



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

WORLD HAPPINESS REPORT

**The domain of the Project:
Data visualization(Power BI)**

COURSE NAME

SQL & Power BI

Mentor (and their designation):

Sravan Nemana

Lead Marketing Analytics Consultant

Project Members:

Mr. Adimulam Rahul sai

Period of the project

November 2025 to December 2025



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

Declaration

The project titled “World Happiness Report” has been mentored by Sravan Nemana, organised by SURE Trust, from July 2025 to December 2025, for the benefit of the educated unemployed rural youth for gaining hands-on experience in working on industry relevant projects that would take them closer to the prospective employer. I declare that to the best of my knowledge the members of the team mentioned below, have worked on it successfully and enhanced their practical knowledge in the domain.

Team Members:

Mr. Adimulam Rahul sai

Mentor's Name :

Mr.Sravan Nemana
Lead Marketing Analytics Consultant

Prof. Radhakumari
Executive Director & Founder
SURE Trust



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Executive Summary

Project Overview:

The World Happiness Report project was developed using Power BI with the aim of analyzing global happiness patterns and identifying key factors influencing well being across countries. The study focuses on economic indicators, trust, health, generosity, and social support to understand variations in happiness scores worldwide.

Objectives:

- To analyze the relationship between Economic growth, Trust, and Happiness levels.
- To compare Top 10 and Bottom 10 happiest countries using visual insights.
- To build a predictive What If model that estimates happiness changes based on GDP variation.

Methodology:

The dataset was cleaned and transformed in Power BI, followed by the creation of dashboards and DAX (Data Analysis Expressions) based calculations. Interactive visualizations including scatter plots, bar charts, KPI indicators, and What If analysis sliders were used to explore correlations and regional differences.

Key Findings:

- Strong correlation was observed between GDP and Happiness (0.99) and Trust and Happiness (0.95).
- Nations such as Switzerland, Iceland, and Denmark ranked highest in happiness, supported by strong social systems.
- Countries with lower GDP and weak governance recorded lower happiness scores.
- Health, Trust, and Generosity metrics showed significant contribution to higher happiness performance.

Comparative Insights:

Visual comparisons between Top 10 and Bottom 10 countries highlight the role of economic stability and public trust in determining life satisfaction. Regions such as North America, Western Europe, and Australia performed notably higher compared to Sub Saharan Africa and conflict ridden regions.

Predictive Analysis:

A What If simulation model was created to analyze how changes in GDP impact predicted happiness scores. Results indicated that increasing GDP leads to a rise in happiness values, helping policymakers understand potential outcomes of economic reforms.

Recommendations:

- Improving economic policies can increase happiness levels in developing regions.
- Enhancing public trust and reducing corruption may significantly boost national well being.
- Investment in healthcare and social support systems should be prioritized for longterm happiness improvement.

Conclusion:

This Power BI dashboard successfully converts raw data into actionable insights, enabling data driven understanding of global happiness distribution. The project demonstrates competency in data



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visualization, analytical reasoning, and BI-driven reporting, making it valuable for research, policy planning, and academic learning.

Introduction

Background and Context:

The World Happiness Report is an annual publication that ranks countries based on citizens' well being and quality of life. The report evaluates multiple contributing factors such as GDP per capita, social support, life expectancy, freedom, trust, and generosity. With the increasing importance of data driven decision making, visual analytics tools like Power BI enable deeper insights into global happiness trends. This project utilizes the World Happiness dataset to transform raw numerical values into meaningful visual representations that help analyze how different socio economic indicators influence happiness levels across nations.

Problem Statement / Goals of the Project:

Although the World Happiness Report provides valuable information, interpreting large volumes of data in tabular form becomes challenging without proper visualization. Stakeholders and researchers require an analytical dashboard that is intuitive, interactive, and capable of deriving insights quickly. The main goal of this project is to create a Power BI dashboard that visually represents happiness scores across countries, identifies top and bottom regions, and analyzes correlation between key indicators such as GDP and trust with overall happiness. Additionally, the project aims to support decision making by revealing factors that contribute to national well being.

Scope and Limitations:

The project focuses on visualization and analytical interpretation of the World Happiness dataset using Power BI. It covers data import, cleaning, transformation, DAX-based calculations, and dashboard development. The scope includes comparative analysis between countries, happiness rankings, and correlation evaluations. However, the dataset is static and historical in nature; therefore, real time prediction or live data streaming is beyond the current scope. The analysis is dependent on the features available in the dataset, and external social, cultural, or political factors were not included.

Innovation Component:

The innovative aspect of this project lies in integrating dynamic data visualizations and a What If analysis model to forecast happiness variations based on GDP changes. Unlike traditional reports, the Power BI dashboard allows users to interact with the data through filters, slicers, and correlation graphs, offering a more explorative and user friendly experience. The predictive slider feature enhances decision support capability by simulating how economic changes might influence happiness outcomes, contributing added value beyond static reporting.



Project Objectives

Project Objectives:

The primary objective of this project is to analyze the World Happiness Report data using Power BI and generate meaningful insights through visual representation. The project aims to transform raw data into interactive dashboards that help understand how different socio economic factors influence global happiness levels. By building dynamic visualizations and analytical models, the study seeks to assist researchers, students, and decision makers in interpreting global well being patterns effectively.

Objectives and Goals of the Project:

1. To collect, clean, and preprocess the World Happiness dataset for analytical use.
2. To develop an interactive Power BI dashboard for visualizing happiness scores across countries.
3. To analyze key indicators such as GDP, Social Support, Trust, Health, and Freedom.
4. To compare top performing and low performing countries using visual comparisons.
5. To determine correlation relationships between economic growth, trust, and overall happiness score.
6. To create a predictive What If model to estimate happiness changes based on GDP variation.
7. To support data-driven understanding of global happiness trends through visualization.

Expected Outcomes and Deliverables:

1. A structured and cleaned dataset suitable for visualization in Power BI.
2. A fully developed interactive dashboard presenting global happiness insights.
3. Comparative charts showcasing top 10 and bottom 10 happiest countries.
4. KPI indicators and correlation analysis results between critical happiness factors.
5. A What-If Analysis module demonstrating how GDP changes influence predicted happiness.
6. A comprehensive analytical report documenting the project, findings, and conclusions.



Methodology and Results

Methods and Technology Used:

This project follows a structured analytical methodology starting from data acquisition to visualization and result interpretation. The dataset was imported into Power BI and processed using data cleaning techniques to remove missing values and standardize columns. Data Analysis Expressions (DAX) were used to create calculated measures such as average happiness score, correlation values, and prediction formulas. Visual elements including maps, bar charts, slicers, KPIs, and comparison graphs were implemented to interpret global happiness trends. The system further integrates a What If Analysis model to forecast variations in happiness scores based on GDP adjustments, enhancing decision-making capability.

Tools/Software Used:

- **Power BI (Primary Tool):** Used for data cleaning, modeling, DAX calculations, dashboard design, and prediction-based simulations.
- **Power Query:** Used for data transformation and preprocessing.
- **Microsoft Excel:** For initial inspection of dataset structure.

Data Collection Approach:

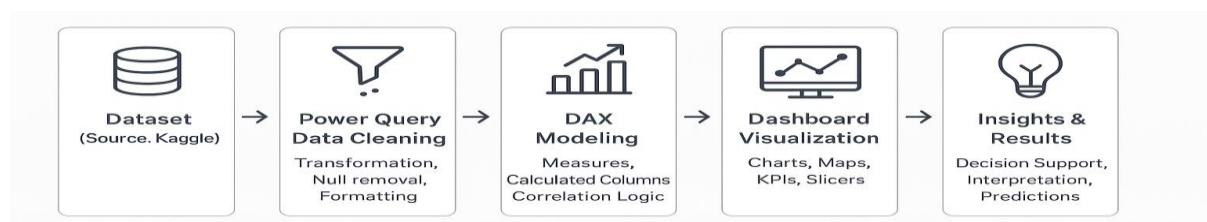
The dataset used in this project was obtained from Kaggle, a publicly available repository for research and analytics datasets. It contains World Happiness Report scores from multiple countries along with indicators such as GDP per capita, trust, generosity, life expectancy, and social support.

Source Link: **Kaggle Dataset**

<https://www.kaggle.com/datasets/elarsaks/world-happiness-report-20152019-processed>

Project Architecture Overview:

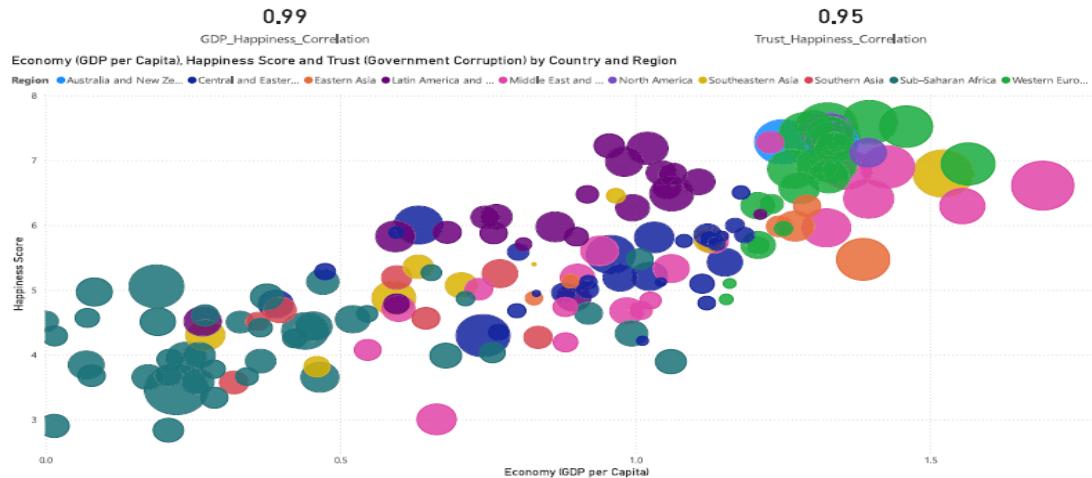
The system architecture for this project includes four major stages



- **Data Acquisition:** Dataset imported from Kaggle.
- **Data Preprocessing:** Cleaning performed using Power Query to handle missing values, rename fields, and apply transformations.
- **Data Modeling:** Measures created using DAX for correlation calculations, happiness prediction, ranking logic, and KPI metrics.
- **Dashboard Visualization:** Interactive screens built using charts, maps, slicers, KPI cards, and What-If analysis sliders for user exploration.

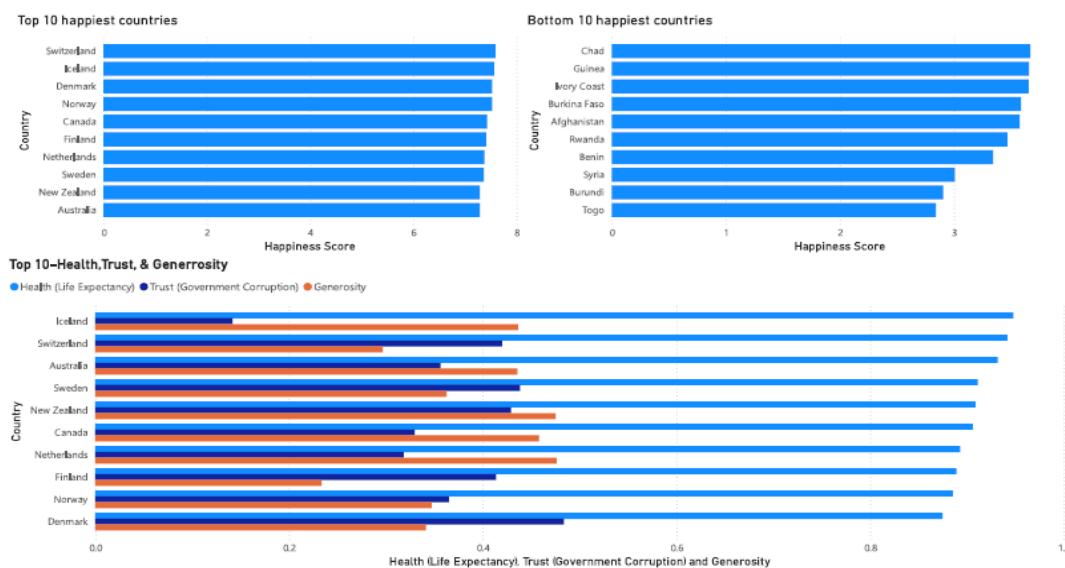


Results Explanation:



Correlation Analysis Visualization: This chart shows the relationship between GDP, Trust, and Happiness scores across countries. A strong positive correlation is observed between GDP Happiness (0.99) and Trust Happiness (0.95), indicating that nations with better economies and

trust levels experience higher happiness.

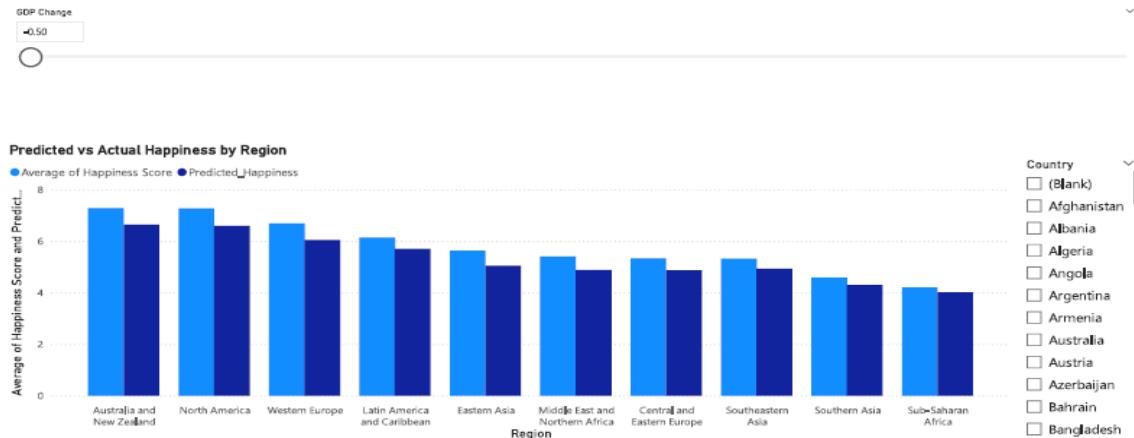


Top vs Bottom Countries Comparison: Illustrates Top 10 and Bottom 10 countries based on Happiness Score. The results indicate that economically stable regions like Switzerland, Iceland, and Denmark appear at the top, whereas countries with low GDP and unstable governance fall in the lower rankings.



What-if

The What-if analysis demonstrates how fluctuations in GDP impact happiness levels. As GDP increases, predicted happiness rises across regions, confirming economic strength as a primary driver of well-being. This dynamic model enables policymakers to estimate outcomes of economic improvements or declines on national happiness.



What If Prediction Model : The What If slider simulates a change in GDP and dynamically updates predicted happiness values, enabling policymakers to analyze the impact of economic variations on happiness.

Project Source Code and Repository:

The complete project source files, Power BI dashboard, and dataset reference are uploaded to GitHub for accessibility and future enhancement. The repository includes the Power BI project file, visual reports, documentation, and supporting resources used during development. This ensures transparency, version control, and allows others to review, clone, or extend the project for academic or research purposes.

GitHub Repository Link:

<https://github.com/Rahul158-jpg/World-happiness-Report>



Learning and Reflection

During this project, I gained substantial knowledge and hands on experience in data analytics and visualization using Power BI. The project enhanced my understanding of data cleaning, modeling techniques, DAX expressions, and dashboard creation. I learned how to extract insights from large datasets, build interactive visual reports, and apply What-If analysis for predictive interpretation. Additionally, I improved my skills in structuring results, analytical thinking, and presenting information visually for better decision support.

From a project management perspective, I learned how to plan tasks in stages such as dataset collection, preprocessing, visualization, and documentation. Time management and problem-solving skills were strengthened while handling data transformation challenges and designing visual layouts. This experience also improved my confidence in presenting analytical findings and converting raw data into meaningful insights.

Overall, the project helped me understand how business intelligence tools can support research and real-world decision-making. Working on this report allowed me to think critically, explore correlations between multiple factors, and communicate outcomes in a structured manner. The process was highly valuable, and it motivated me to explore more advanced features in Power BI and analytics tools in the future.



Conclusion and Future Scope

Conclusion

The World Happiness Report Power BI project successfully met its objectives by transforming raw global happiness data into an interactive and meaningful dashboard. The project analyzed key factors such as GDP, trust, health, generosity, and social support to understand their influence on happiness levels across countries. Visual comparisons were created to highlight the top and bottom performing nations, and correlation analysis clearly demonstrated that economic strength and governance trust strongly contribute to happiness outcomes. The What If simulation further added value by predicting how changes in GDP could impact future happiness scores. Overall, the project enhanced understanding of global well being patterns and showcased the potential of business intelligence tools for data-driven insight generation.

Future Scope

The project can be further enhanced by incorporating real-time data updates and including additional social indicators like education, employment, and mental well-being. Machine learning models can be integrated for more accurate happiness prediction and forecasting across regions. The dashboard can be expanded into a web-based interactive platform for broader public access. Additional comparative filters such as cultural diversity, climate conditions, and government policy indexes can deepen insight quality. These improvements would elevate the dashboard from an analytical tool to a comprehensive decision-support system for researchers, policymakers, and data analysts.