```python
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt


# Read the dataset
df = pd.read_csv('../data/population_dynamics_clean.csv')


# Life Expectancy Rate by Country Over Time

plt.figure(figsize=(10, 6))
sns.lineplot(
    data=df,
    x="year",
    y="life_expectancy",
    hue="country",
    marker="o"
)

plt.title("Life Expectancy Over Time by Country", fontsize=14)
plt.xlabel("Year")
plt.ylabel("Life Expectancy (Years)")
plt.legend(title="Country")
plt.xticks(sorted(df['year'].unique()), rotation=45)  # Show all x-axis ticks for years
plt.tight_layout()
plt.show()
```
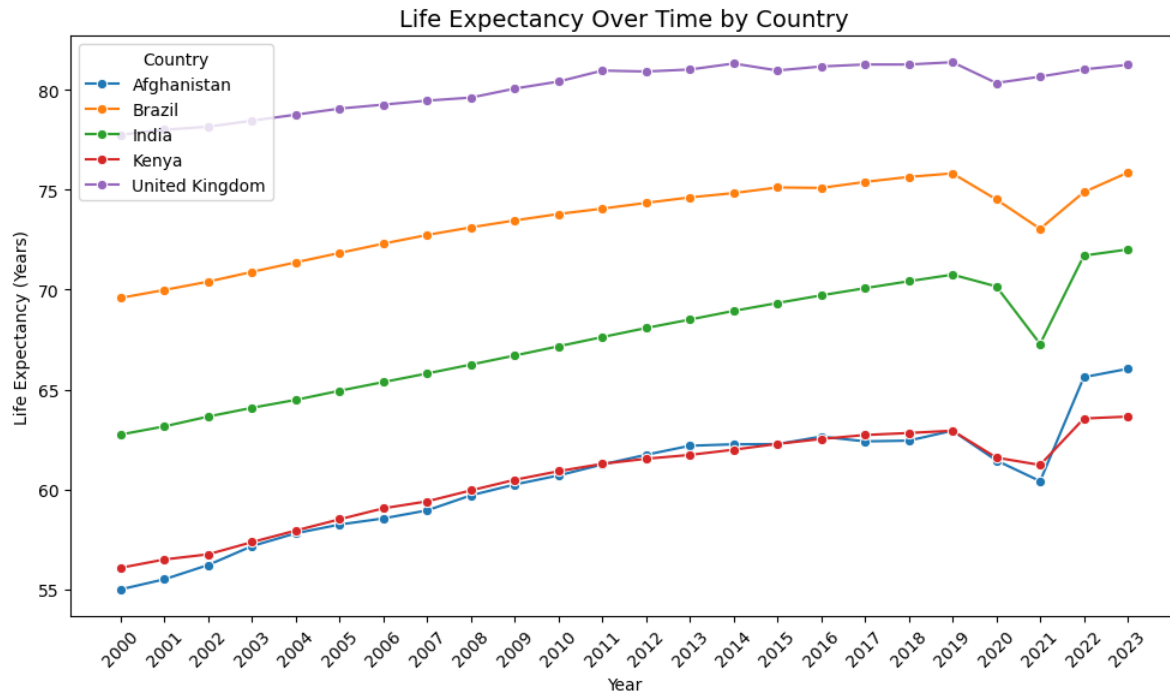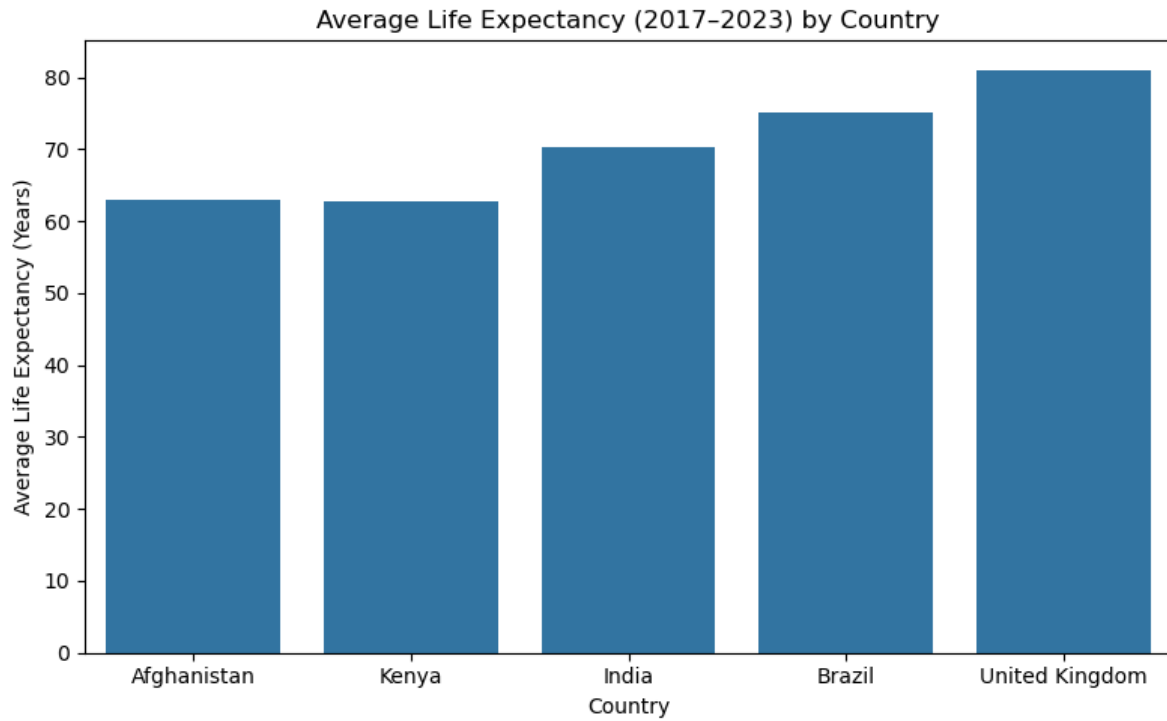
Life Expectancy Over Time by Country

```python
# Bar plot of average life expectancy per country
avg_life_exp = (
    df[df['year'].between(2017, 2023)]
    .groupby("country")["life_expectancy"]
    .mean()
    .reset_index()
)

country_order = ['Afghanistan', 'Kenya', 'India', 'Brazil', 'United Kingdom']

plt.figure(figsize=(8, 5))
sns.barplot(data=avg_life_exp, x="country", y="life_expectancy", order=country_order)
plt.title("Average Life Expectancy (2017-2023) by Country")
plt.ylabel("Average Life Expectancy (Years)")
plt.xlabel("Country")
plt.tight_layout()
plt.show()
```

Average Life Expectancy (2017–2023) by Country


```python
# Average Life Expectancy by Country

table_1 = (
    df[df['year'].between(2017, 2023)]
    .groupby('country', as_index=False)['life_expectancy']
    .mean()
    .round(3)
)
table_1.columns = ['Country', 'Average Life Expectancy (2017-2023)']
table_1
```

	Country	Average Life Expectancy (2017–2023)
0	Afghanistan	63.045
1	Brazil	75.013
2	India	70.338
3	Kenya	62.644
4	United Kingdom	81.016