

KEYWORDS – Happiness Index, Typst, Quarto

I. INTRODUCTION

i. Global Happiness Score

The Life Ladder score, also known as the World Happiness Score, is derived from the Gallup World Poll data. The score is typically calculated based on several key variables that reflect the well-being and quality of life in different countries. Here's a general outline of the formula and components involved in calculating the World Happiness Score:

Component	Description
Life Evaluations (Ladder Question)	Respondents rate their current life from 0 (worst) to 10 (best).
GDP per Capita	Natural logarithm of GDP per capita (PPP terms).
Social Support	Binary response to: "Do you have relatives or friends you can count on for help if needed?"
Healthy Life Expectancy	Life expectancy at birth.
Freedom to Make Life Choices	Binary response to: "Are you satisfied with your freedom to choose what you do with your life?"
Generosity	Donations to charity in the past month, adjusted for GDP per capita
Perceptions of Corruption	Perceived corruption in government and business.
Positive and Negative Affect	Average responses to questions about recent experiences of positive and negative emotions (e.g., laughter, enjoyment, sadness, and anger).

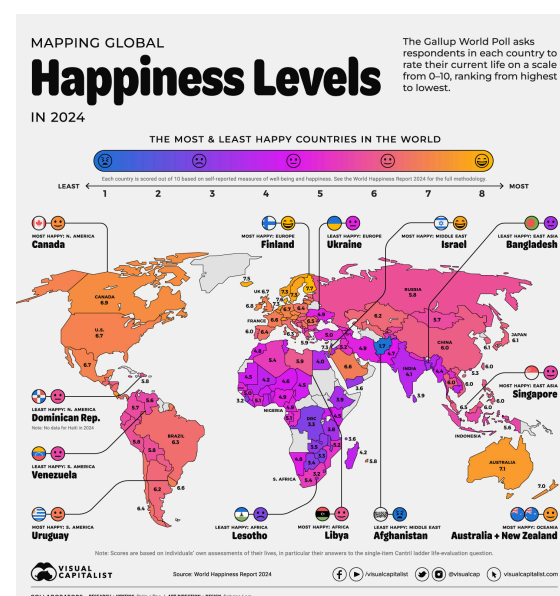
The World Happiness Score is calculated using a regression model that combines these variables to predict the happiness score for each country. The formula for the World Happiness Score can be represented as follows:

$$\begin{aligned} \text{Happiness Score} = & \beta_0 + \beta_1 \times (\text{Log GDP per capita}) \\ & + \beta_2 \times (\text{Social Support}) + \beta_3 \times (\text{Healthy Life Expectancy}) \\ & + \beta_4 \times (\text{Freedom to Make Life Choices}) + \beta_5 \times (\text{Generosity}) \\ & + \beta_6 \times (\text{Perceptions of Corruption}) + \beta_7 \times (\text{Positive Affect}) - \beta_8 \times (\text{Negative Affect}) \end{aligned} \quad (1)$$

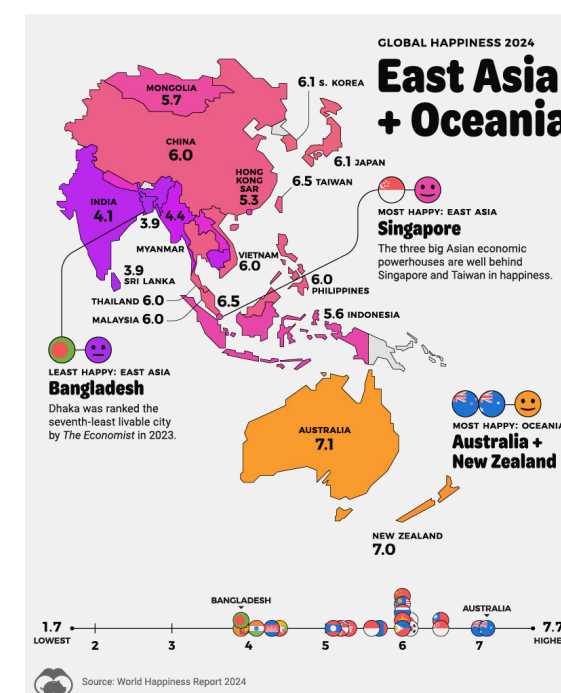
Where β_0 to β_8 are coefficients derived from regression analysis based on historical data.

ii. Visualcapitalist's Global Happiness Levels Report

The following Figure 1 from Visualcapitalist presents the global happiness levels in 2024, as reported in the **World Happiness Report**. The static world map provides a visual representation of the happiness scores across different countries, with the color gradient indicating the relative happiness levels. The visualization aims to highlight the disparities in happiness levels worldwide and the factors that contribute to these variations. However, through our critical analysis, we identified several strengths and weaknesses in the original visualization that we aim to improve as detailed below.



(a) Global Overview World map of Happiness Levels in 2024



(b) Map of Happiness Levels of East Asia + Oceania in 2024

Figure 1: Visualcapitalist Global Happiness Levels Report

II. METHODS

i. Data Understanding and Cleaning

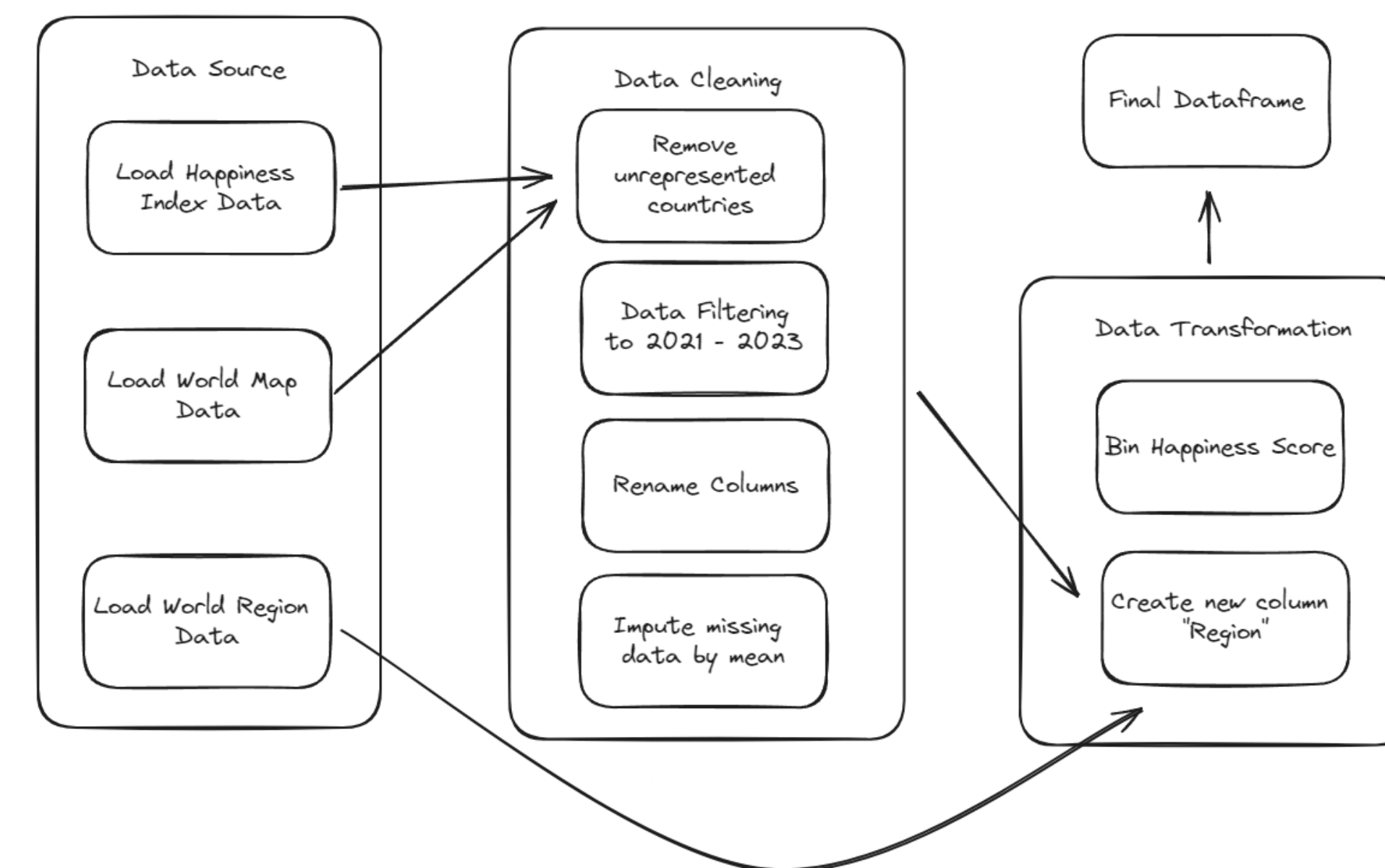
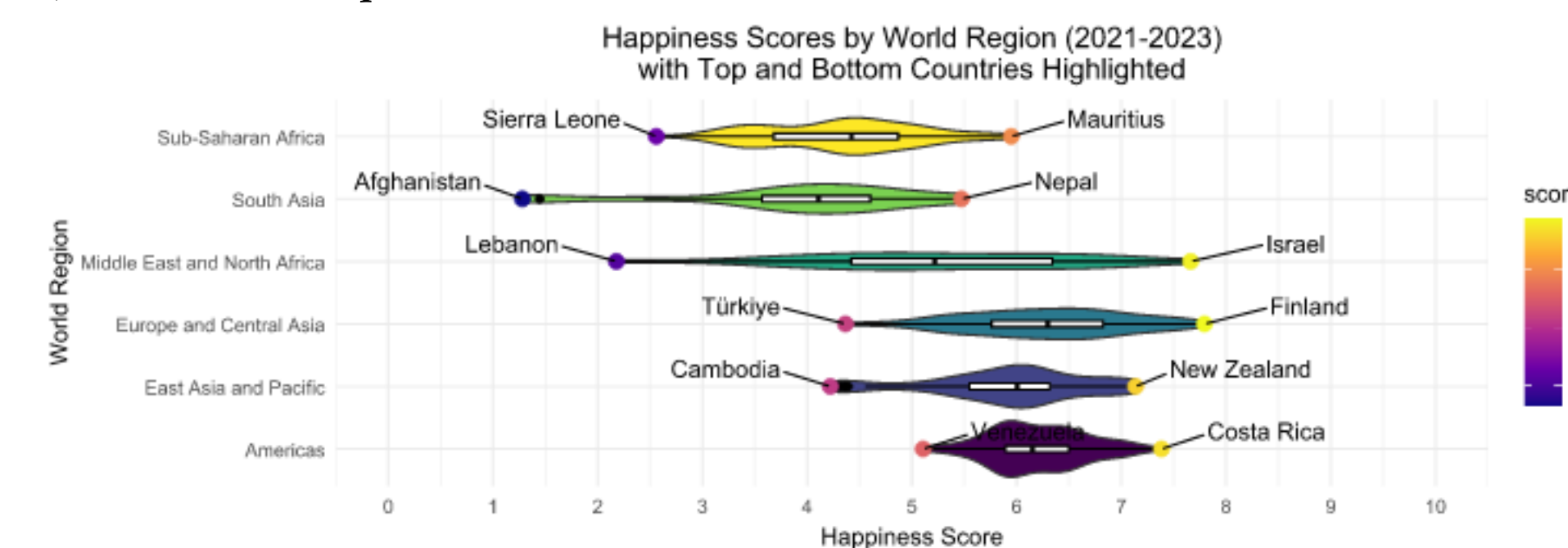


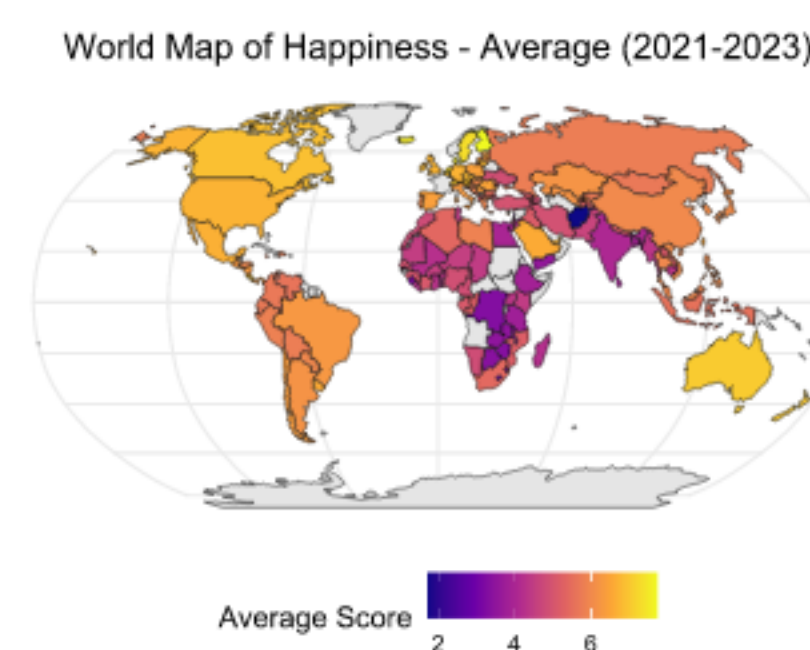
Figure 2: Data Prep Pipeline

ii. Data Visualization

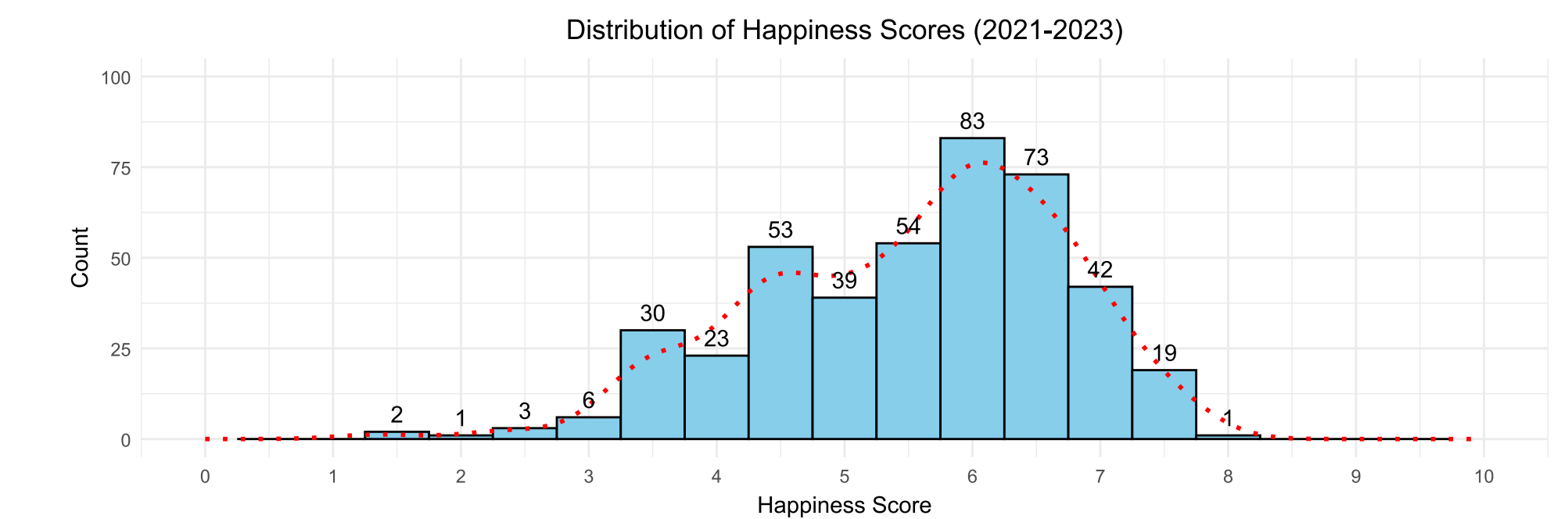
1) Create violin plot:



2) World Map:



3) Distribution Chart of Scores:



III. FINDINGS

IV. CONCLUSION

V. ACKNOWLEDGEMENT