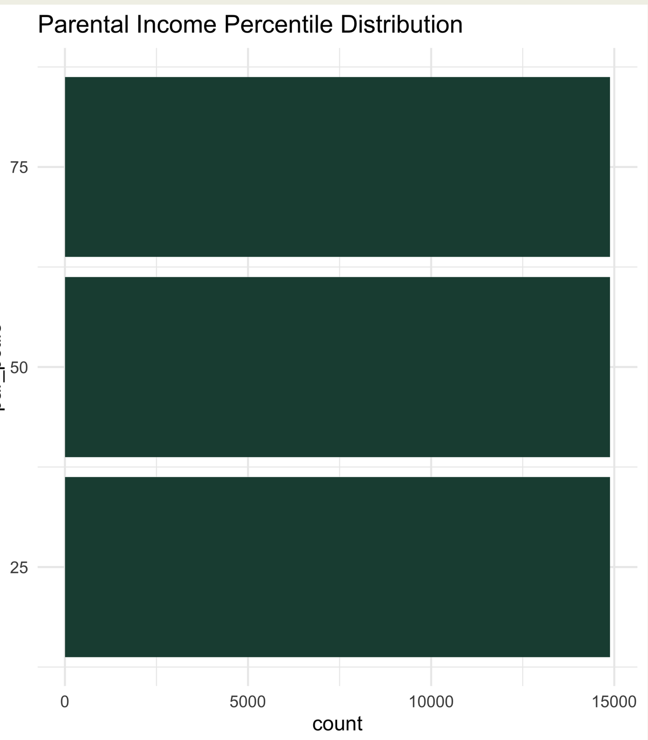
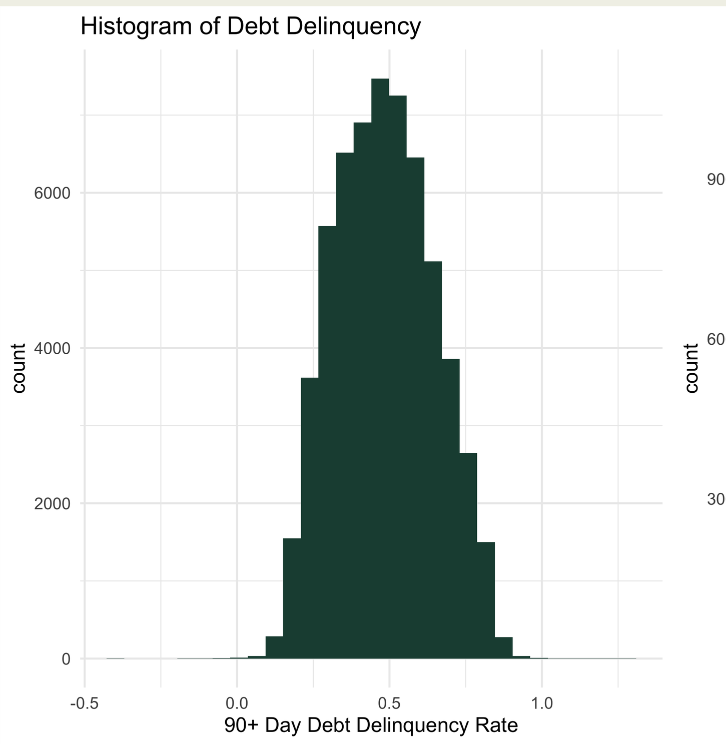
Introduction

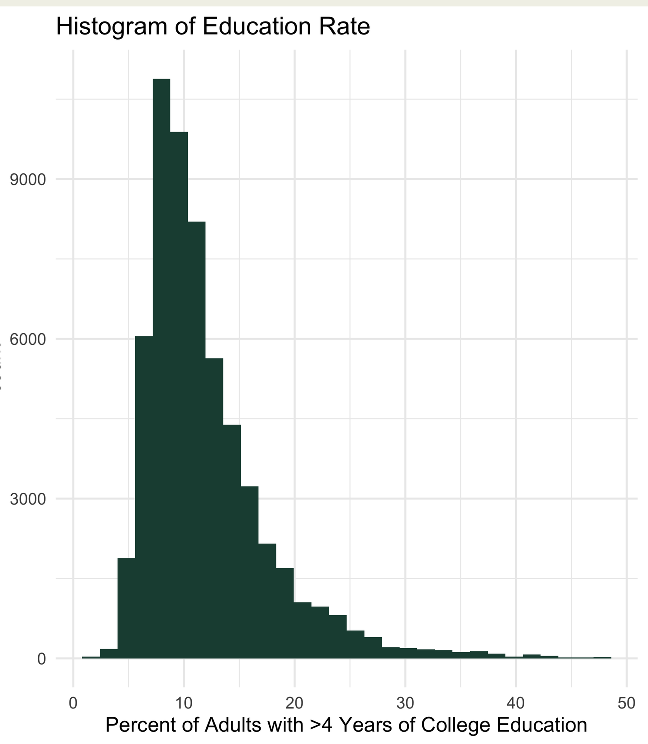
- **Debt delinquency**, or overdue payments on loans, is an indicator of an individual's overall financial health.
- High debt delinquency can also impact financial health through credit score reduction and other financial penalties.
- Different populations have different levels and patterns of debt delinquency, along income, gender, race, and location.

Summary Statistics









Childhood socioeconomic conditions (parental income, race, education) significantly shape financial outcomes in adulthood

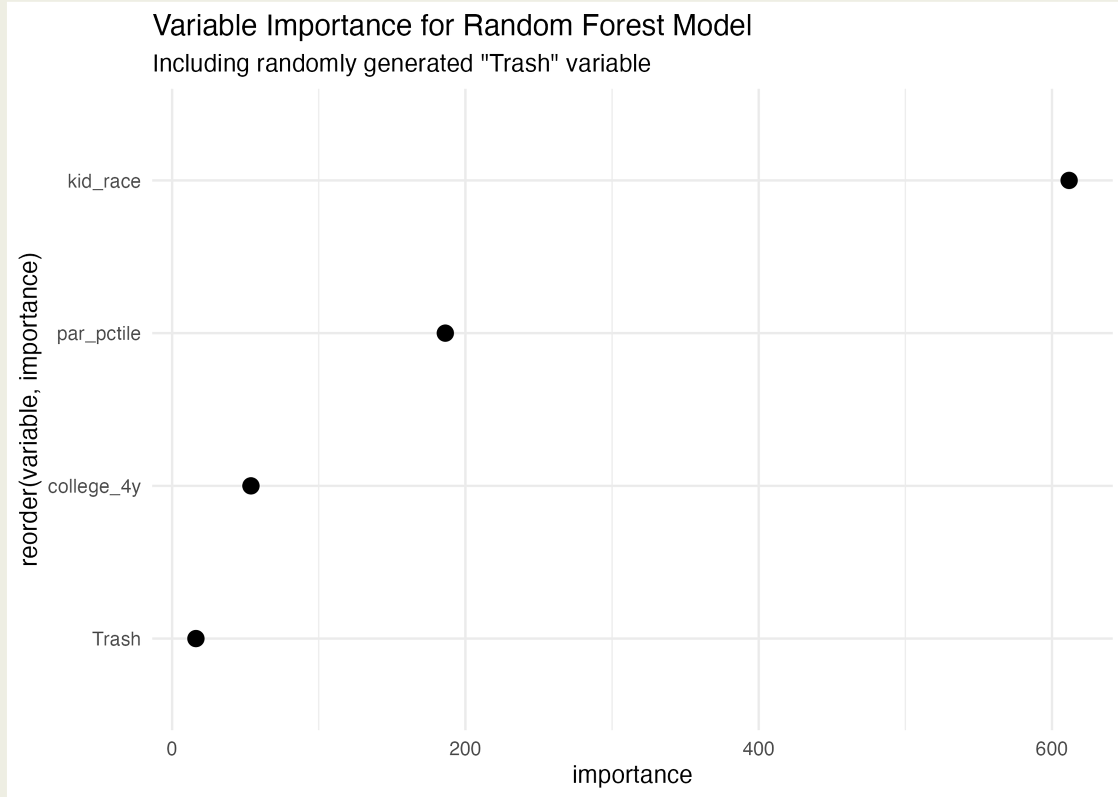
Research Questions and Methods

1. *Do children from different family income percentiles have different delinquency rates in adulthood?*

To test whether children from families with different parental income percentiles (either 25th, 50th, or 75th percentile) differ in terms of adulthood debt delinquency rates, we fit a non-parametric **Kruskal–Wallis** model and conducted **post-hoc Dunn tests**, finding that **all levels were significantly different** from one another, with a consistent negative relationship between parental income and debt delinquency rate.

2. *How do childhood socioeconomic environments predict adult debt delinquency?*

To incorporate childhood socioeconomic environment beyond parental income and race, we used the parental income percentile measure in combination with race and county education rate during childhood (at least four years of college). We fit two models: a **multivariate linear model**, and a **random forest**. We found that all three of parental income, race, and local education levels in childhood had a significant relationship with debt delinquency rates in adulthood, with race and parental income being the most important of the three.



Conclusions

We found that childhood socioeconomic conditions shape financial outcomes in adulthood. Delinquency rates differ significantly across parental income groups, with children from lower-income families exhibiting higher delinquency in adulthood. Furthermore, predictive modeling shows that race and parental income are strong determinants of adult financial distress, while education provides additional predictive power. Together, these results highlight the impact of early-life structural disadvantage on adult financial difficulties.

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