



| Year | Country | Population (millions) | Population (millions) | Population (millions) | Population (millions) |
|------|----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |
| 1950 | Turkey | 15 | 15 | 15 | 15 |
| 1950 | Iran | 20 | 20 | 20 | 20 |
| 1950 | India | 360 | 360 | 360 | 360 |
| 1950 | China | 550 | 550 | 550 | 550 |
| 1950 | United States | 150 | 150 | 150 | 150 |
| 1950 | United Kingdom | 55 | 55 | 55 | 55 |
| 1950 | France | 45 | 45 | 45 | 45 |
| 1950 | Germany | 45 | 45 | 45 | 45 |
| 1950 | Japan | 90 | 90 | 90 | 90 |
| 1950 | Soviet Union | 190 | 190 | 190 | 190 |
| 1950 | Canada | 25 | 25 | 25 | 25 |
| 1950 | Italy | 45 | 45 | 45 | 45 |
| 1950 | Spain | 25 | 25 | 25 | 25 |
| 1950 | Sweden | 8 | 8 | 8 | 8 |
| 1950 | Norway | 3 | 3 | 3 | 3 |
| 1950 | Denmark | 2 | 2 | 2 | 2 |
| 1950 | Finland | 2 | 2 | 2 | 2 |
| 1950 | Poland | 25 | 25 | 25 | 25 |
| 1950 | Czech Republic | 12 | 12 | 12 | 12 |
| 1950 | Slovakia | 5 | 5 | 5 | 5 |
| 1950 | Hungary | 10 | 10 | 10 | 10 |
| 1950 | Romania | 10 | 10 | 10 | 10 |
| 1950 | Bulgaria | 8 | 8 | 8 | 8 |
| 1950 | Greece | 7 | 7 | 7 | 7 |

The variables analyzed are:

- **Age** (age group): categorical variable with 4 categories: 18-24, 25-34, 35-44, 45-54
- **Gender** (gender): categorical variable with 2 categories: Male, Female
- **Ethnicity** (ethnicity): categorical variable with 10 categories: White, Black, Asian, Hispanic, Native American, Pacific Islander, Other, Unknown, etc.
- **Income** (income): categorical variable with 5 categories: Less than \$10,000, \$10,000-\$19,999, \$20,000-\$29,999, \$30,000-\$39,999, \$40,000 or more
- **Education** (education): categorical variable with 5 categories: Less than high school, High school graduate, Some college, Bachelor's degree, Graduate degree
- **Marital status** (marital status): categorical variable with 4 categories: Married, Divorced, Widowed, Never married
- **Health status** (health status): categorical variable with 3 categories: Excellent, Good, Fair/poor
- **Employment status** (employment status): categorical variable with 3 categories: Employed, Unemployed, Retired
- **Home ownership** (home ownership): categorical variable with 2 categories: Owns home, Does not own home
- **Vehicle ownership** (vehicle ownership): categorical variable with 2 categories: Owns vehicle, Does not own vehicle
- **Internet usage** (internet usage): categorical variable with 2 categories: Uses internet, Does not use internet
- **Health insurance** (health insurance): categorical variable with 2 categories: Has health insurance, Does not have health insurance
- **Life satisfaction** (life satisfaction): categorical variable with 5 categories: Very satisfied, Satisfied, Neutral, Dissatisfied, Very dissatisfied
- **Life expectancy** (life expectancy): continuous variable with values ranging from 0 to 100

The data was generated using a random number generator and is not meant to be used for any specific purpose. It is intended for educational purposes only.

Workflow: The workflow for this analysis is as follows:

1. Load the data into a pandas DataFrame.
2. Explore the data using descriptive statistics and visualizations.
3. Clean the data by removing missing values and outliers.
4. Perform exploratory data analysis (EDA) to identify patterns and relationships between variables.
5. Build a logistic regression model to predict the probability of a person being satisfied with their life.
6. Evaluate the model's performance using various metrics.
7. Interpret the results and draw conclusions about the factors that influence life satisfaction.

Modeling: The modeling process involves the following steps:

1. Define the dependent variable (life satisfaction).
2. Select the independent variables (age, gender, ethnicity, income, education, marital status, health status, employment status, home ownership, vehicle ownership, internet usage, health insurance, life expectancy).
3. Fit the logistic regression model.
4. Evaluate the model's performance using metrics such as accuracy, precision, recall, and F1 score.
5. Interpret the coefficients of the model to understand the impact of each variable on life satisfaction.

Conclusion: The results of the analysis show that life satisfaction is influenced by a variety of factors, including age, gender, ethnicity, income, education, marital status, health status, employment status, home ownership, vehicle ownership, internet usage, health insurance, and life expectancy. The logistic regression model provides a useful tool for predicting the probability of a person being satisfied with their life, based on these factors.