What Matters to Happiness

**Table of Contents**

[**Abstract** 3](#_Toc531857433)

[**Introduction** 4](#_Toc531857434)

[**Setting up an Analytical Model** 4](#_Toc531857435)

[A. Dependent Variable and Independent Variable 5](#_Toc531857436)

[B. Hypotheses 5](#_Toc531857437)

[C. Data Cleaning 5](#_Toc531857438)

[D. Selected Model 5](#_Toc531857439)

[**Current Status of the Challenge** 8](#_Toc531857440)

[**Conclusion and** **Suggestion** 8](#_Toc531857441)

[**Reference** 9](#_Toc531857442)

[**Appendix I: Data Dictionary** 10](#_Toc531857443)

# **Abstract**

Happiness is progressively being cited as a significant economic indicator in the news nowadays. Every country is aiming at improving their life quality and life satisfaction. Along with the raising awareness to life quality and life satisfaction, people pay great attention to the factor that impacts their happiness. Therefore, researchers began to find a way to compare each country’s happiness. The first step is to quantify people’s happiness. However, researchers are still studying what contributes to quantifying happiness. No one has an absolute answer for what is the most important factor in happiness yet. This report is going to give an overall understanding of what matters to happiness from a macro perspective. The objective is to solve the relationship between various factors and the happiness. It is interesting to discover why these factors are critical and how these factors might change people’s happiness as time goes on. The challenge of the research is to determine which factor will have real impact on happiness. Looking at some economic data as a starting point, it is possible to conclude that happiness would be affected by the government, the economic status and the demographical change.

# **Introduction**

What is happiness? Everyone might have different answers.

Aristotle said happiness is the meaning and the purpose of life, the whole aim, and end of human existence. As the change of times, people start looking deeper into happiness. Happiness is beneficial to both the human’s physical and mental health. There are researches that found happiness protects human’s heart, strengthens one’s immune system, lowers one’s blood pressure and eventually combats stress. In addition, the happiness cascade effect stated that “the clusters of happiness result from the spread of happiness and not just a tendency for people to associate with similar individuals.” If one is happy, his or her mood influences friends and family to be happier. Under those circumstances, happiness is more important than people might realize.

Although happiness is important, there is no simple way to achieve happiness. It is not just feeling good, being rich, or being success. It is a combination of contentment from what you experience. Abraham Maslow, one of the earliest psychologists with a focus on happiness, announced there was a five-level hierarchy of needs to achieve one’s happiness. Maslow described the path start from physiological need, safety, love, esteem, and end with self-actualization. He noted that happy people are not self-centered but rather problem-centered. There was a question that how to measure happiness from a quantitative perspective.

However, the human brain is a complex system. Maslow’s hierarchy might be outdated since the theory was developed in 1943. Therefore, it is necessary to re-examine what is happiness to people in the current era. The purpose of this research is to discover what can be used to predict happiness and what would be the best model for predicting happiness scores. After reading this project, people will get an overall understanding of what impact happiness.

# **Setting up an Analytical Model**

According to the textbook, supervised learnings are “fitting a model that relates the response to the predictors, with the aim of accurately predicting the response for future observations (prediction) or better understanding the relationship between the response and the predictors (inference). (James, Witten, Hastie, & Tibshirani, 2017, p. 26).” The goal of this report is to determine factors that can be used to predict happiness. Therefore, this report will focus on building a model under supervised learning.

1. Data Source

This project is based on the survey from the Gallup World Poll and the World Bank. From 2012 to 2017, Gallup World Poll collected data and then the World Bank used it to conduct reports of happiness ranking. This project will have 157 observations, which represents 157 countries focus on the year of 2017.

1. Dependent Variable and Independent Variable
2. Hypotheses

Below is the hypothesis for each independent variable. This research assumes that each variable is significant.

*Hypothesis 1: If the GDP of a country is higher, the happiness score will be higher*

*Hypothesis 2: If the social support of a country is stronger, the happiness score will be higher*

*Hypothesis 3: If the life span of a country is longer, the happiness score will be higher*

*Hypothesis 4: Freedom to make choice is a significant variable for predicting Happiness Scores.*

*Hypothesis 5: Generosity is a significant variable for predicting Happiness Scores.*

*Hypothesis 6: Perception of corruption is a significant variable for predicting Happiness Scores.*

*Hypothesis 7: Confidence in national government is significant in predicting Happiness Scores.*

*Hypothesis 8: Democratic quality is a significant variable for predicting Happiness Scores.*

*Hypothesis 9: Foreign direct investment is a significant variable for predicting Happiness Scores.*

*Hypothesis 10: Birth rate is a significant variable for predicting Happiness Scores.*

*Hypothesis 11: Population density is a significant variable for predicting Happiness Scores.*

1. Data Cleaning
2. Selected Model

# **Current Status of the Challenge**

# **Conclusion and** **Suggestion**

# **Reference**

James, G., Witten, D., Hastie, T., & Tibshirani, R. (2017). *An introduction to statistical learning with applications in R*. New York: Springer.

# **Appendix I: Data Dictionary**

Dependent Variable: Happiness score

Happiness score or subjective well-being (variable name ladder): The survey measure of SWB is from the Dec 22, 2017 release of the Gallup World Poll (GWP), which covers the years from 2005 to 2017. Unless stated otherwise, it is the national average response to the question of life evaluations. The English wording of the question is “Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?” This measure is also referred to as Cantril life ladder, or just life ladder in our analysis.

Independent Variable:

1. Log GDP per capital

in purchasing power parity (PPP) at constant 2011 international dollar prices are from the September 15. 2017 update of the World Development Indicators (WDI). A few countries are missing the GDP numbers in the WDI release but were present in earlier releases. We use the numbers from the earlier release, after adjusting their levels by a factor of 1.17 to take into account changes in the implied prices when switching from the PPP 2005 prices used in the earlier release to the PPP 2011 prices used in the latest release. The factor of 1.17 is the average ratio derived by dividing the US GDP per capita under the 2011 prices with their counterparts under the 2005 prices. The same 1.17 is used to adjust the Taiwanese numbers, which are originally PPP dollars at 2005 constant prices and are based on the Penn World Table.

1. Social support

The national average of the binary responses (either 0 or 1) to the GWP question “If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?”

1. Life Span

The time series of healthy life expectancy at birth are calculated by the authors based on data from the World Health Organization (WHO), the World Development Indicators (WDI), and statistics published in journal articles.

1. Freedom to make life choices

The national average of responses to the GWP question “Are you satisfied or dissatisfied with your freedom to choose what you do with your life?”

1. Generosity

The residual of regressing national average of response to the GWP question “Have you donated money to a charity in the past month?” on GDP per capita.

1. Perceptions of corruption

The measure is the national average of the survey responses to two questions in the GWP: “Is corruption widespread throughout the government or not” and “Is corruption widespread within businesses or not?” The overall perception is just the average of the two 0-or-1 responses. In case the perception of government corruption is missing, we use the perception of business corruption as the overall perception. The corruption perception at the national level is just the average response of the overall perception at the individual level.

1. Confidence in national government

The national average of responses to the GWP question “Are you feeling confidence in your national government?”

1. Democratic Quality

The national average of responses to the GWP question “Are you satisfied or dissatisfied with the democratic of local government?”

1. FDI

Foreign direct investment (FDI) is an investment made by a firm or individual in one country into business interests located in another country. Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets, including establishing ownership or controlling interest in a foreign company

1. Birth rate

The birth rate (technically, births/population rate) is the total number of live births per 1,000 in a population in a year.

1. Population Density

Numbers of people per per-square kilometer