

# SOCIAL CAPITAL ANALYTICS

UNEARTHING ECONOMIC CONNECTEDNESS



# ***MEET THE TEAM***



# **01**

## Data Overview

# **02**

## Methodology

# **03**

## Insights

# **04**

## Recommendations



# SOCIAL CAPITAL



01  
Data Overview

0 0 0

# SOCIAL CAPITAL



## Economic Connectedness

The extent to which people with different characteristics are friends with each other. This includes our main economic connectedness measure

## Cohesiveness

The degree to which friendship networks are clustered into cliques and whether friendships tend to be supported by mutual friends. This includes our clustering and support ratio measures

## Civic Engagement

Indices of trust or participation in civic organizations. This includes our volunteering rate measure

## 01 Data Overview



# SOCIAL CAPITAL



## Economic Connectedness

The extent to which people with different characteristics are friends with each other. This includes our main economic connectedness measure

## Upward Mobility

Ability of individuals or groups to improve their socioeconomic status or position in society over time, often through education, career advancement, or financial success

# 01

## Data Overview

# 01

## Data Overview

# 02

## Methodology

# 03

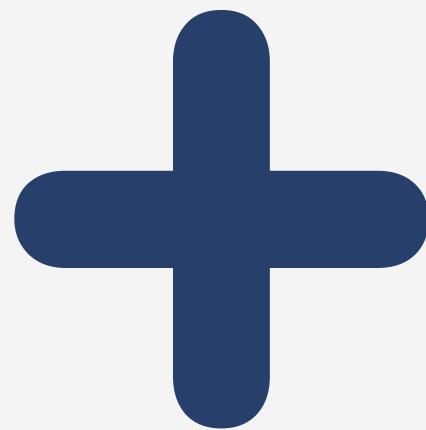
## Insights

# 04

## Recommendations

# 02 : ROADMAP

## Methodology



### Data Preprocessing

Handling missing values, dropping specific columns, finding target variable

### Results

Using machine learning and visualization to demonstrate correlation between connectedness and upward mobility



### Data Understanding

What is social capital?  
What is economic connectedness? How does it affect upward mobility?

### Model Development

Using Linear Regression Model to analyze target variable within county dataset

### Recommendation

Solutions to maximize connectedness and improve upward mobility



# 01

## Data Overview

# 02

## Methodology

# 03

## Insights

# 04

## Recommendations

# KNN REVEALED SUPPORT RATIO HAD VERY STRONG PREDICTIVE CAPABILITIES ON CHILD BIAS

```
# MAE between child_bias_county and support_ratio_county
if __name__ == '__main__':
    data = pd.DataFrame(sc)
    target_variable = 'child_bias_county'
    feature_variables = ['support_ratio_county']
    max_pop_threshold = 100000

    imputer = NumericImputer(n_neighbors=5)
    imputer.train_model(data, target_variable, feature_variables, max_pop_threshold)
    imputed_data = imputer.impute_missing_values(data, target_variable, feature_variables, max_pop_threshold)
    mae_estimate = imputer.evaluate_model(data, target_variable, feature_variables, max_pop_threshold)

    print('MAE Estimate:', mae_estimate)
```

```
MAE Estimate: 0.024329562354170414
```

✓ 0s 

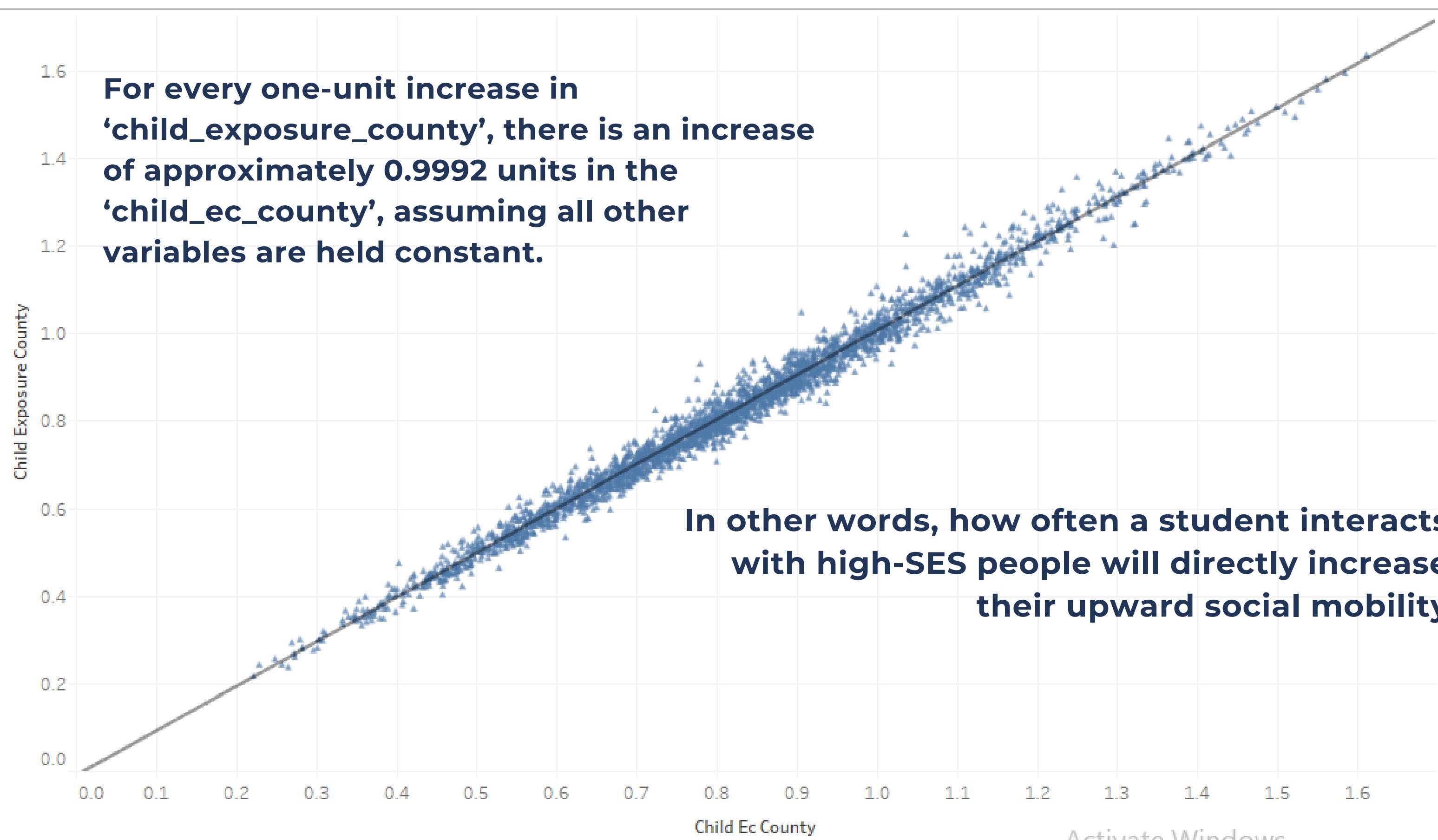
```
# Examine the evaluation results on testing data: MAE and RMSE
MAE = mean_absolute_error(target_test_clean, prediction_on_test)
RMSE = mean_squared_error(target_test_clean, prediction_on_test, squared=False)
print("MAE:", MAE)
print("RMSE:", RMSE)
```

```
MAE: 0.004524477213677742
RMSE: 0.006964966950267455
```

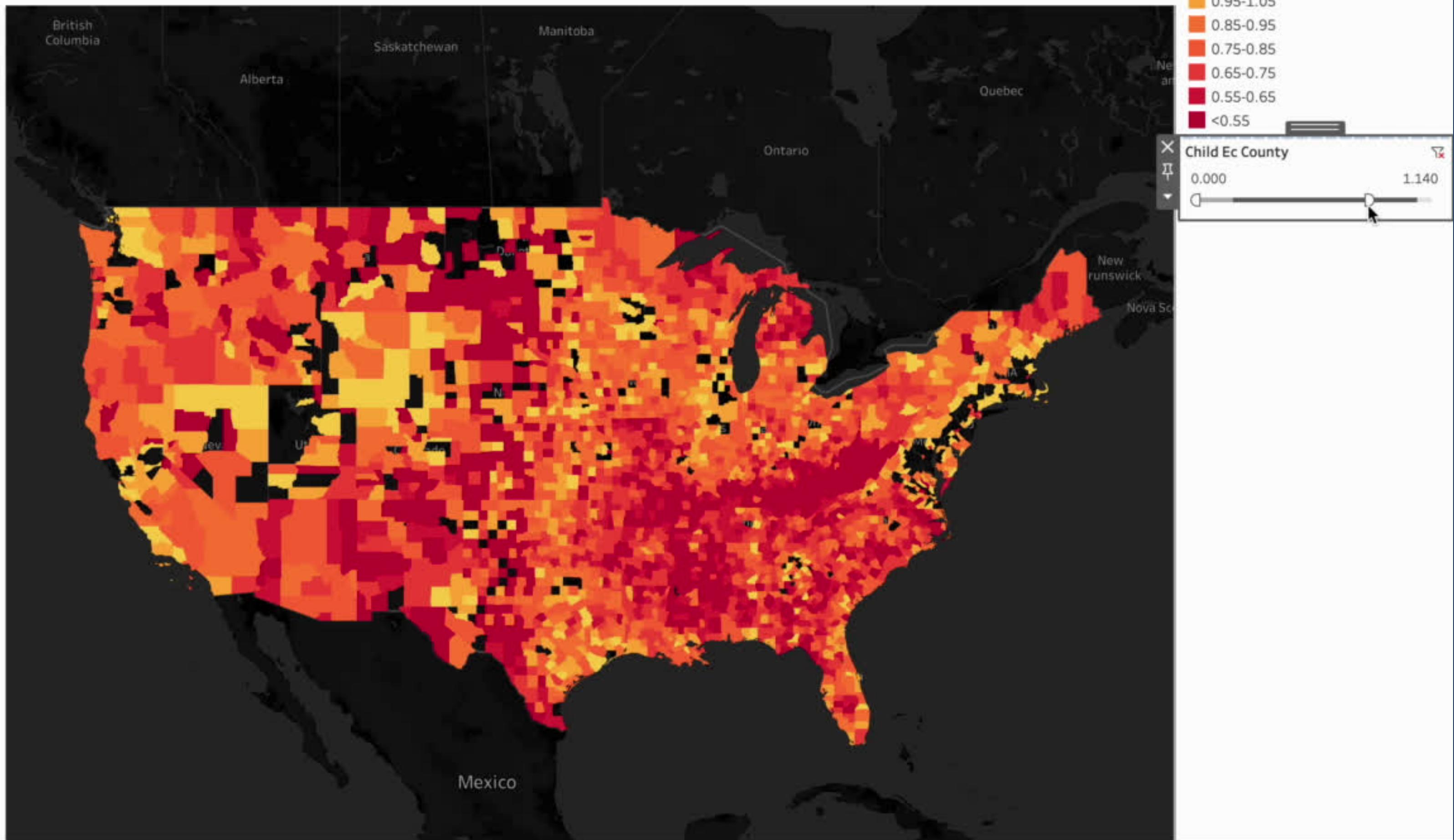
## CHILD ECONOMIC CONNECTEDNESS BASED ON EXPOSURE

**For every one-unit increase in  
'child\_exposure\_county', there is an increase  
of approximately 0.9992 units in the  
'child\_ec\_county', assuming all other  
variables are held constant.**

**In other words, how often a student interacts  
with high-SES people will directly increase  
their upward social mobility**



## Childhood Economic Connectedness by County



# 01

## Data Overview

# 02

## Methodology

# 03

## Insights

# 04

## Recommendations

## oooo **FUTURE PLANS**

- Change how we group and structure children in settings like schools
  - Policy changes focused on social structures could influence friendship patterns and potentially promote cross-class interaction
- Create programs and venues for cross-socioeconomic interaction
  - Policies creating opportunities for meaningful interaction across socioeconomic groups can reduce friending bias and promote individual and community benefits
  - Focusing on interventions that strengthen social capital can have a significant impact on economic mobility.





**THANK  
YOU**

