

# Prediction of GDP in African countries in 2024

CSS322 : Scientific Computing



# Project Title

**“Prediction of GDP in  
African countries”**



# INTRODUCTION



**What is the problem of interest, and why is it interesting?**



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# QUESTIONS

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- GDP Prediction Methods
- Impact Factors
- Regional Disparities
- Policy and Investment Implications
- Overcoming Challenges



```
    : false)
Array = array();
= mysqli_fetch_assoc($result);
ectAnswer = $row['Correct'];
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tArray['B'] = $row['Bnum'];
tArray['C'] = $row['Cnum'];
tArray['D'] = $row['Dnum'];
tArray['Correct'] = $correctAnswer;
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return $distArray;
}
$tArray['Error'] = 'Quiz load query failed';
return $distArray;

```



# COMPUTER PROGRAM: PYTHON

- 01** Linear Regression
- 02** Polynomial Regression
- 03** Exponential Regression
- 04** Quadratic Function

## Data Source

World Bank provided GDP data from 2019 to 2023.

## Variables Definition

**GDP:** Gross Domestic Product, representing economic output.

# METHODOLOGY

### Data Transformations

- Preprocessing included handling missing values and outliers.
- Linear and polynomial regression models implemented.

### Analysis Method

- Utilized scikit-learn library in Python.
- Model evaluation based on  $R^2$  values.
- Data split for training and testing.
- Visualizations (scatter plots, regression curves) aided interpretation.

# NUMERICAL RESULT

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What kinds of results  
are obtained ?



**Improved GDP Predictions**



**Key Economic Drivers**



**Regional Insights**



**Policy and Investment Guidance**

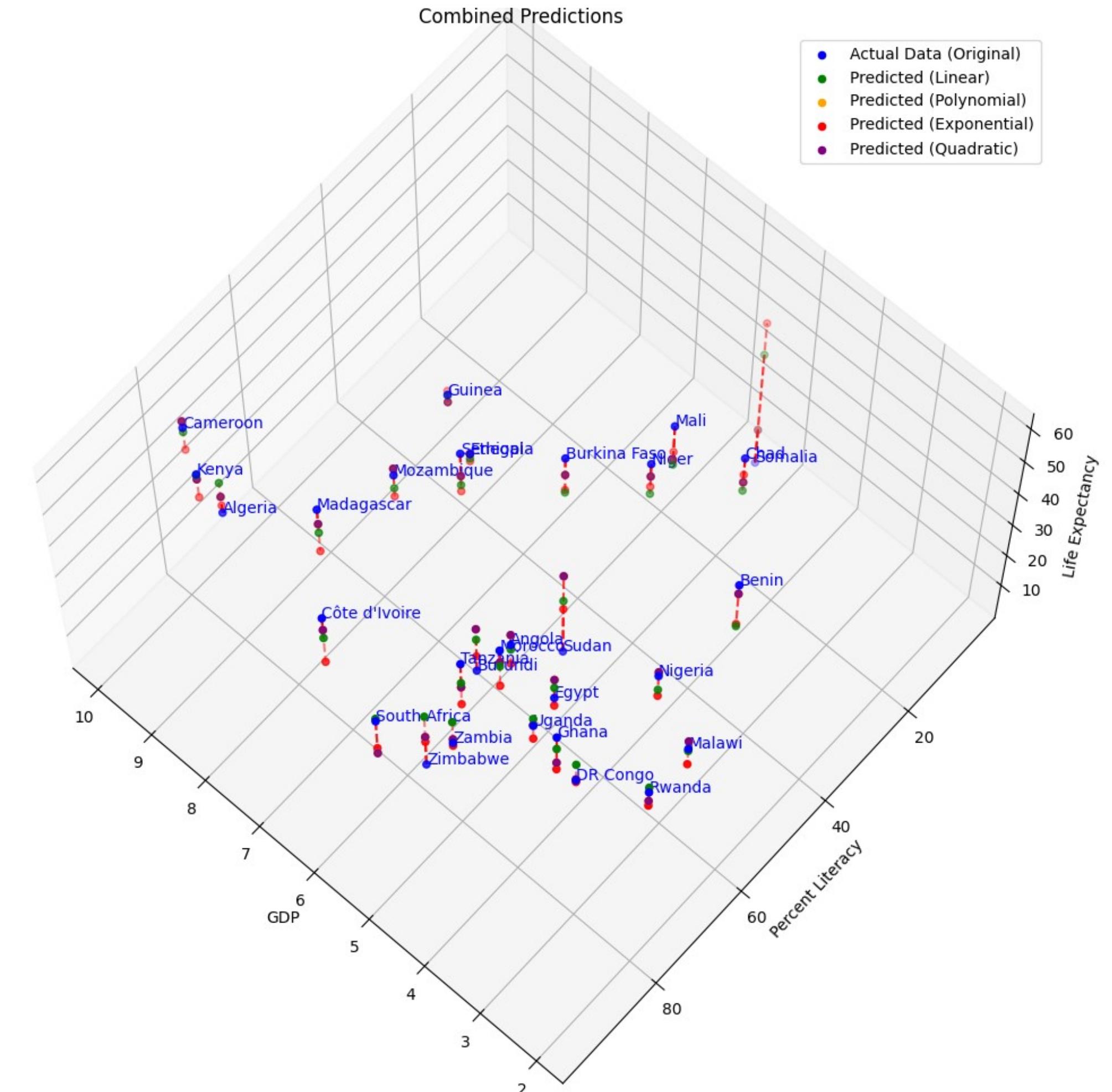


**Mitigation Strategies**

# NUMERICAL RESULT

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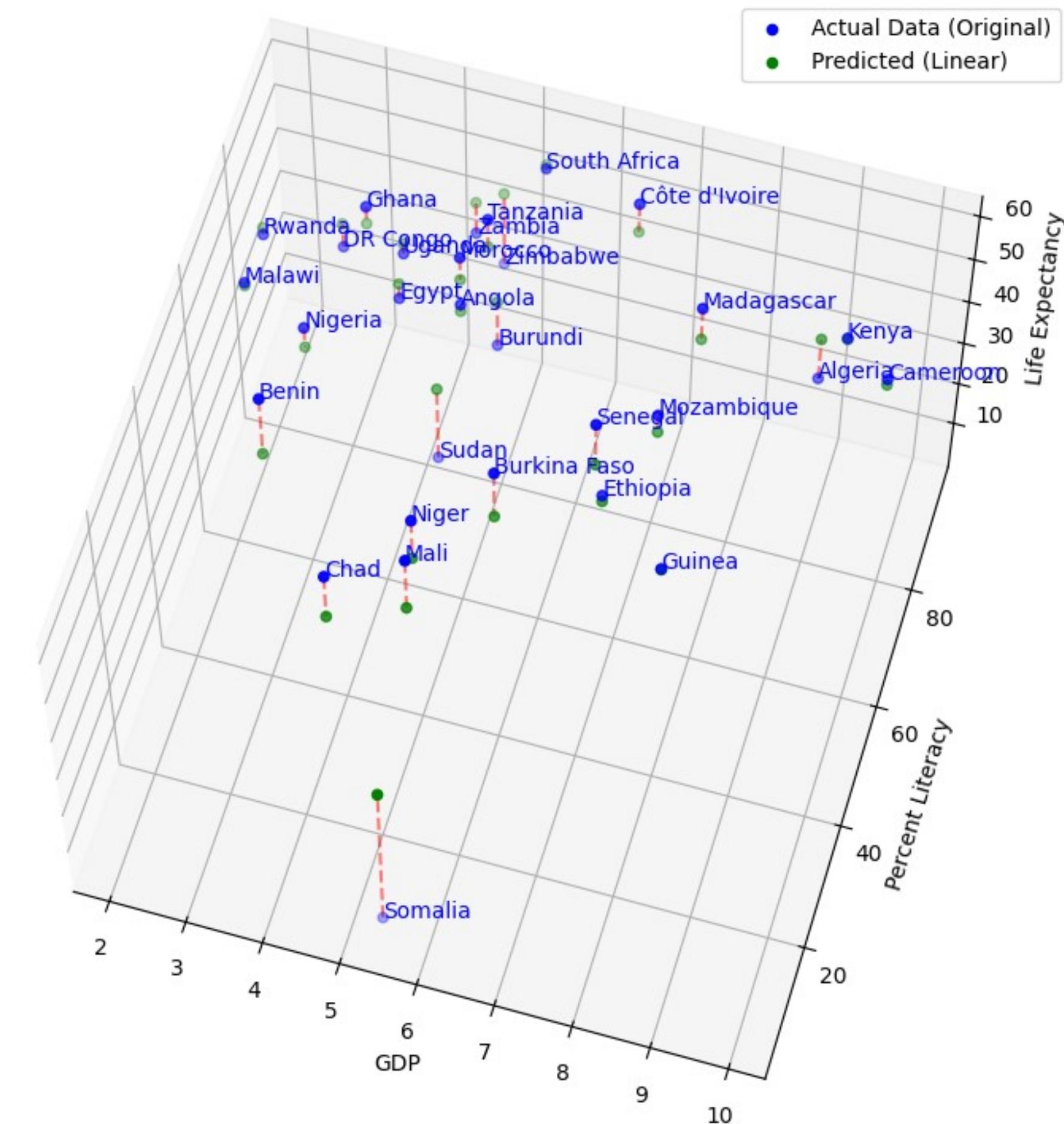
Mitigation Strategies



# NUMERICAL RESULT

Mitigation Strategies

Linear Regression ( $R^2=0.174$ )

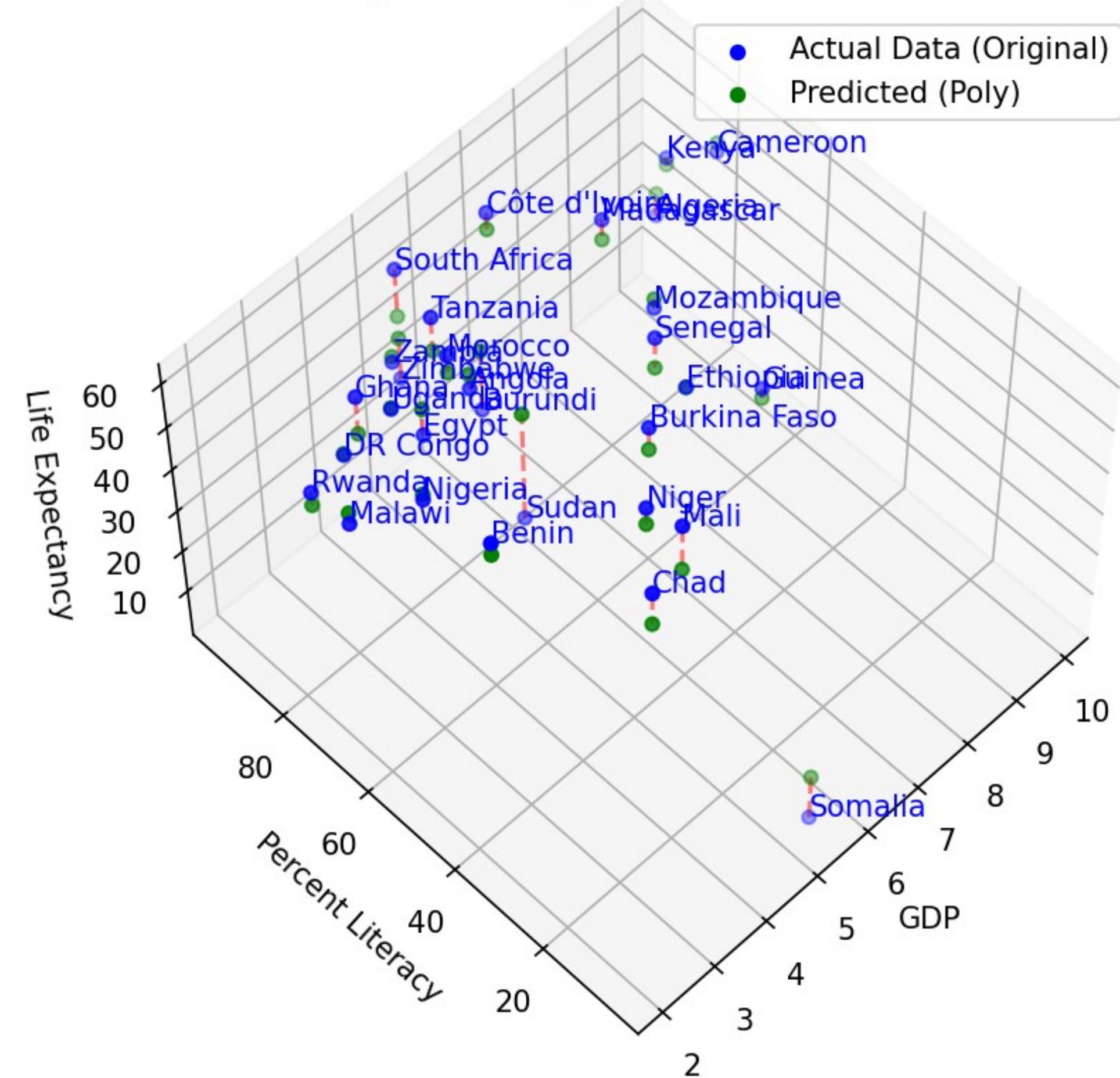


# NUMERICAL RESULT

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Mitigation Strategies

Polynomial Regression ( $R^2=0.533$ )

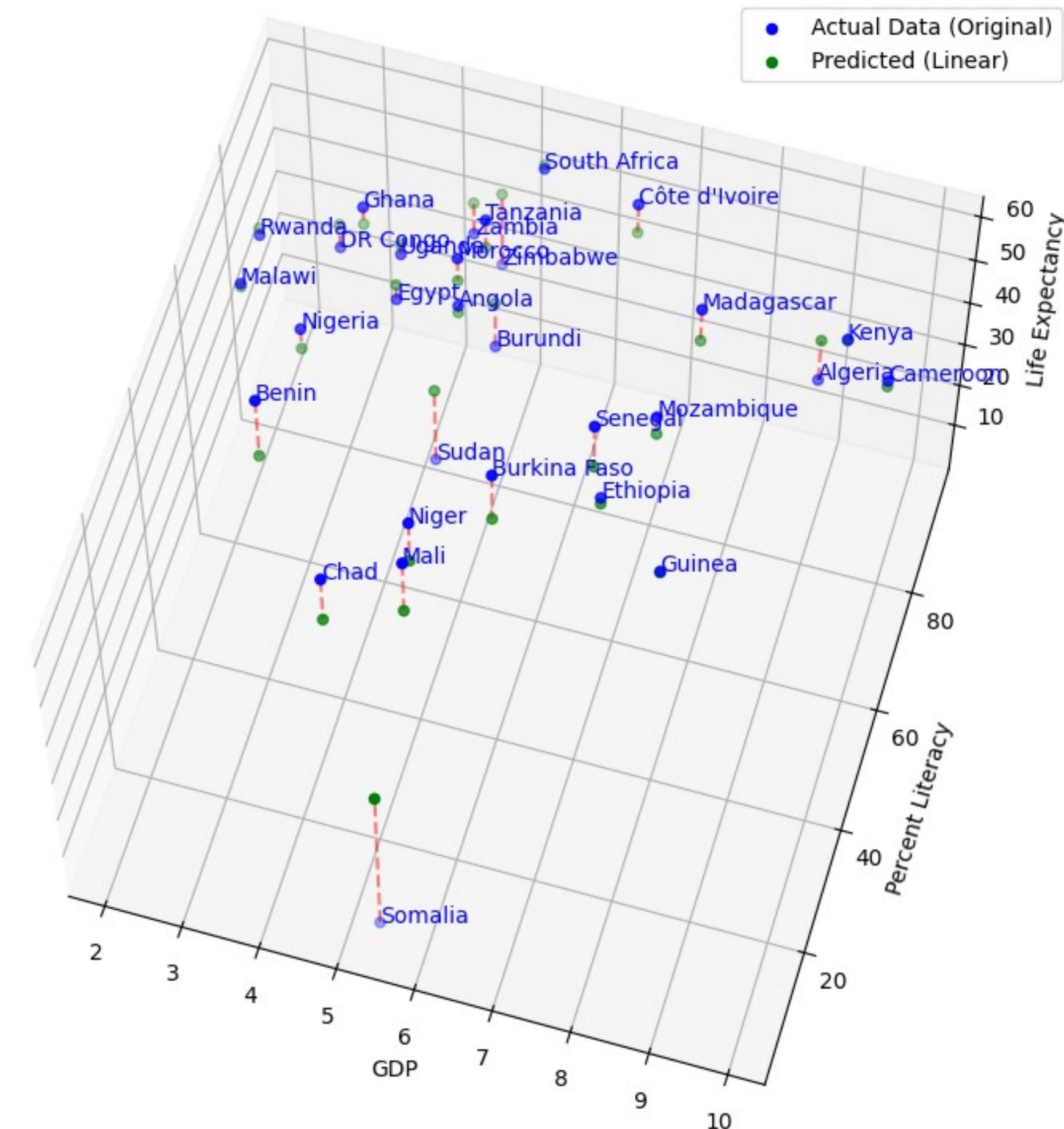


# NUMERICAL RESULT

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Mitigation Strategies

Linear Regression ( $R^2=0.174$ )



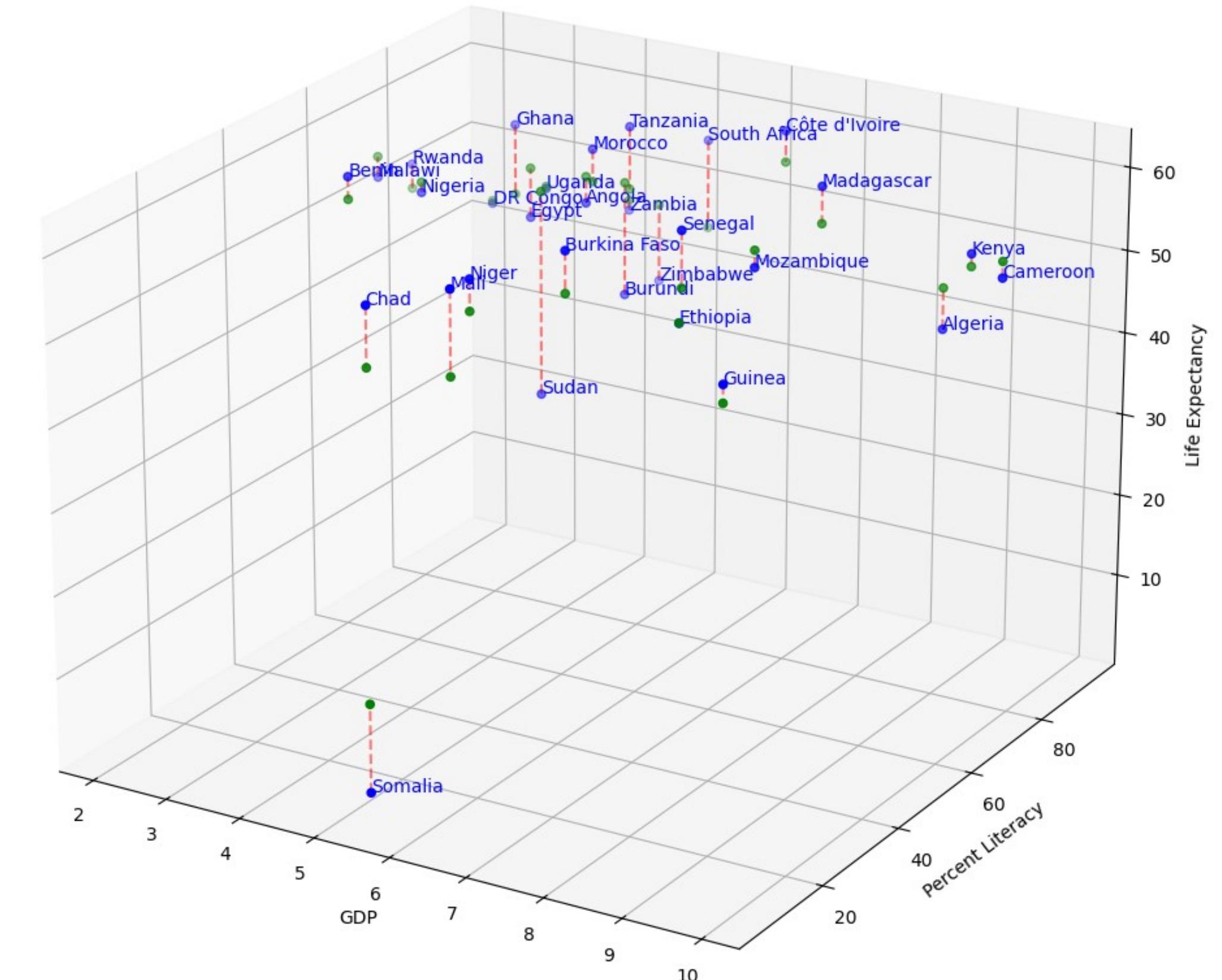
# NUMERICAL RESULT

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Mitigation Strategies

Quadratic Regression ( $R^2=0.533$ )

- Actual Data (Original)
- Predicted (Quadratic)



# CONCLUSION



# THANK YOU FOR YOUR ATTENTION!

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