

CSE 564: Project Proposal

World Happiness Analysis

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Group No: 40

Background:

Being happy is vital in achieving one's goals and also for a healthy lifestyle. Happiness creates a wave of liveliness and a happy society leads to a prosperous country. Many leaders consider happiness as an important metric of public policies and law and order in the region. The World Happiness Report is a landmark survey of the state of global happiness. Leading experts across fields – economics, psychology, survey analysis, national statistics, health, public policy and more – describe how measurements of well-being can be used effectively to assess the progress of nations.

We find this topic very interesting and want to take it up as our project to find some interesting insights from the dataset. The product of this project is a visualization dashboard tool for the better understanding of the World Happiness Dataset which will supplement people with the knowledge of factors and implications governing the World Happiness Index. We will look into what all factors affect happiness and how a country can learn from others to improve the happiness index for their citizens.

For this project we are choosing the World Happiness Index [dataset](#) by Sustainable Development Solutions Network(SDN) which is a part of the United Nations.

Implications/Applications:

Happiness is increasingly considered an important and useful factor to guide public policy and measure its effectiveness. More and more, local and national governments are using the data on happiness to shape policies that enhance the lives of their citizens. To shape policy with data about happiness and well-being, a cost-benefit analysis can be done ranking all potential policies according to the amount of happiness they might produce per dollar spent.

Knowing about the factors contributing towards the happiness measure, can provide individuals with useful and important information which will help them shape their mental outlook towards the country and fellow individuals. They can take proactive measures to work towards their own betterment and their nation's.

For NGOs, and various philanthropic organizations working in different countries and various fields, the understanding of the World Happiness Index data will provide them with essential data to identify and work for the mitigation of hardship and problems in various countries and cities identified through this report's analysis.

Problem:

The dataset incorporates analysis by experts in economics, neuroscience and statistics, and shows how measurements of well-being can be used to evaluate a country's progress. General assessments of individuals' whole lives as well as data about their emotional experiences were collected and considered.

The happiness ranking of countries was determined by asking individuals to evaluate their lives as a whole, according to six variables. Respondents scored them on a scale of 0 to 10.

Column name	Description
Country	Name of the country
Region	Region the country belongs to
Happiness Rank	Rank of the country based on the Happiness Score.
Happiness Score	On a scale of 0-10
GDP	GDP contribution towards happiness
Family	Family contribution towards happiness
Health (Life Expectancy)	Life expectancy contribution towards happiness
Trust (Government Corruption)	How corruption affects happiness
Generosity	Generosity among people that contributes towards happiness

We hope to answer/achieve following through our dashboard:

1. We expect to analyse the relationship between various factors that contribute towards the happiness of people.
2. To identify what least happy countries can improve or what they can learn from the happiest countries in order to provide a better life to their citizens.
3. To compare various factors of the world's most and least happiest countries and draw inferences from them.
4. Analyse the data for different countries over a span of 5 years and see the trends in the factors that contribute towards their happiness index.
5. We wish to incorporate external fields like unemployment data, crime rate, weather data, terrorism data, etc. which we think might affect happiness index and see if there is any correlation between these factors and happiness index.

Approach:

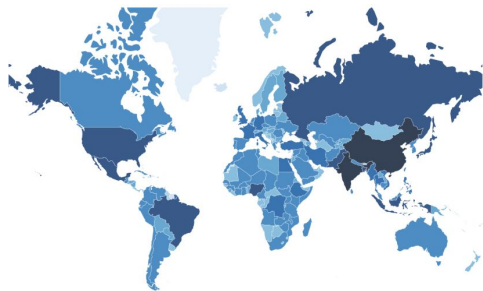
Data Preparation:

- Combine the dataset for a span of five years for different countries.
- Impute the missing values in the database to handle null fields if any.
- Incorporate external data(if found correlation) into our data.

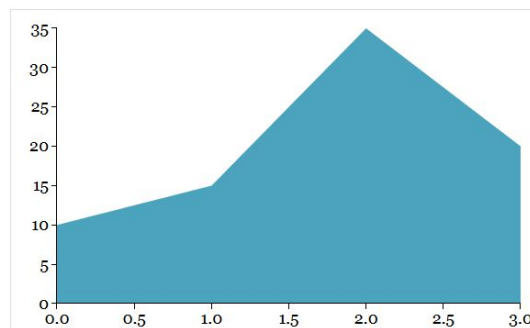
Visualizations:

We will try visualizing our dataset with standard and non-standard graphs like bar graphs, scatterplots and PCA plots in order to understand our dataset better. We will then try to gain interesting insights from the database by using a similar dashboard as shown at the end of this report. We will apply concepts and techniques learnt in this course to make our dashboard interactive and visually aesthetic.

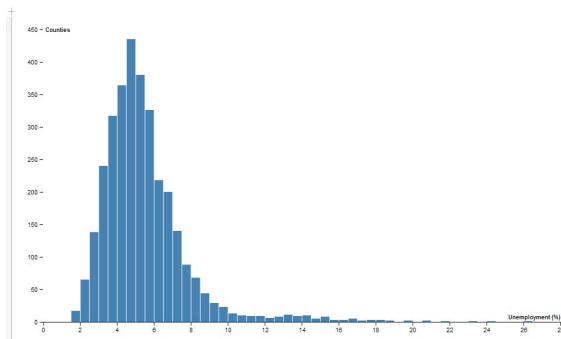
Dashboard prototype: (May change during implementation phase)



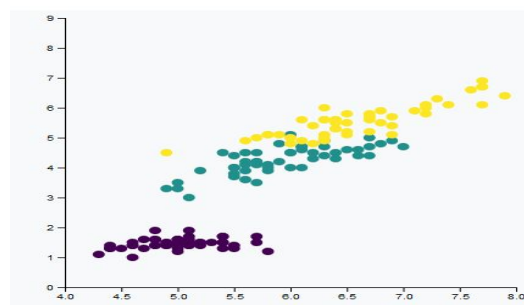
World happiness score plot



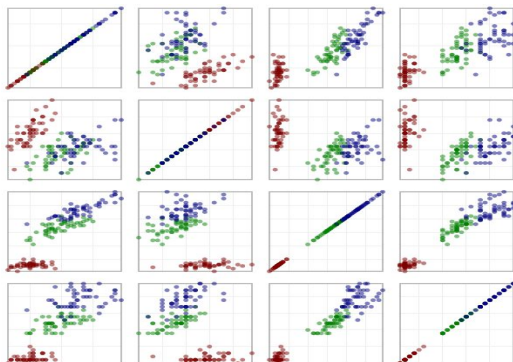
Area graph: Happiness score



GDP of the countries



Correlation plot happiness vs life expectancy



Scatterplot matrix of multiple attributes