**Key Insights from the Datasets:**

1. **Dataset Comparison:**
   * **The first dataset (Money\_vs\_Happiness\_feature\_engineered\_dataset.csv) has 41 columns, including engineered features like *Generosity\_Per\_Dollar*, *Trust\_Factor*, and *Trade\_Off\_Index*.**
   * **The second dataset (Money\_vs\_Happiness\_dataset.csv) has 32 columns, containing core economic, social, and happiness-related factors.**
2. **Key Metrics for Visualization:**
   * **Happiness Metrics: *Life Ladder* (overall happiness score), *Positive affect*, *Negative affect*.**
   * **Economic Indicators: *Log GDP per capita*, *Tax Revenue*, *Total Emissions*.**
   * **Social & Political Factors: *Social Support*, *Freedom to make life choices*, *Democracy Index*, *Rule of Law Index*.**
   * **Health Metrics: *Healthy life expectancy at birth*, *Median Age*.**
   * **Environmental Factors: *Total Emissions*, *Renewable vs Non-Renewable Energy Production*.**
3. **Important Metrics for Predictive Modeling:**
   * **Target Variable: *Life Ladder* (happiness score).**
   * **Predictors:**
     + **Economic: *Log GDP per capita*, *Tax Revenue*.**
     + **Social & Governance: *Democracy Index*, *Rule of Law Index*, *Freedom to make life choices*.**
     + **Health: *Healthy life expectancy at birth*, *Food Supply (kcal per capita per day)*.**
     + **Environmental: *Total Emissions*, *Urban Population (%)*.**

**Next Steps:**

* **Visualization: Would you like charts like scatterplots, bar charts, or correlation heatmaps?**
* **Predictive Modeling: Do you want a regression model to predict happiness or a classification model (e.g., high vs low happiness levels)?**
*  **Correlation Heatmap** – To identify relationships between variables.
*  **Scatterplot (Happiness vs GDP per Capita)** – To show how economic factors influence happiness.
*  **Bar Chart (Top/Bottom Countries by Happiness Score)** – To compare happiness levels across different nations.
* Here's the **correlation heatmap**, which highlights relationships between different variables. Strong positive correlations (red) and negative correlations (blue) can help us identify key drivers of happiness.
* Next, I'll generate a **scatterplot of Happiness (Life Ladder) vs GDP per Capita** to see if economic factors impact happiness. ​​
* This scatterplot shows the relationship between **Happiness (Life Ladder) and GDP per Capita**. The red trendline suggests a positive correlation, meaning countries with higher GDP per capita generally report higher happiness levels.
* Next, I'll generate a **bar chart for the top and bottom countries by Happiness Score (Life Ladder)**. ​

**Step 1: Connect to Your Data**

1. Open **Tableau** and click **Connect to Data**.
2. Select **"Text File"** and upload Money\_vs\_Happiness\_dataset.csv.
3. If you have the feature-engineered dataset, upload it separately and join the datasets if needed.

**Step 2: Understand Your Data Structure**

* Go to the **Data Source tab** and inspect the columns.
* Identify:
  + **Dimensions (Categorical)**: Country Name, Region, Year.
  + **Measures (Numerical)**: Life Ladder (Happiness), Log GDP per Capita, Social Support, Healthy Life Expectancy, etc.

**Step 3: Create Key Metrics & KPIs**

1. **Happiness Index Analysis**:
   * Drag Country Name to **Rows**.
   * Drag Life Ladder (Happiness Score) to **Columns**.
   * Create a **calculated field** for ranking countries by happiness:

tableau

CopyEdit

RANK(SUM([Life Ladder]))

* + Use this in a **Top 10 / Bottom 10 countries visualization**.

1. **GDP vs Happiness Relationship**:
   * Create a **scatterplot**:
     + Drag Log GDP per Capita to **Columns**.
     + Drag Life Ladder to **Rows**.
     + Add Country Name as a **Label**.
2. **Correlation Analysis**:
   * Use Analytics Pane to add a **Trend Line** to see relationships between **GDP per capita and Happiness**.
3. **Predictive Modeling in Tableau**:
   * Use **Trend Lines & Forecasting**:
     + Click **Analytics Tab** → Drag Forecast to Life Ladder.
     + Choose **Exponential Smoothing** to predict future happiness trends.

**Step 4: Build a Dashboard**

1. **Create Four Panels** (as per your Power BI dashboard approach):
   * **Panel 1:** World Happiness Ranking (Map/Bar Chart).
   * **Panel 2:** GDP vs Happiness (Scatterplot).
   * **Panel 3:** Key Predictors (Table with Social, Economic, and Health factors).
   * **Panel 4:** Predictive Model (Forecasting Chart).
2. **Add Filters & Interactivity**:
   * Add **Year Slider** to compare trends over time.
   * Allow users to filter by **Region or Income Level**.

**Step 5: Export & Share**

* Save the dashboard and export insights as **PDF or interactive Tableau Public link**.

Would you like detailed steps on creating specific **calculated fields** or **forecast models**?

**1. Key Calculated Fields for Insights**

These fields will help refine your analysis and storytelling.

**1.1 Happiness Rank Calculation**

To rank countries based on their Happiness Score (Life Ladder):

1. Go to **Data Pane** → Click on **Create Calculated Field**.
2. Name it **Happiness Rank** and enter:

tableau

CopyEdit

RANK(SUM([Life Ladder]), 'desc')

1. Use this in a table or bar chart to show the happiest and least happy countries.

**1.2 GDP Per Capita Category**

To classify countries into income categories:

1. Create a new calculated field called **GDP Category**:

tableau

CopyEdit

IF [Log GDP per Capita] > 10 THEN "High Income"

ELSEIF [Log GDP per Capita] > 8 THEN "Upper Middle Income"

ELSEIF [Log GDP per Capita] > 6 THEN "Lower Middle Income"

ELSE "Low Income"

END

1. Use this as a **filter or color code** in your GDP vs Happiness analysis.

**1.3 Social & Economic Score Index**

To create a combined index for economic and social factors:

1. Create a calculated field **Social Economic Index**:

tableau

CopyEdit

([Social Support] + [Freedom to make life choices] + [Log GDP per Capita] + [Democracy Index]) / 4

1. Use this to rank countries based on overall well-being.

**2. Adding Interactivity to Your Story**

**2.1 Dynamic Filters**

* Add a **Year Filter** to see changes over time.
* Create a **Country or Region Filter** to compare specific areas.

**2.2 Highlighter for Specific Countries**

* Use the **Highlighter tool** to let users focus on one country at a time.

**2.3 Story Navigation with Buttons**

* Add **Next/Previous Story Points** using **Text Boxes** and linking them to different slides.

**3. Implementing Forecasting in Tableau**

To predict **future happiness scores**:

1. Create a **Time Series Chart**:
   * Drag Year to **Columns**.
   * Drag Life Ladder to **Rows**.
2. Open **Analytics Pane** → Drag **Forecast**.
3. Choose **Exponential Smoothing** for the best trend prediction.

**How to Start with a Storyboard in Tableau**

A **Storyboard** in Tableau is a step-by-step narrative that combines different visualizations into a cohesive **story**. Here's how to get started:

**Step 1: Prepare Your Worksheets**

Before creating a story, you need to have **multiple worksheets or dashboards** that represent different parts of your analysis. Here are some ideas:

1. **Global Happiness Overview** (Map) – Shows how happiness scores vary by country.
2. **GDP vs Happiness** (Scatterplot) – Highlights economic impact on happiness.
3. **Social & Political Influence** (Bar Chart) – Examines governance and social support.
4. **Health & Environmental Impact** (Dual-Axis Chart) – Shows relationships between life expectancy, pollution, and happiness.
5. **Predictive Modeling (Forecast)** – Uses trends to forecast future happiness scores.

**Step 2: Create a New Story**

1. Open **Tableau**.
2. Click **New Story** from the bottom tabs.
3. Choose **Story Size** (e.g., Default, Laptop, or Custom).

**Step 3: Add Story Points**

A **Story Point** is a slide within the story, representing a different insight.

1. Drag your **first worksheet/dashboard** onto the canvas.
2. Add a **caption** at the top to explain the insight.
   * Example: *"Happiness varies globally—let’s explore why."*
3. Click **"New Story Point"** to add the next slide.
4. Repeat the process for all key insights (e.g., GDP impact, social factors, forecasts).

**Step 4: Make It Interactive**

* Add **Filters** (Year, Region, Country) to allow comparisons.
* Use **Highlight Actions** to focus on specific countries.
* Add **Next/Previous Buttons** to guide the flow.

**Step 5: Publish and Share**

* Click **File → Save to Tableau Public** (or export as PDF).
* Share the link or embed it in a report.