Education and economic development

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HYPOTHESES

An increase in the number of primary school graduates positively influences GDP growth

Higher literacy rates positively influence GDP growth

Higher government spending on education positively influences GDP growth.

DATA WRANGLIN AND CLEANING

4 Datasets

Dropping and Renaming Columns

Synchronizing Years and summing values

Dropping Null and Infinite Values

Adding Percentage Change rate Columns

Merging DF's and setting the indexes

Data Integration Challenges

- **Synchronizing Years in Dataframes**
- **Synchronizing Countries in Dataframes**
- **Handling Infinite Values**

CORRELATION ANALYSIS

BASIC CORRELATION ANALYSIS

CORR()

LINEAIR REGRESSION MODEL

$$Y = a + bX + \in$$

FILTER OUT OUTLIERS USING Z-SCORES

$$z = \frac{x - \mu}{\sigma}$$

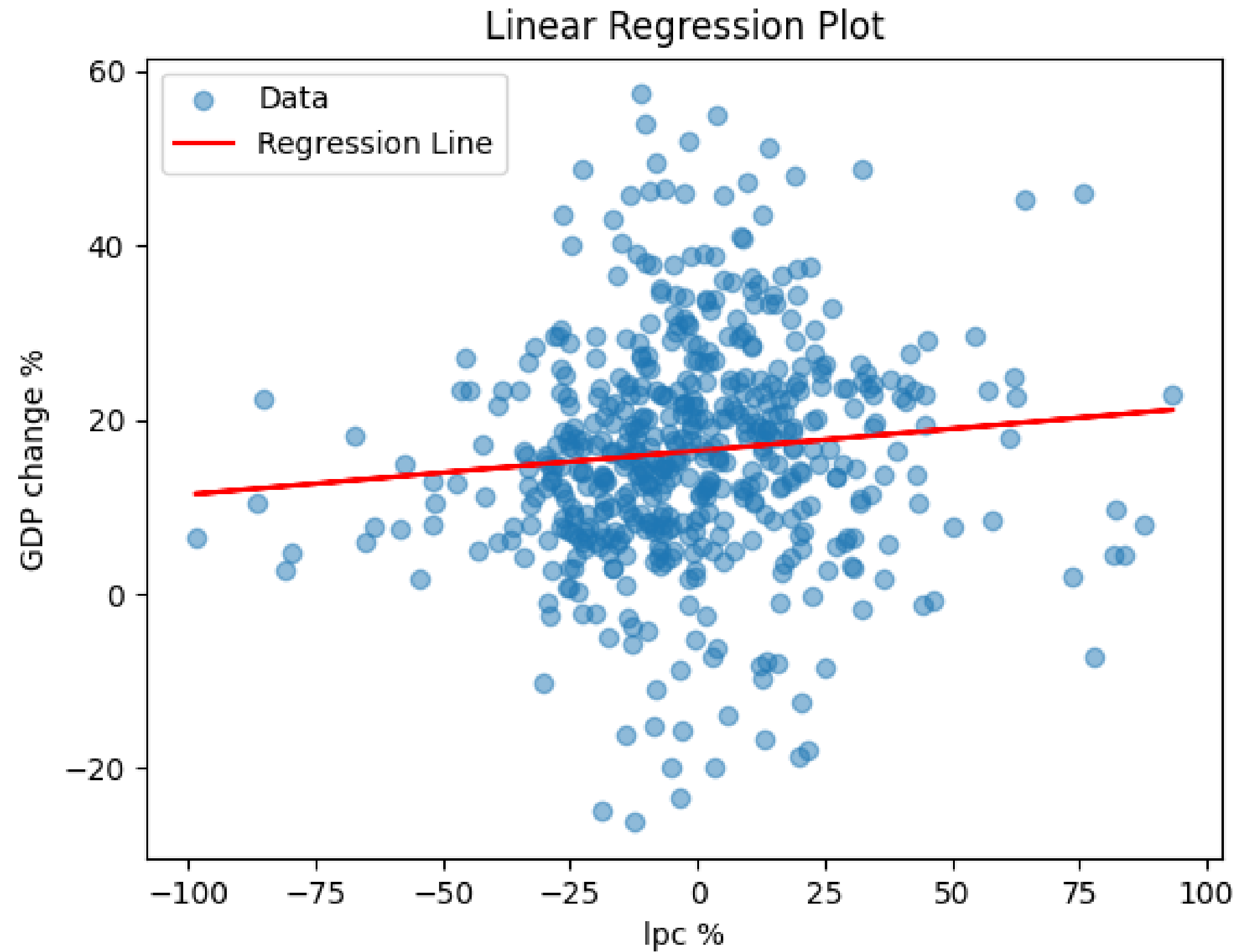**DATA TRANSFORMATIONS FOR IMPROVED MODEL FITTING**

PRIMARY SCHOOL GRADUATES VS. GDP CHANGE

Model with Outliers Filtered Using Z-Scores
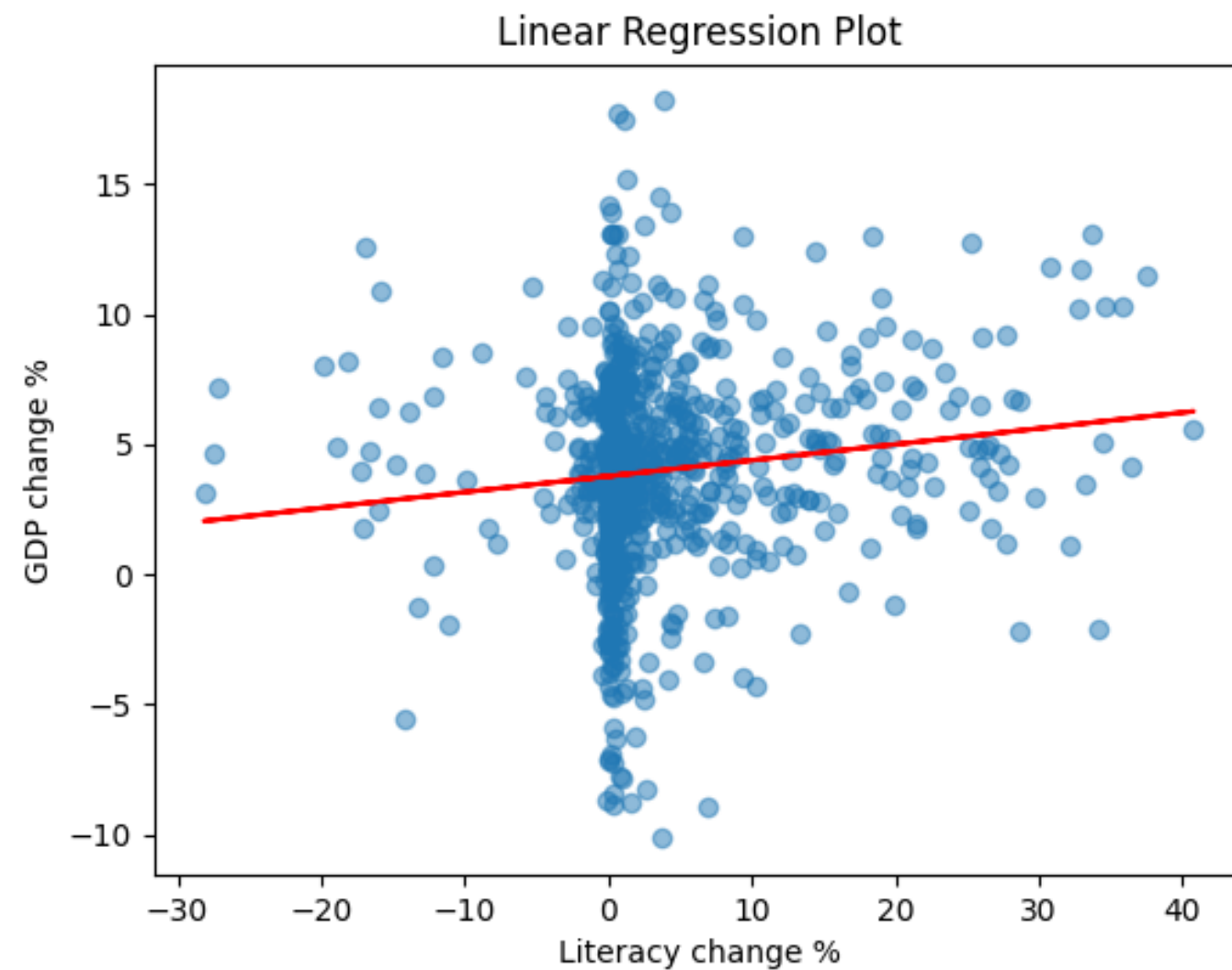
corr() = 0.096

r^2 = 0.01

p = 0.024

RESULTS

CHANGE IN LITERACY RATES VS GDP

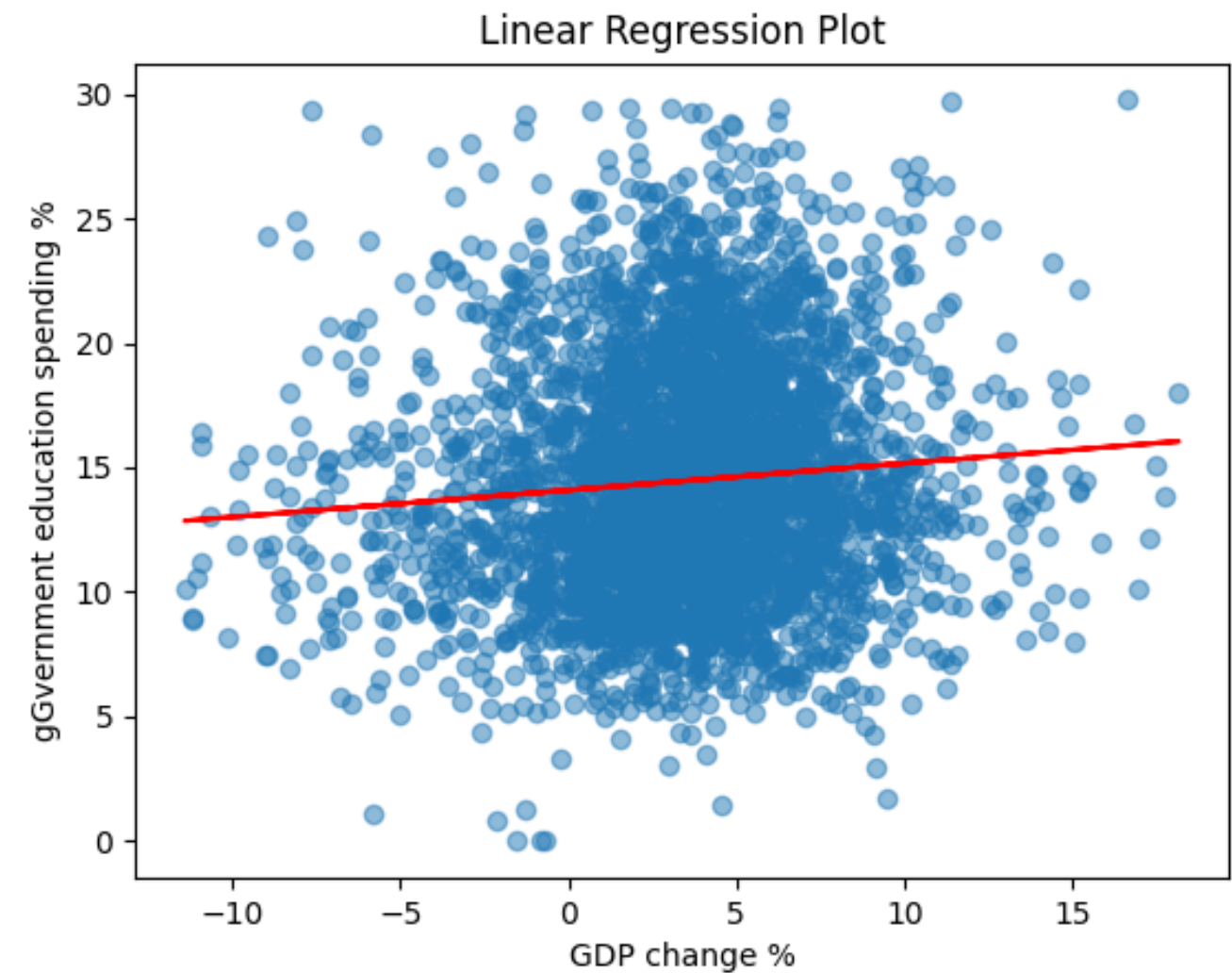CORR() = 0.13

R^2 = 0.017
P = 0

GOVERNMENT INVESTMENT IN EDUCTATION VS GDP

CORR() = 0.09

R^2 = 0.008
P = 0

CONSLUSION

The analysis indicates a slight statistically positive relationship for:

- Primary schooling vs GDP
- Literacy rates vs GDP
- Government investment in eductation vs GDP

Models explanatory power is low in all cases
Additional variables needed to ascertain correlation

MAJOR OBSTACLES

- Low Explanatory Power of Models
- Need for Additional Variables
- Challenges with Dataframe Merging
- Time Constraints

LESSONS LEARNED

- Data Handeling Expertise Needed
- Adaptability

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**THANK YOU FOR
YOUR ATTENTION!**

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