

## Tableau Final Report

**Group 4:** *Ziwei Yang-* *G45808017*

*Yichen Li-* *G40291479*

*Shengqi Zhou-* *G44650601*

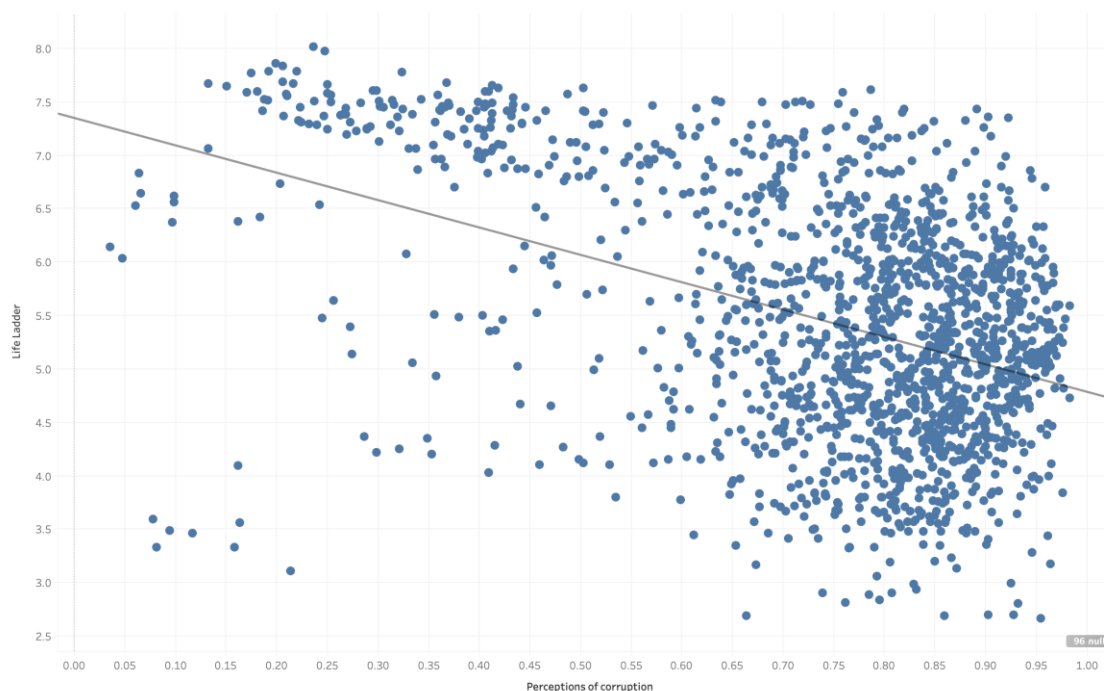
### 1. Update on Tableau training material

First, again, we find a new world happiness dataset which columns are basically same as before, but includes more data (from 2005 to 2018, the original only has 2015-2017). Since more years of data will help us to perform a more thorough analysis, we decide to update the dataset.

### 2. What we did?

After the first three report, we figured out the meaning of each factors and how they related to happiness, this time our progress are on the following part: factors linear regression model, happiness score analysis by region and country, composition variance between countries and scores change of each country. And here are some conclusions:

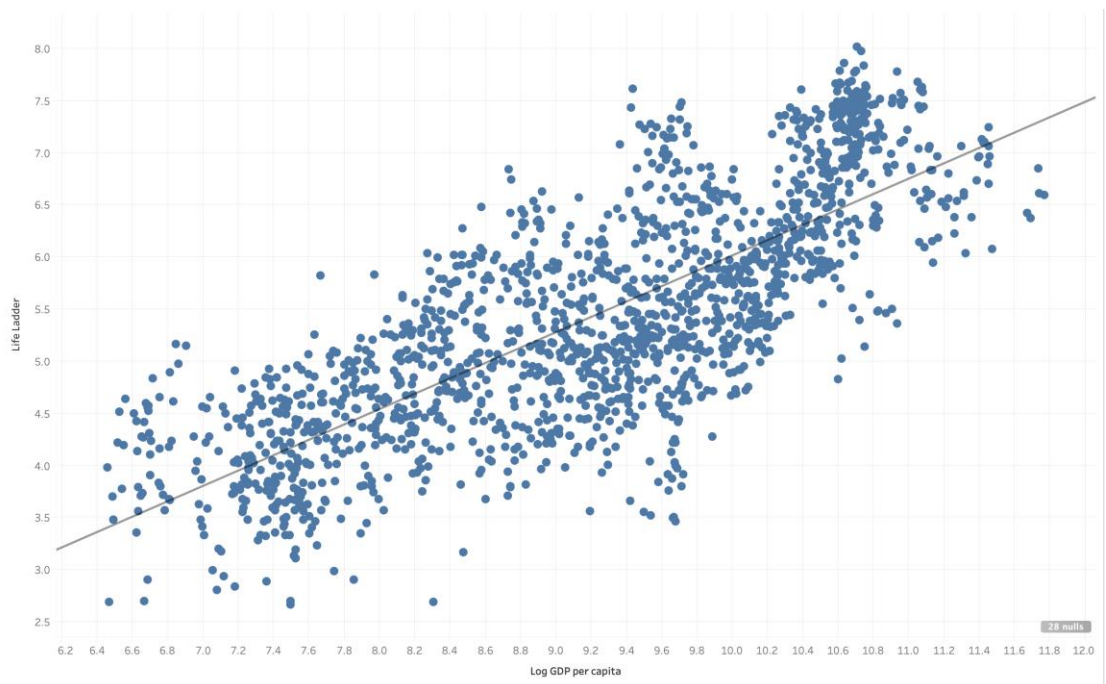
#### (1) Factors linear regression model



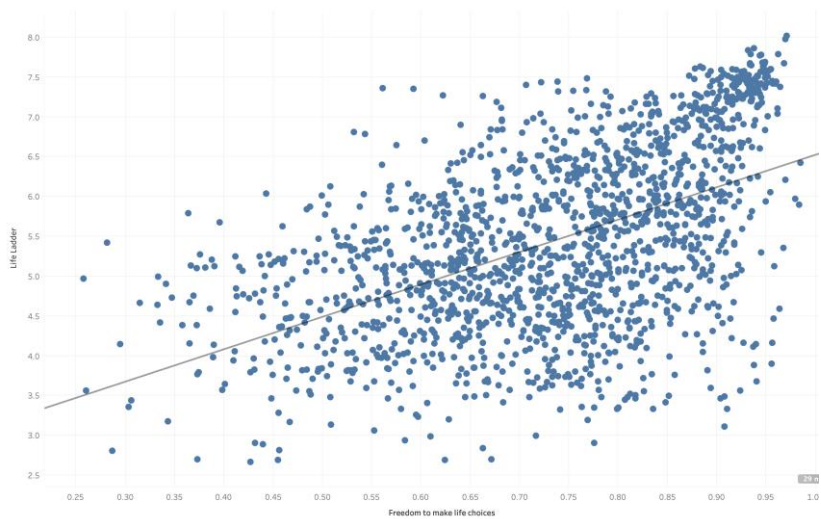
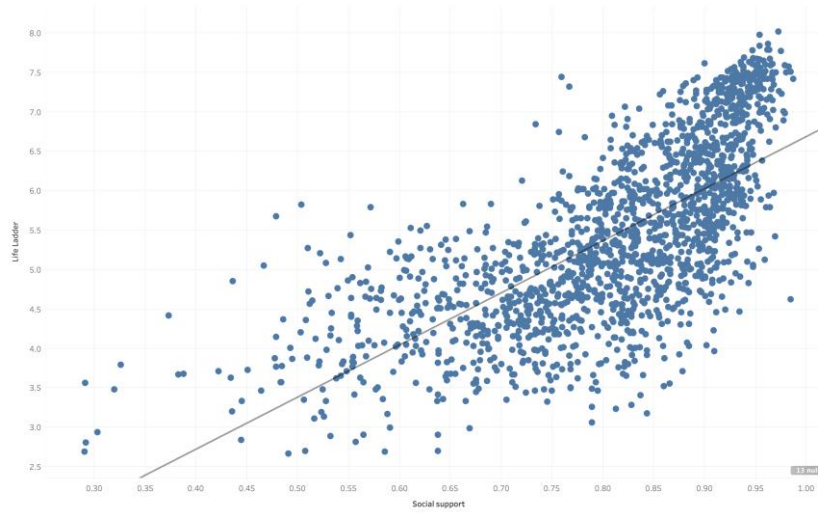
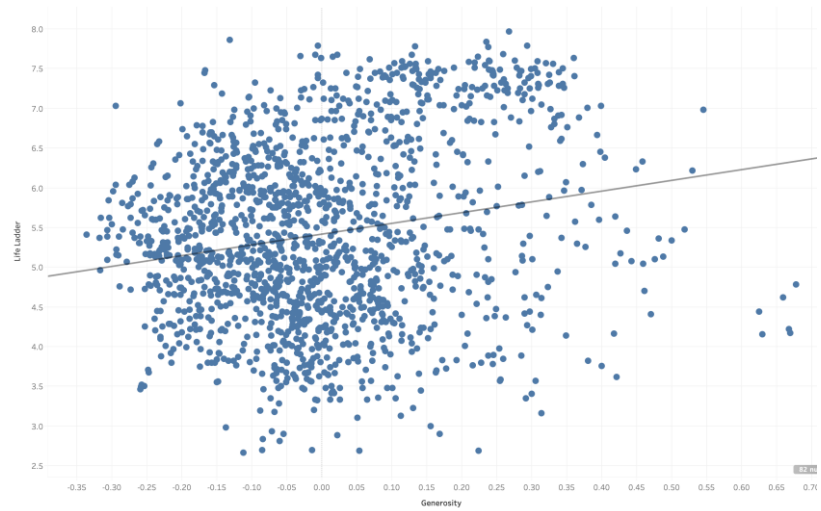
Perceptions of corruptions has a strong negative correlation with happiness score. As the value of perceptions of corruption increased, the happiness scores will go down.



There is a positive correlation between life expectancy and happiness, which increases as people's life expectancy increases

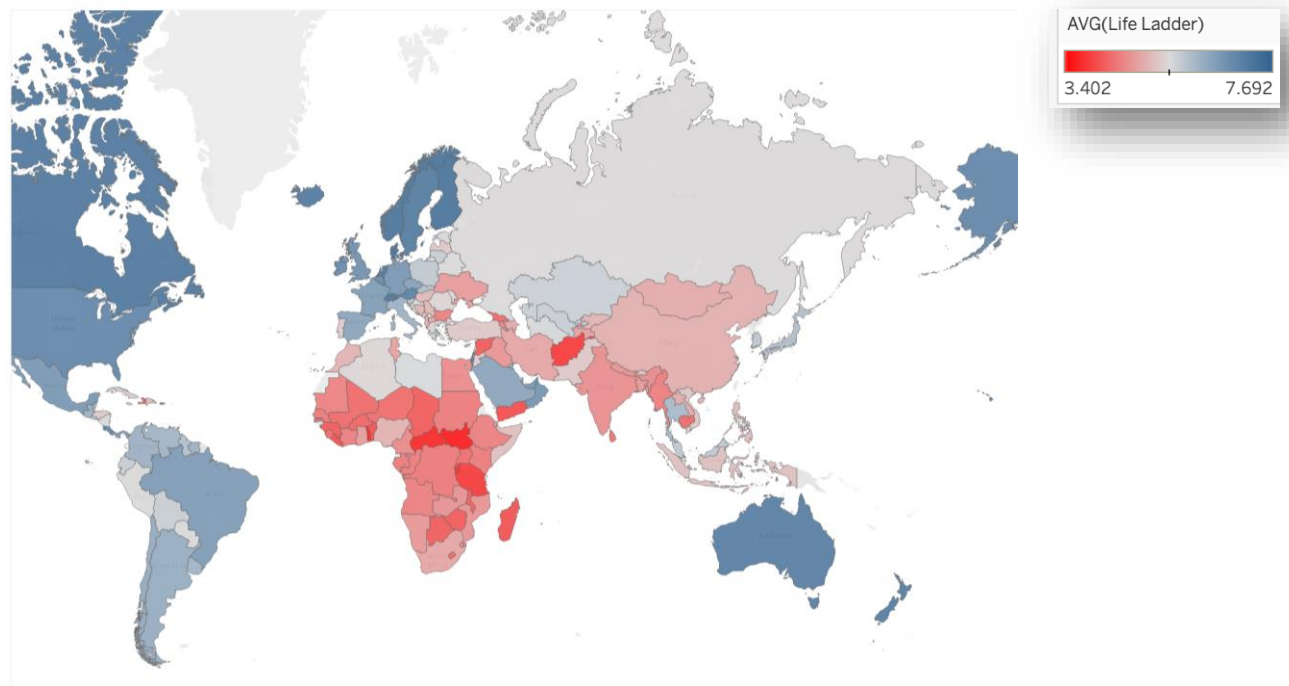


There is also a very strong positive correlation between GDP and happiness. When GDP increases, so does happiness scores.



Generosity, Social support and freedom all have strong positive correlation with happiness score. All three factors have a positive effect on people's happiness scores.

## (2) Happiness score analysis by region and country



**Figure 2.1 Average happiness scores by different regions**

As sample color suggest, the more the color of a region is close to blue, the higher average score of this region has; by contrast, when a region is more close to red, the less happiness their people will feel, so we could conclude that north America, Australia as well as New Zealand, and North Europe are the 3 most happiest regions in this world. On the contrary, Africa, middle and eastern Asia are the top 3 worst happiness regions.

Next, average happiness score in all countries from in nearly 3 years are roughly the same, we select the top 10 highest countries and top 10 lowest countries, and not surprising, the top countries, including Finland, Denmark Norway, Australia, US Canada etc. are all from the top 3 happiness regions, and the top 10 lowest countries are also from top 3 lowest regions, which suggests that happiness index area is severely differentiated

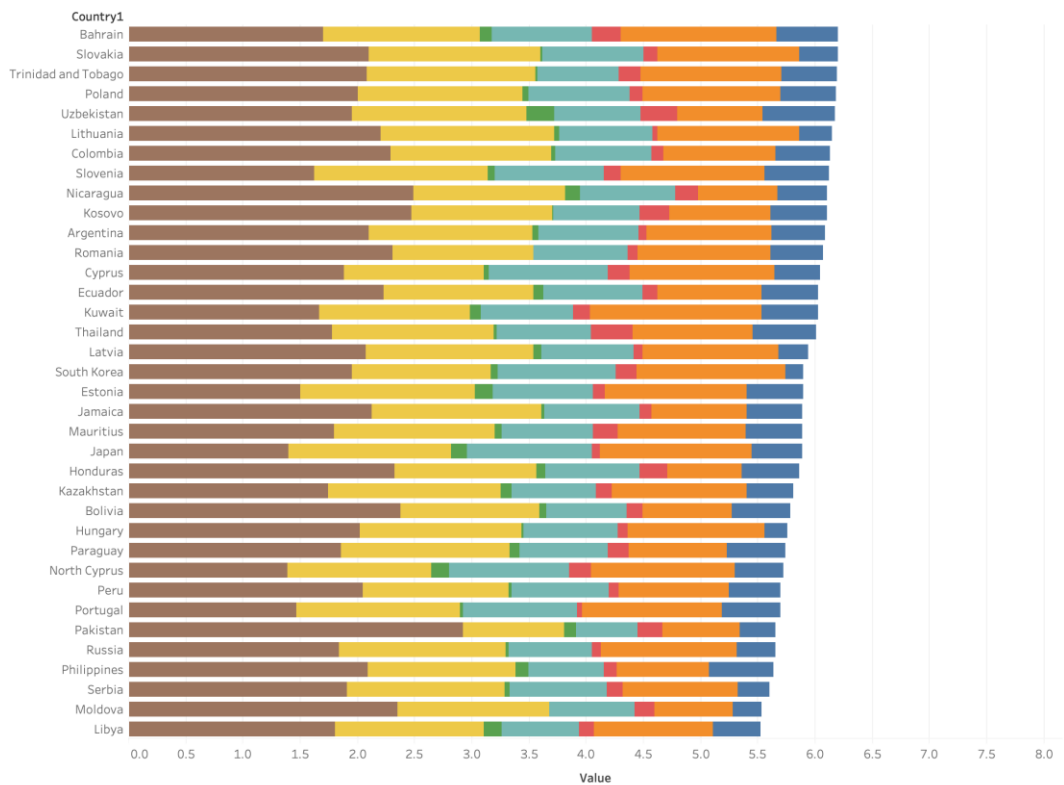


Figure 2-2

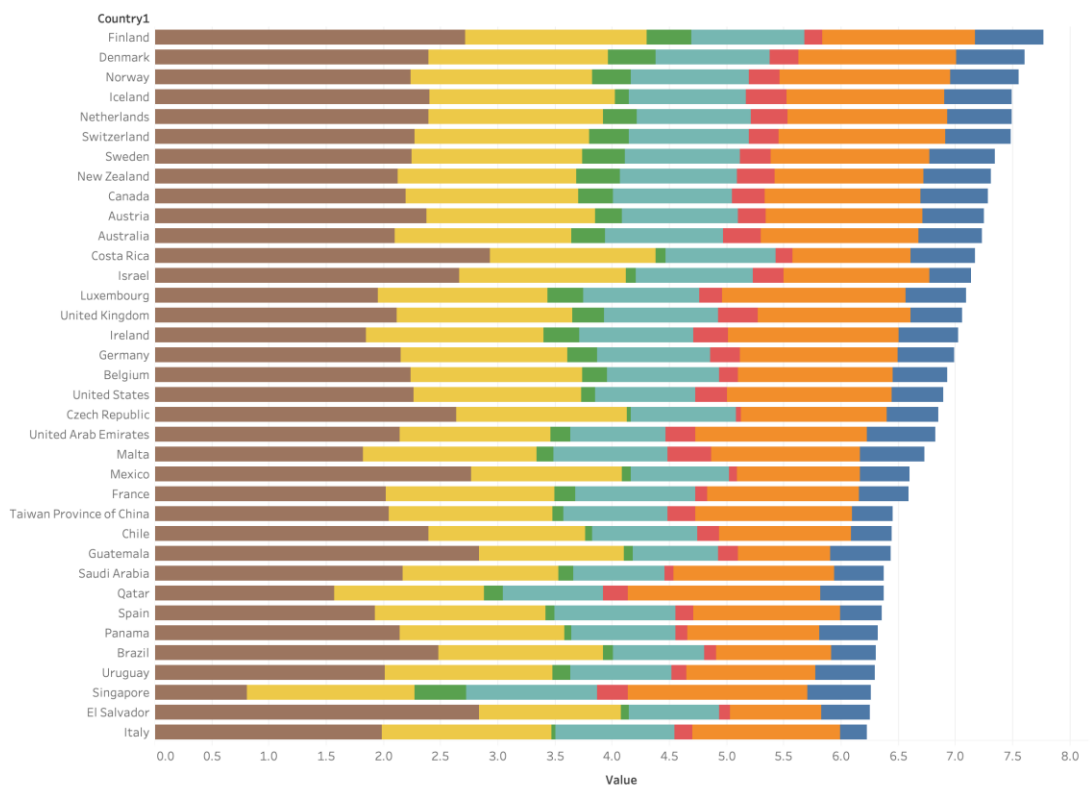


Figure 2-3

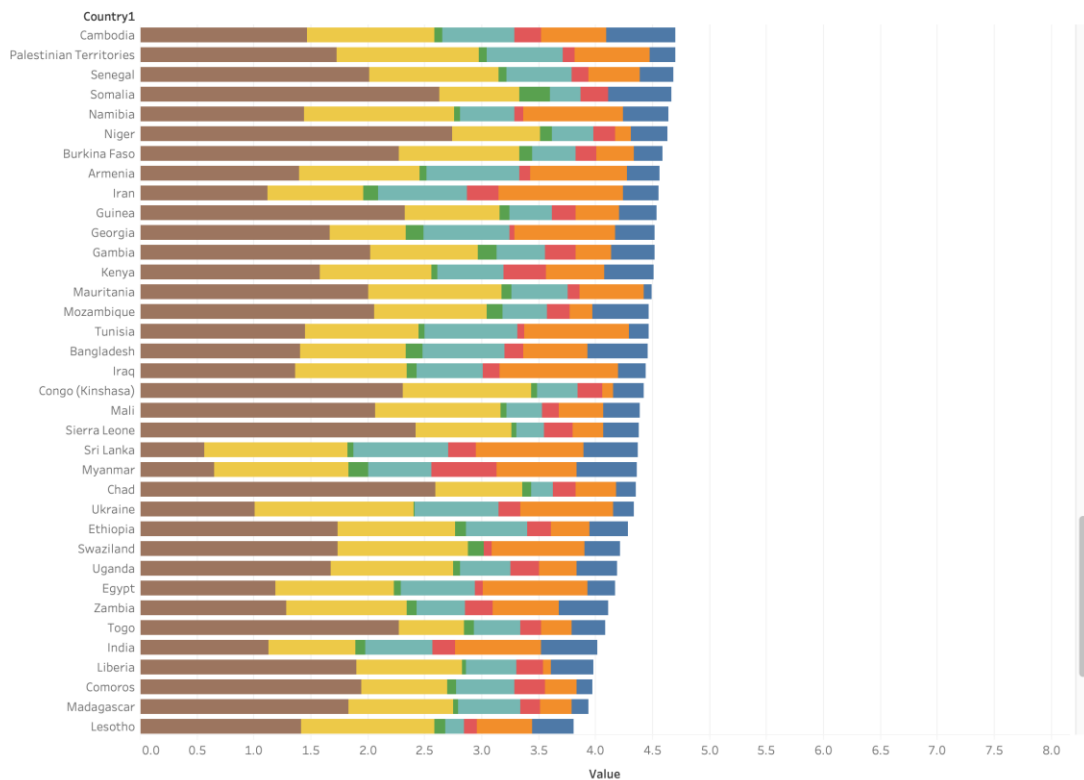


Figure 2-4

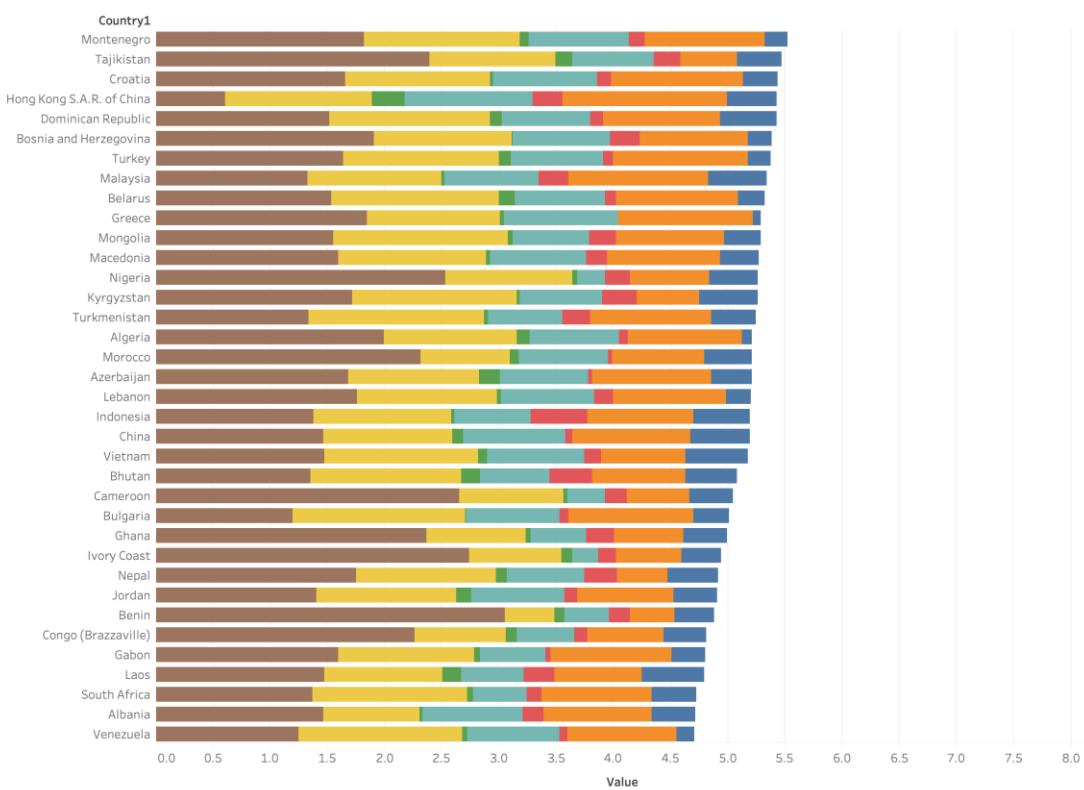
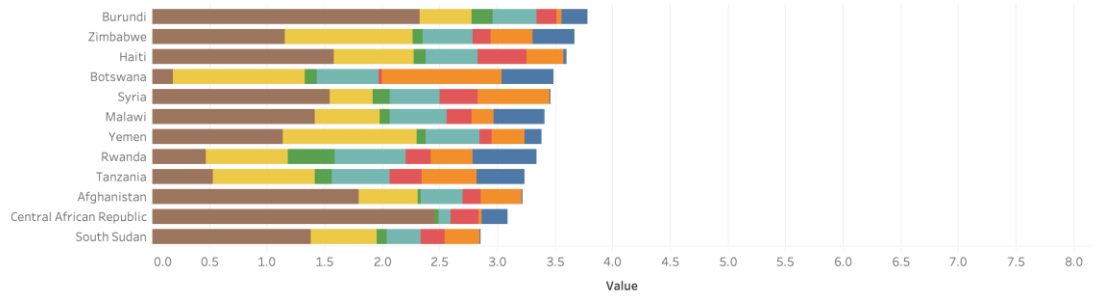
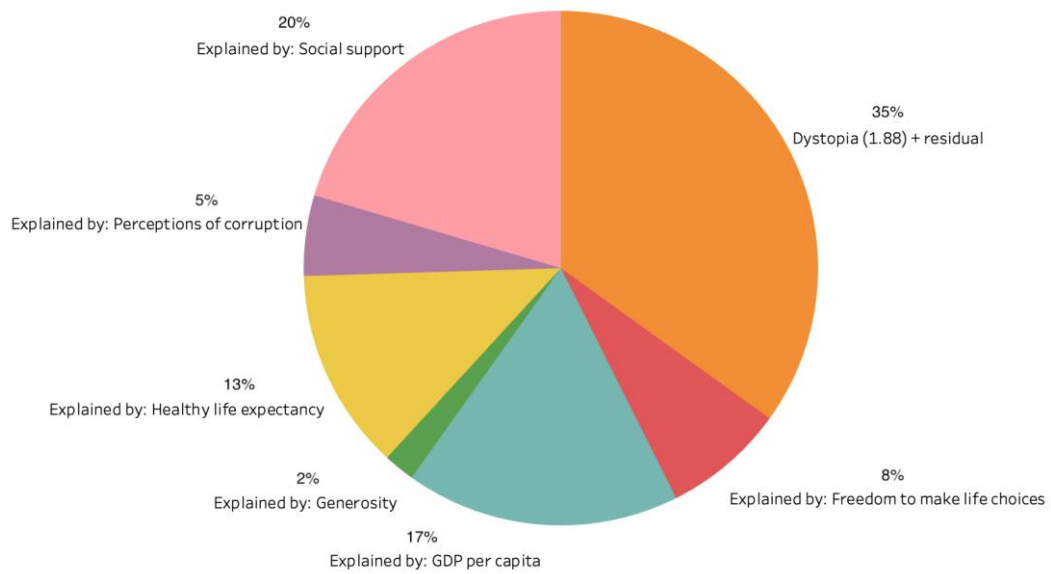


Figure 2-5

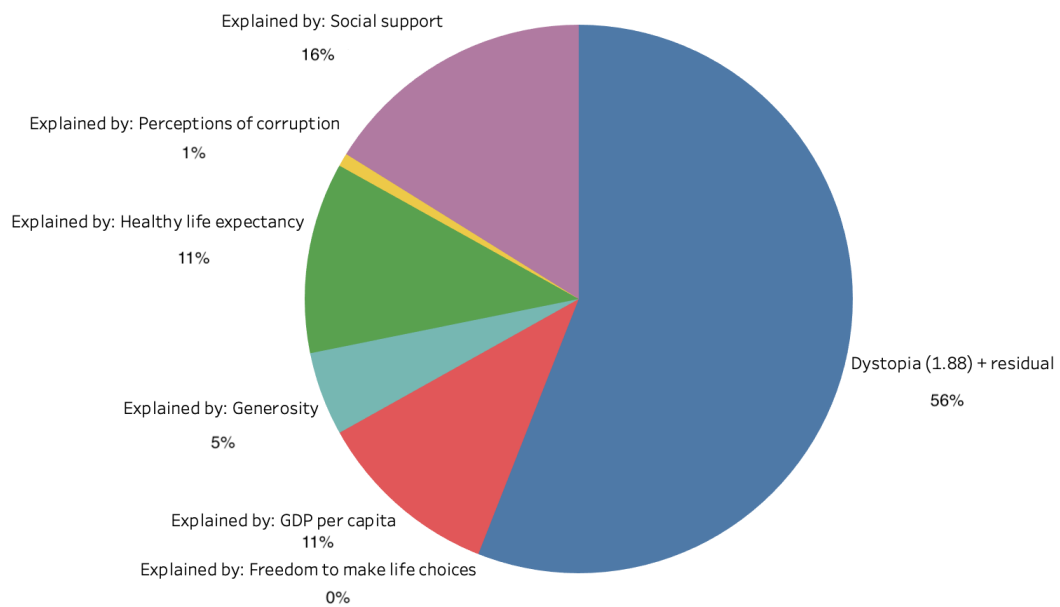


**Figure 2-6**

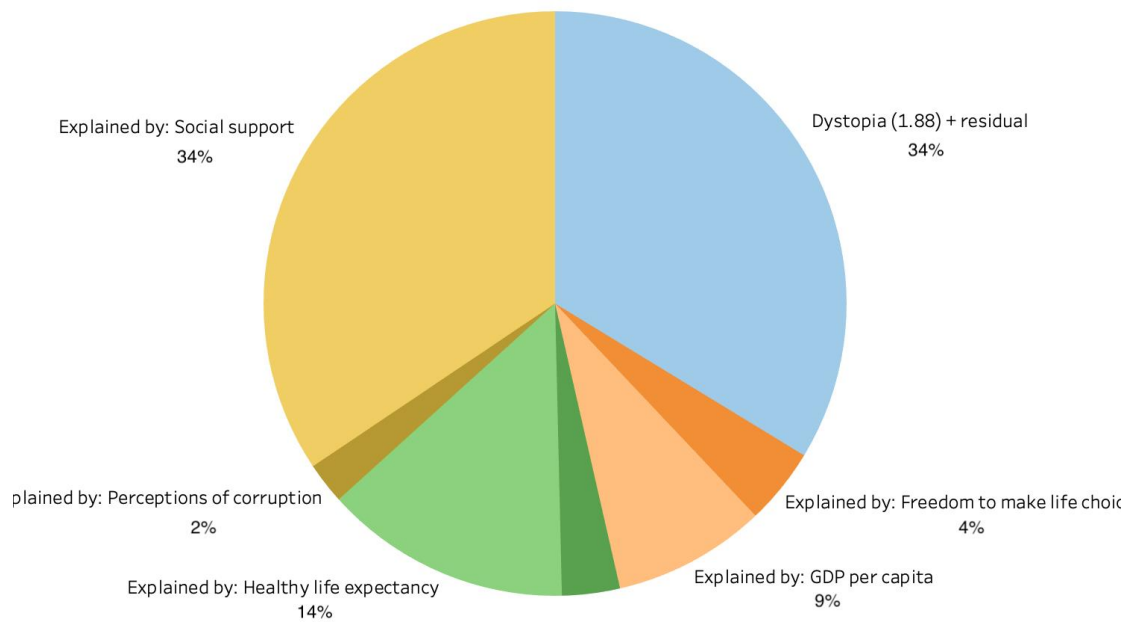
(3)Composition variance between countries



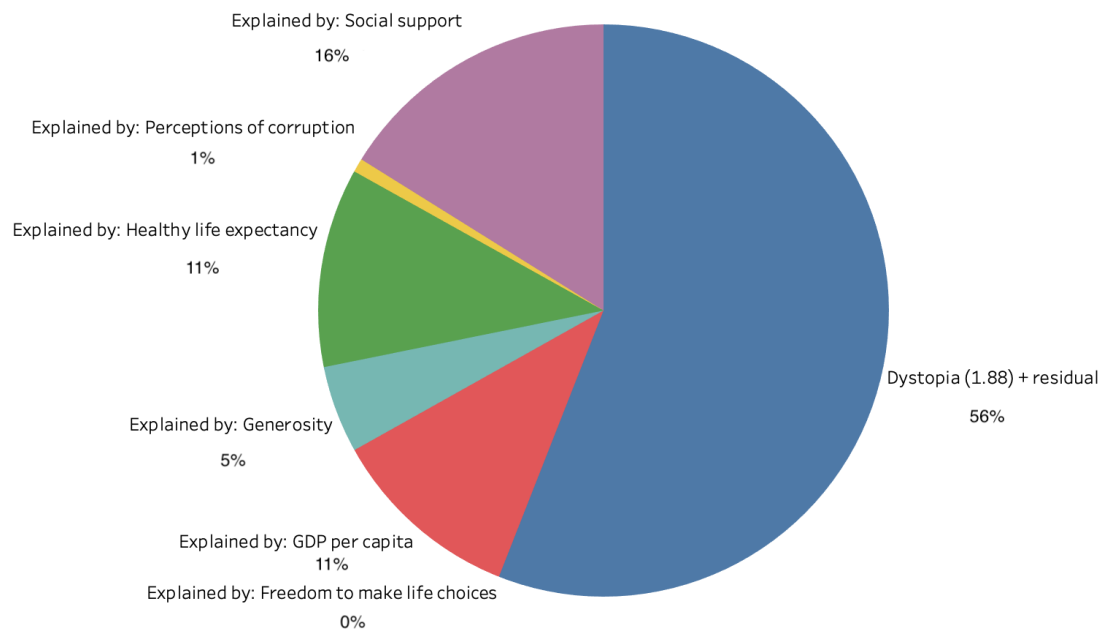
**Figure 3-1 Finland**



**Figure 3-2 Denmark**



**Figure 3-3 Yemen**



**Figure 3-4 Afghanistan**

Then, we build 4 pie chart based on the 6 indicators which contributed to the happiness scores, and we choose 4 countries (2 at top and 2 in the bottom) to see the contribution of each factors. First 2 are developed countries Finland and Denmark, Yemen and Afghanistan

From the 4 pie chart we could see that:



1. GDP part has a higher proportion in Top rank happiness score country, the percentage is nearly 2 times to the less happiness country
2. Perception of corruption also has a higher proportion in more happiness country, this might because of their good economy condition which rising more corruption.
3. People in high happiness score country think they have more freedom than in that in low. People in Afghanistan even think they didn't have freedom(value is 0).
4. When comes to social support it is clearly that all high scores countries have a constant support percentage (around 20%), but in low scores countries, social support varies greatly from country to country. (Low as 14%, high as 35%)
5. The Healthy Life Expectancy and Generosity proportions in different country are roughly the constant no matter how much score the country get.

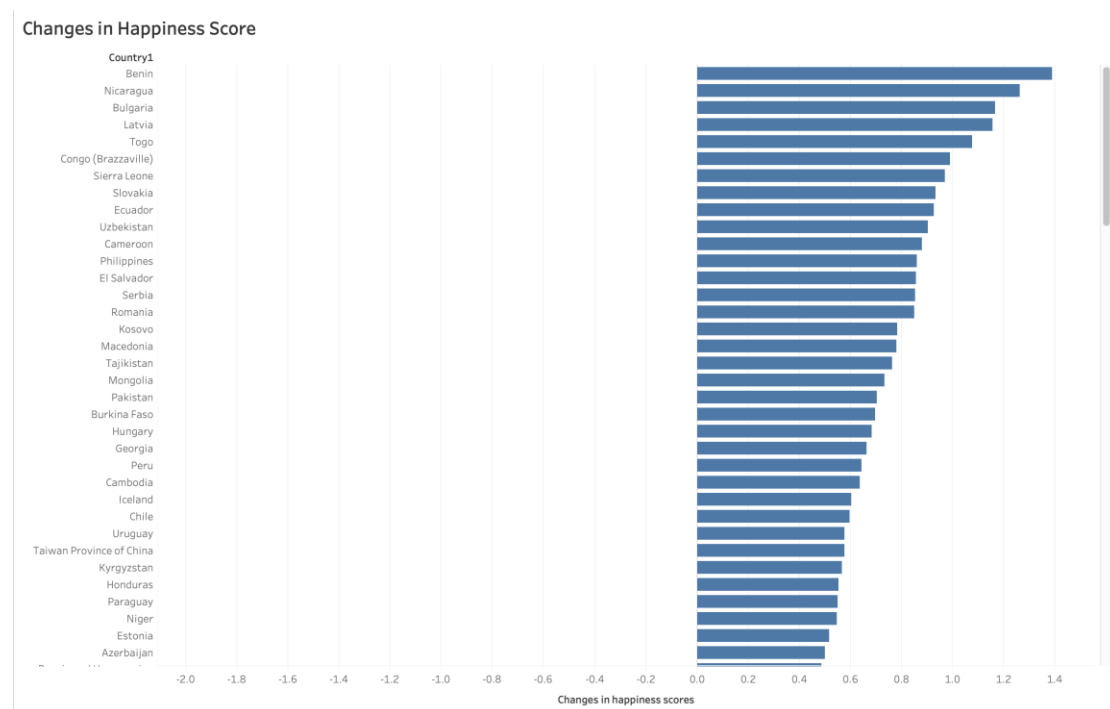
#### (4) Scores change of each country

We analyze the happiness score changes from 2016-2018 to get specific situation of each country, and here are the result of fluctuation.

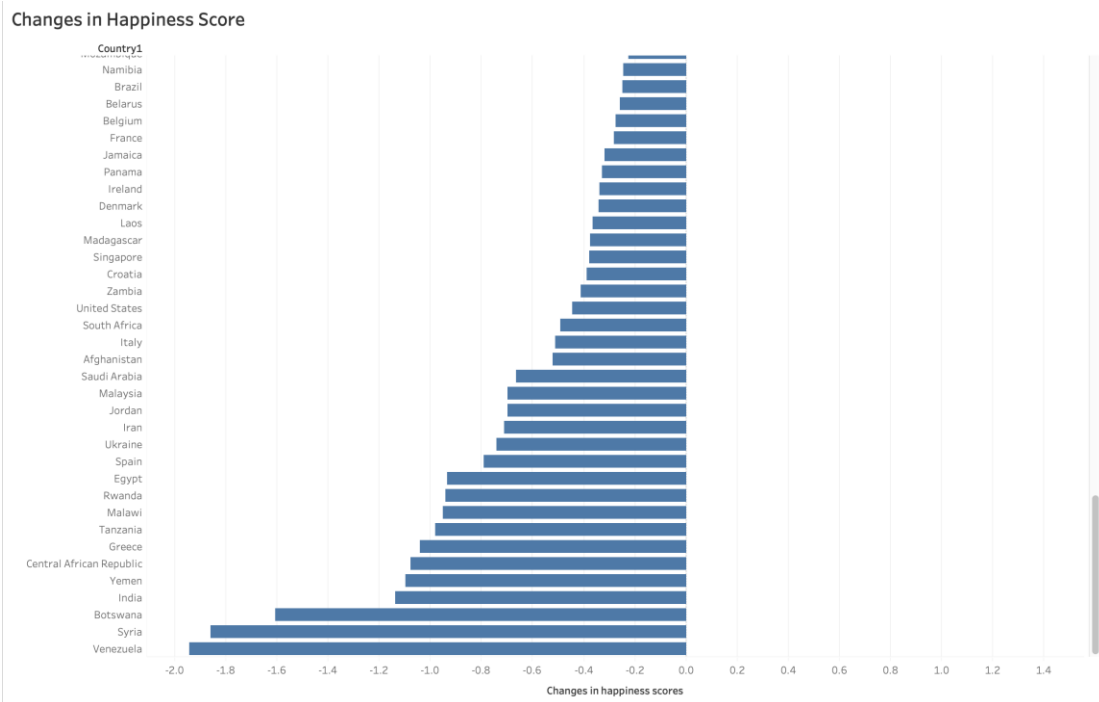
The positive changes: Berlin, Nicaragua, Bulgaria

Small changes: Switzerland, Norway, Netherlands

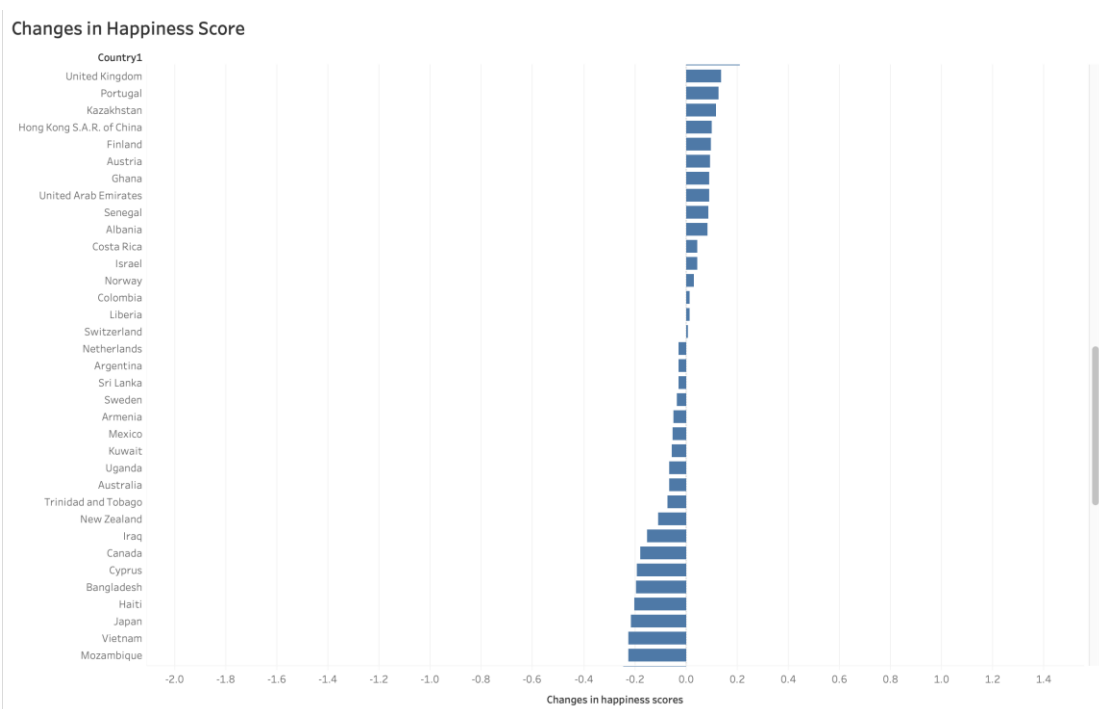
Negative changes: Venezuela, Syria, Botswana



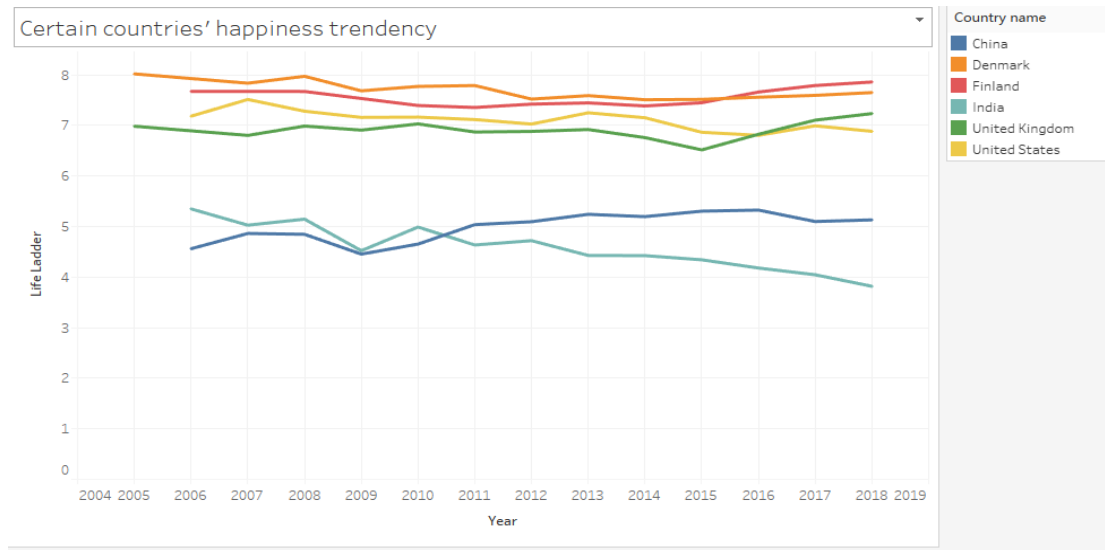
**Figure 4-1**



**Figure 4-2**



**Figure 4-3**



**Figure 4-4 Typical countries' tendency**

From the above table, we could see the tendency of different countries are roughly the same, mostly a fluctuating horizontal line.

### 3. Challenges

We didn't obtain the value of multiple regression analysis to see if there's a model that can explain the happiness score effectively. To solve this problem, we will use other tools(R, Python) to accomplish our dataset.

### 4. Suggestion

Based on our comprehensive dataset which provides us a lot of detailed information to explain complex issues, and show us the change in the long term. What's more, to help a country become happier, our group suggest that the government can give their citizens more freedom, improve social entire health care system and medical treatment, as well as increasing economy condition and focusing more on GDP.