

# **A Report on Factors Affecting Happiness**

**By  
Mahi Kushwaha**

# CONTENTS

<b>Sr. No.</b>	<b>Title</b>	<b>Page No.</b>
1	Executive Summary	2
2	Introduction	4
3	Objectives	6
4	Review of Literature	7
5	Research Methodology	10
6	Data Collection	11
7	Data Analysis	12
8	Findings	19
9	Conclusion	20
10	Annexure	21
11	References	26
12	Bibliography	28

# Executive Summary

“the experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful, and worthwhile.”

- Sonja Lyubomirsky

Happiness is the one of many emotions that humans strive, in a sense most decisions that humans are either taken to achieve happiness or made because they are happy. This emotion is very crucial to humans. American researcher, Diener factors that contribute to happiness: social relationships, temperament/adaptation, money, society and culture, and positive thinking styles.

The main objective of this project report was to find out which factor affects happiness the most and which factor doesn’t contribute to our happiness. This report aims to provide insights about the various factors that affect happiness and why some countries like Finland and Denmark are the happiest countries whereas some countries like India rank so low in the world happiness report.

The factors that were chosen in this data set were, GDP per capital, Social Support, Healthy Life Expectancy, Freedom to make choices, Generosity and Perception of corruption. The major conclusion to this study was that the GDP per capital and Social Support are the two factor which affect the happiness score significantly. Generosity is a factor which affects happiness the least, almost negligible affect is seen. The insights proved that the higher is the GDP per capita and Social Support of the country is, higher is the happiness index. Besides, GDP per capita and Social Support, Healthy Life Expectation also plays a significant role in affecting the happiness score. Correlation coefficient between factors and happiness score, keeps on changing every year as the global situation change constantly but the bigger picture remains the same with GDP per capita being the most affecting factor to each country, closely followed by Social Support.

However, since the data used in this report is secondary, there are many aspects that have been neglected. Many aspects that are directly related to happiness such as mental health of

people, social class, etc weren't taken into the consideration. Perception of Corruption actually seems very indirect factor if you think that in countries where there is high tolerance towards corruption, people become used to it, naturally their happiness won't be affected by such issues. Another thing to take into consideration is that the data sample seems too small to draw conclusion for worldwide level. The responses of the participants within the same country can vary greatly, as people from different class, geographical location, ethnic backgrounds, personal believes and personalities are very different.

# Introduction

The term happiness comes from the Old Norse term “happ” meaning “luck”. Happiness is a state in which we experience joy, fulfilment, and high levels of serotonin. In this state, we experience no to little sorrow and we tend to enjoy our life the most. We humans want to experience this emotion out of all the other emotions the most. Happiness in fact has a big impact on our lives, it affects our decisions and the way we live our life, or you can simply put happiness as subjective wellbeing (SWB). Psychology researcher Sonja Lyubomirsky describes happiness as “the experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful, and worthwhile.”

## 1.1 Importance of Happiness

Being happy is not just smiling or laughing. Happiness is very important for human beings and has lots of advantages. Many researches and studies have been conducted to find out if happiness has any effects on humans and how does it affect one’s life if at all. Benefits of being happy are:

### 1.1.1 Being happier is equal to being healthier

According a study conducted by Harvard University, the participants who were happier had low chances of developing coronary heart disease, and low stress levels. When we are stressed, our appetite decreases and it effects our immunity system too. Happiness also promotes a good and sound sleep, which further contributes in our good health.

### 1.1.2 Helps in increasing productivity

If you are stressed, anxious or sad, high possibility that you are distracted and have low focus on the work. On the other hand, if you are happy you are highly focused and motivated to finish the work. Since happiness also promotes quality sleep, you will feel rested and will have energy to work next morning, hence increasing our productivity.

### 1.1.3 Increases Life Expectancy

According to many studies, people who are unhappy and unsatisfied with their lives, tend to depend on smoking, drinking and doing drugs, to escape those negative

feelings temporarily which of course comes with the expense of health. Happy people on the contrary, are satisfied with their life and usually stay away from such practices.

## 1.2 Factors Affecting Happiness

American Psychologist, Diener identifies five factors that contribute to happiness: social relationships, temperament/adaptation, money, society and culture, and positive thinking styles. In his research he found out,

- the happiest 10 percent of the participants all had strong supportive relationships.
- Wealth actually is correlated with happiness, particularly in poorer societies.
- The broader society also influences happiness. Denmark is the happiest, the U.S. is high but behind several European countries and Canada, and poverty stricken or war-torn nations are at the bottom.

There are several other factors that affect Happiness some affect more than other. Such factors are: salary/wages, society, life expectancy, generosity, relationships, mental health etc.

# Objectives

The objectives of this report are:

- 1.To analyse yearly happiness index data of all the countries around the world and find out useful insights such as which factor affects happiness the most, and which factor contributes the least in affecting one's happiness level.
2. To understand on what basis the world happiness index is calculated each year and why countries like Denmark, Germany always ranks top 1 and top 2 respectively.
3. Why India ranks so low every year in terms of Happiness Index.
4. To see the 5 yearly trend of Happiness Index
5. To compare if the factor affecting majorly remains the same for whole 5 years or change every year.

# Review of Literature

## Research Paper 1 Review<sup>a</sup>:

This study was conducted to identify the factors influencing on happiness among young persons in Lian, Iran during 2014. A total of 500 young people, including 272 men and 228 women were enrolled. The age range of the participants' was  $20 \pm 2.18$  years. There was a significant relationship between the happiness score and location in urban and rural, employment status and physical activity. No significant relationship was found between gender, marital status and education level with happiness score among participants. The age groups, type of occupation, physical activity and place of residence were factors associated with happiness in young persons. However, there was not significant relationship between gender, marital status and education level with a happiness score among the participants. This study had a limitation, some factors such as socioeconomic status and spiritual aptitude have impact on people's happiness, but these were not taken into consideration.

## Review Paper Review<sup>b</sup>:

This research paper talks about happiness and the factors affecting happiness scores. The key findings were that happiness does matter in very important ways. There is preliminary evidence that people who score higher on the well-being scales have better social and work relationships; make more money; live longer, healthier lives; and are more contributory societal citizens. Temperament, which appears to have a genetic component according to several recent studies, also affects mood. Diener discussed the set point theory of temperament, which states that people have ups and downs in reaction to life events, but that they adapt and return to a set point. Diener also discussed, three facets of this positive cognition: attention (seeing the positive and beauty in things), interpretation (not putting a negative spin on things), and memory (savoring past experiences rather than ruminating on negative experiences).



### Research Paper 2 Review <sup>c</sup>:

The aim of this paper was to test for an association between, and gender differences in, happiness, physical health, mental health, and religiosity. Four separate self-rating scales of these variables with good retest reliability were used. 2,210 male (n = 1,056) and female (n = 1,154) participated in this study for the questionnaire. Males had a significantly higher self-rating mean score of happiness and mental health than females, while females had a significantly higher religiosity mean score than their male counterparts. All the inter-correlations between the four self-ratings were significant and positive. Multiple regression revealed that the main predictor of happiness was mental health. Mental health accounted for 60% of the variance in predicting happiness, while religiosity accounted for around 15% of the variance in predicting happiness.

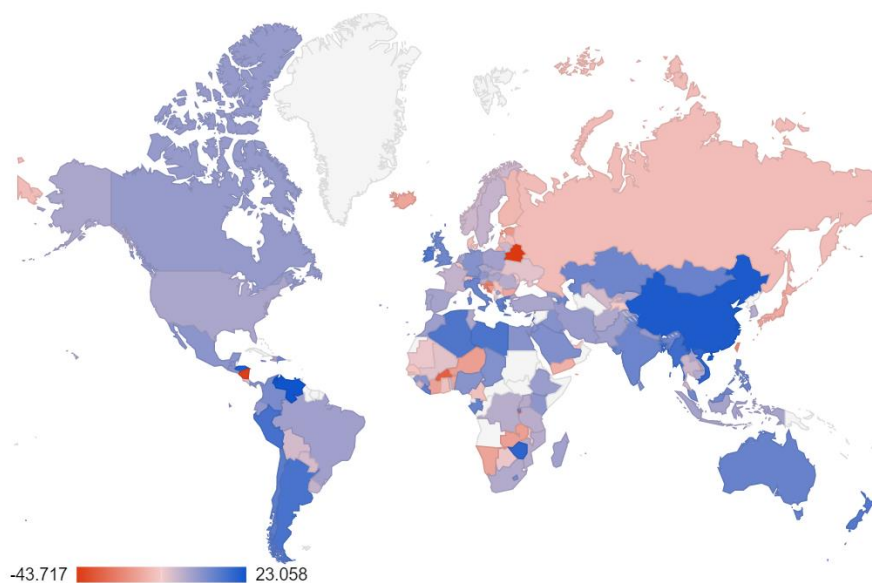
### Case Study Review <sup>d</sup>:

This study is about finding the impact of intensity of covid-19 and happiness in various countries. The stringency of a country was plotted against the COVID-19 cases in a scatter to show how the two compare. This showed a strong correlation between the spread of the virus and the response of a country. The relation between stringency and the number of COVID-19 cases per 1,000 people was found to be logarithmic in nature. Therefore, the worldwide average stringency was calculated using a logarithmic function of the virus spread.

The resulting formula shown below, where Y equals the modeled average stringency index and X equals the 7-day average number of new COVID-19 cases.

$$Y = 2.5178 * \ln(X) + 71.871$$

This showed how the United States was relatively slow to react to the rising number of COVID-19 cases whereas Libya had more stringent response. This map visualizes all countries, showing the weighted average difference between a country's stringency compared to the worldwide average.



Country	Happiness score	Average Difference From Worldwide Stringency
Finland	7.842	-14.95
Denmark	7.620	-12.88
Switzerland	7.571	-13.54
Iceland	7.554	-19.18
Netherlands	7.464	0.64
Norway	7.392	-4.84
Sweden	7.363	-3.46
Luxembourg	7.324	-9.60
New Zealand	7.277	12.84
Austria	7.268	4.44

This study concludes that the 10 happiest countries in the world were less stringent compared to the rest of the world. The average relative stringency of the 10 happiest countries was found - 6.05. Hence, it was found that there was no strong correlation between stringency and happiness. And even though it's impossible to find a causal relationship between a country's stringency and happiness, it's revealing to see the data on how some countries have fared during the pandemic. The data reveals a lot about how countries like New Zealand, Finland, Belarus and the United States have responded to the virus.

# Research Methodology

I have used qualitative research approach, as the object of this report was to find insights of the data. The key aspects of the topic to be discussed are the most and least affecting factors of happiness and understand why they affect as the way they do.

To obtain these insights, happiness index of each country was used from the year 2022 – 2018. The factors that were taken in account for calculating the happiness indices are:

- GDP per capita
- Social Support
- Health Expectancy
- Generosity
- Perception of corruption

On the basis of these 5 above mentioned factors, Happiness Index of each country is calculated.

To find out insights we have to first establish relationships between these factors and happiness index. Correlation analysis was used to deduce the relationship between the various factors and the correlation coefficients of [Happiness Index : Factor] were only taken. Since the coefficients amongst the two factors are not useful for our objectives they have not been used. After finding out correlation coefficients, I visualized them on a graph.

Since this data is secondary data, other factors such as cultural affect, strictness of law etc weren't taken into consideration.

## Data Collection

Secondary data has been used. Data was collected from <https://worldhappiness.report/> . According to the World Happiness Report data was collected from the Gallup World Poll surveys. Gallup World Poll uses a questionnaire where participants have to rate various factors according to them on the scale from 1 to 10. The sample size was 3000 participants from each country, with some exception countries where it was harder to collect data, with only 1000 participants. I extracted the data from the website and then cleaned and transformed it.

# Data Analysis

To establish relationship between factors and happiness index, correlation tool was used.

Correlation analysis deduces a relationship between two variables (here happiness and factors) to help analyse the types of relationships these factors have with happiness score. The analysis was done on Excel. The data analysis tool helped in finding the correlation coefficients. First the correlation analysis was performed on the year 2022 data only (fig. 1), to get a yearly insight.

During the analysis only Happiness Score : Factors coefficient scores were taken into consideration only.

	<i>Happiness</i>	<i>Explained by: GDP per capita</i>	<i>Explained by: Social support</i>	<i>Explained by: Healthy life expectancy</i>	<i>Explained by: Freedom to make life choices</i>	<i>Explained by: Generosity</i>	<i>Explained by: Perceptions of corruption</i>
Happiness	1						
Explained by: GDP per capita	0.763675923	1					
Explained by: Social support	0.777808233	0.72243	1				
Explained by: Healthy life expectancy	0.740272687	0.81552	0.66669	1			
Explained by: Freedom to make life choices	0.624707702	0.4585	0.4802	0.43297	1		
Explained by: Generosity	0.063482887	-0.16449	-0.00239	-0.09809	0.17658	1	
Explained by: Perceptions of corruption	0.416272305	0.37791	0.22349	0.3625	0.40238	0.09514	1

Fig. 1

Later the correlation analysis was performed on year 2022-2018 data, to obtain 5 yearly insights. The following tables show 2022 (fig. 2), 2021 (fig. 3), 2020 (fig. 4), 2019 (fig. 5), 2018 (fig. 6) correlation coefficients.

2022		Happiness	Explained by: GDP per capita	Explained by: Social support	Explained by: Healthy life expectancy	Explained by: Freedom to make life choices	Explained by: Generosity	Explained by: Perceptions of corruption
	Happiness	1						
	Explained by: GDP per capita	0.763676	1					
	Explained by: Social support	0.777808	0.722432	1				
	Explained by: Healthy life expectancy	0.740273	0.815517	0.666691	1			
	Explained by: Freedom to make life choices	0.624708	0.458503	0.480202	0.432967	1		
	Explained by: Generosity	0.063483	-0.16449	-0.00239	-0.09809	0.17658	1	
	Explained by: Perceptions of corruption	0.416272	0.377905	0.223487	0.3625	0.40238	0.095141	1

Fig. 2

2021		Happiness score	Explained by: Log GDP per capita	Explained by: Social support	Explained by: Healthy life expectancy	Explained by: Freedom to make life choices	Explained by: Generosity	Explained by: Perceptions of corruption
	Happiness score	1						
	Explained by: Log GDP per capita	0.789748	1					
	Explained by: Social support	0.756967	0.785291	1				
	Explained by: Healthy life expectancy	0.76806	0.859486	0.723248	1			
	Explained by: Freedom to make life choices	0.607733	0.43231	0.483073	0.461368	1		
	Explained by: Generosity	-0.01777	-0.19939	-0.11497	-0.16182	0.169451	1	
	Explained by: Perceptions of corruption	0.420974	0.342232	0.203429	0.364292	0.401033	0.1639	1

Fig. 3

2020		Happiness score	Explained by: Log GDP per capita	Explained by: Social support	Explained by: Healthy life expectancy	Explained by: Freedom to make life choices	Explained by: Generosity	Explained by: Perceptions of corruption
	Happiness score	1						
	Explained by: Log GDP per capita	0.775374	1					
	Explained by: Social support	0.765001	0.781814	1				
	Explained by: Healthy life expectancy	0.770316	0.848469	0.742744	1			
	Explained by: Freedom to make life choices	0.590597	0.419019	0.478863	0.448846	1		
	Explained by: Generosity	0.069043	-0.1184	-0.05678	-0.07185	0.253721	1	
	Explained by: Perceptions of corruption	0.418305	0.334729	0.21053	0.353841	0.420145	0.27848	1

Fig. 4

			Explaine d by: GDP per capita	Explaine d by: Social support	Explaine d by: Healthy life expectan cy	Explaine d by: Freedom to make life choices	Explaine d by: Generosi ty	Explaine d by: Perceptio ns of corruptio n
2019	Happiness score	1						
	Explained by: GDP per capita	0.79394	1					
	Explained by: Social support	0.777042	0.754897	1				
	Explained by: Healthy life expectancy	0.779855	0.83556	0.718969	1			
	Explained by: Freedom to make life choices	0.566693	0.379149	0.44709	0.390367	1		
	Explained by: Generosity	0.075857	-0.07978	-0.04814	-0.02985	0.269685	1	
	Explained by: Perceptions of corruption	0.385579	0.298484	0.181807	0.295195	0.438999	0.326505	1

Fig. 5

			Explaine d by: GDP per capita	Explaine d by: Social support	Explaine d by: Healthy life expectan cy	Explaine d by: Freedom to make life choices	Explaine d by: Generosi ty	Explaine d by: Perceptio ns of corruptio n
2018	Happiness score	1						
	Explained by: GDP per capita	0.807384	1					
	Explained by: Social support	0.76466	0.725095	1				
	Explained by: Healthy life expectancy	0.777542	0.864831	0.67463	1			
	Explained by: Freedom to make life choices	0.562397	0.363491	0.405505	0.35621	1		
	Explained by: Generosity	0.14149	-0.00558	0.018847	0.022929	0.304452	1	
	Explained by: Perceptions of corruption	0.408406	0.315322	0.218967	0.312976	0.46537	0.363306	1

Fig. 6

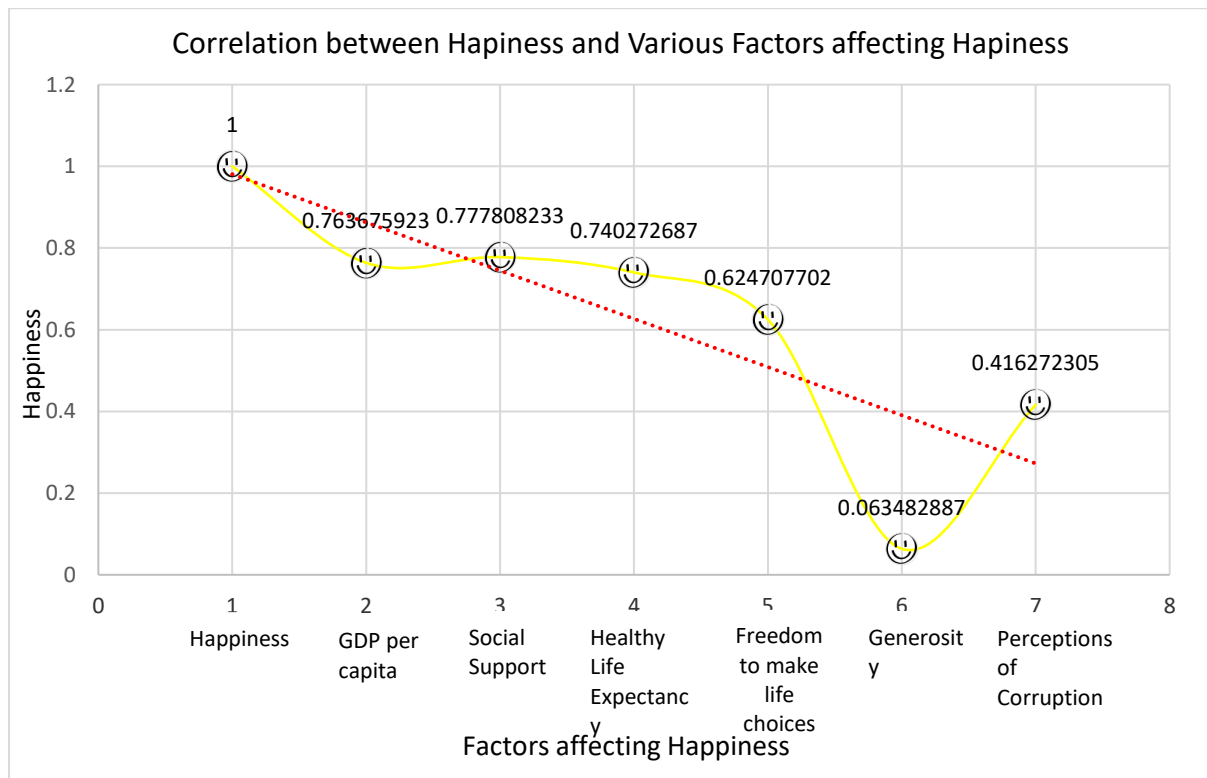
# Findings

During the analysis of 2022 data, the following insights were found (fig. 7):

	<i>Happiness</i>
Happiness	1
Explained by: GDP per capita	0.763675923
Explained by: Social support	0.777808233
Explained by: Healthy life expectancy	0.740272687
Explained by: Freedom to make life choices	0.624707702
Explained by: Generosity	0.063482887
Explained by: Perceptions of corruption	0.416272305

Fig. 7

On visualizing the new found insights, we can observe the graph (fig. 8) and easily understand the various relationships of happiness with factors.



This shows that happiness score is most affected by Social Support (  $r \approx 0.78$ ), closely



followed by GDP per capita ( $r \approx 0.76$ ), and the happiness score is least affected by Generosity ( $r \approx 0.06$ ). We can clearly see a huge difference between relationship of happiness with Social support and Generosity.

On the other hand, healthy life expectancy ( $r \approx 0.74$ ), freedom to make life choices ( $r \approx 0.62$ ) are above 0.5 which shows the significant impact on happiness score too and perceptions of corruption ( $r \approx 0.42$ ) followed by Generosity ( $r \approx 0.06$ ), are lower than 0.5 shows weaker impact on the happiness score.

On the analysis of 5-yearly data, following insights were found (fig 9):

Factors affecting Happiness Score	2022	2021	2020	2019	2018	Average
Explained by: GDP per capita	0.763676	0.789748	0.775374	0.79394	0.807384	0.7860243
Explained by: Social support	0.777808	0.756967	0.765001	0.777042	0.76466	0.7682957
Explained by: Healthy life expectancy	0.740273	0.76806	0.770316	0.779855	0.777542	0.7672093
Explained by: Freedom to make life choices	0.624708	0.607733	0.590597	0.566693	0.562397	0.5904254
Explained by: Generosity	0.063483	-0.01777	0.069043	0.075857	0.14149	0.0664209
Explained by: Perceptions of corruption	0.416272	0.420974	0.418305	0.385579	0.408406	0.4099073

Fig. 9

To make the insights easier to compare, I took the help of the average. I calculated average of all 5 years for each factor. On comparing averages, we can see that GDP per capita has the strongest correlation coefficient ( $r \approx 0.79$ ), closely followed with social support ( $r \approx 0.77$ ) and healthy life expectancy ( $r \approx 0.77$ ). Freedom to make life choices not much significant impact with coefficient about 0.5 ( $r \approx 0.6$ ) and perception of corruption ( $r \approx 0.40$ ) with generosity ( $r \approx 0.07$ ) making the least impact.

The following graph (fig. 10) can help us understand this data easily.

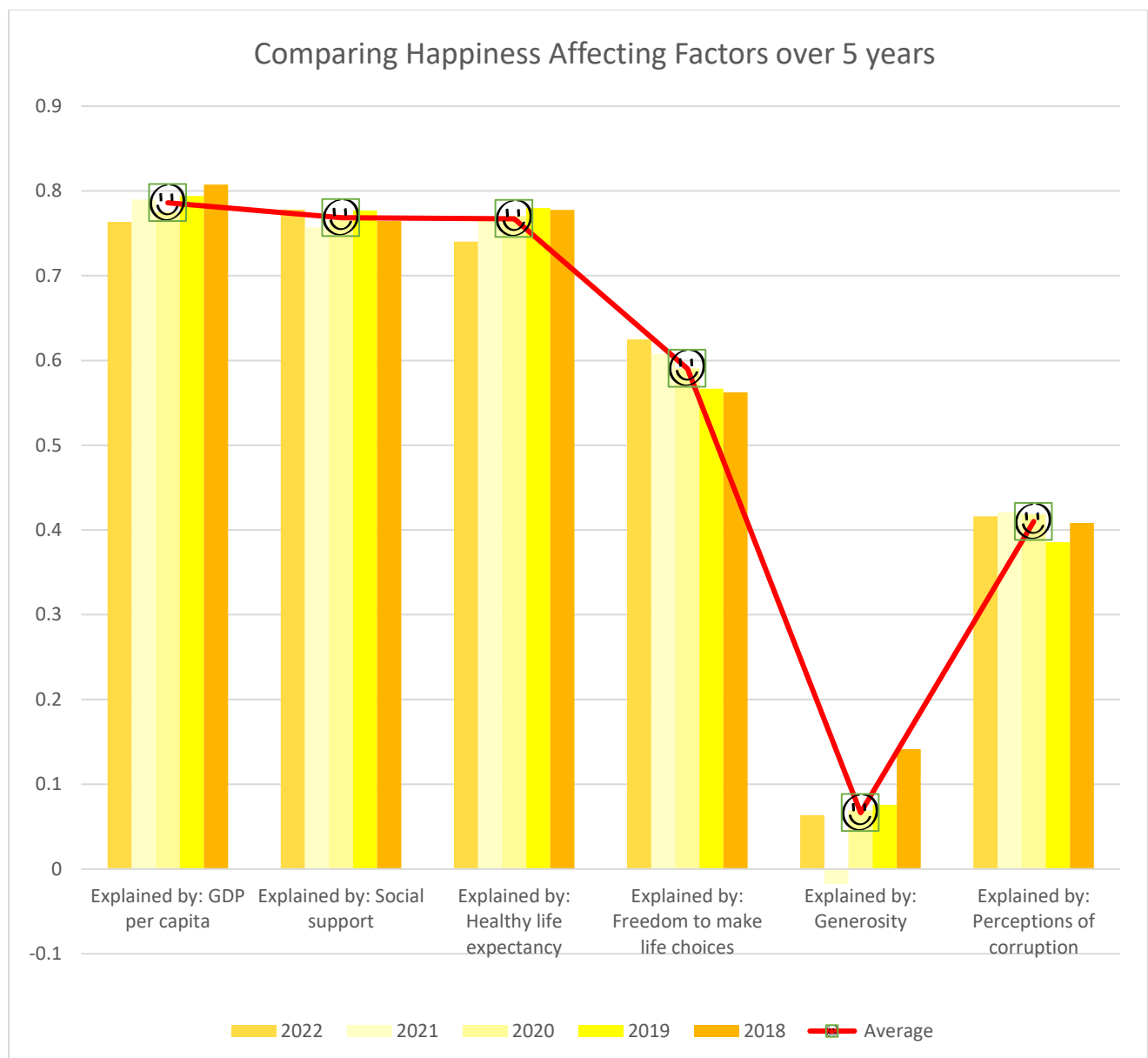


Fig. 10

Now comparing the data of 2022 1-year analysis (fig.7) and 5 year analysis (fig. 9), and observing both the graphs ( fig. 8 and fig. 10 ) we can draw the conclusions that though GDP per capita and Social Support are about the same but, during 1-year analysis (2022), social support found out to be the most affecting factor whereas on 5-year analysis average, GDP per capita seems to be the most affecting factor.

This concluded, that the major affecting factor do change every year but it's a close tie between GDP per capita and social support.

Another key finding during the data analysis was that, Finland and Denmark were ranked in the top2 every year during 2022-2018.

If we take our previous conclusions, that GDP per capita and social support affects happiness the most, we can create a logical conclusion as to why Finland and Denmark are the two most happiest countries. Finland's GDP per capita is \$53,982.6 and Denmark's GDP per capita is \$61063.1 by 2021 according to The World Bank. The GDP per capita of top 10 ranking countries are very high as compared to low ranking countries such as Afganistan which ranks last in the happiness index with GDP per capita only \$508.81by 2020. So this proves that the insights of GDP per capita being the mojour happiness affecting factor is correct.

Now, lets look at the social support index of Finland and Denmark. In 2021, according to OECD.org, Finland has 97% social support and Denmark has 94.3%. On the contrary, courtries like Afganistan has very low social support. Due to current political reasons, no data is available for the same. This also proves that the social support is also one of the major happiness affecting factors.

Lets, look at India's case and try to understand. India's GDP per capita is \$2,277.4 and social support data is not available as for now. But if we look at other data such as life expectancy, India's life expectancy is 69.66 years, which quite low if compared to Finland and Denmark both around 81 years in year 2019. We can see that the overall the factors that affect the happiness, all these factors are very low in India hence, India ranks very low in world happiness report.

The graph shows the 5 year performance of India in World Happiness Report.

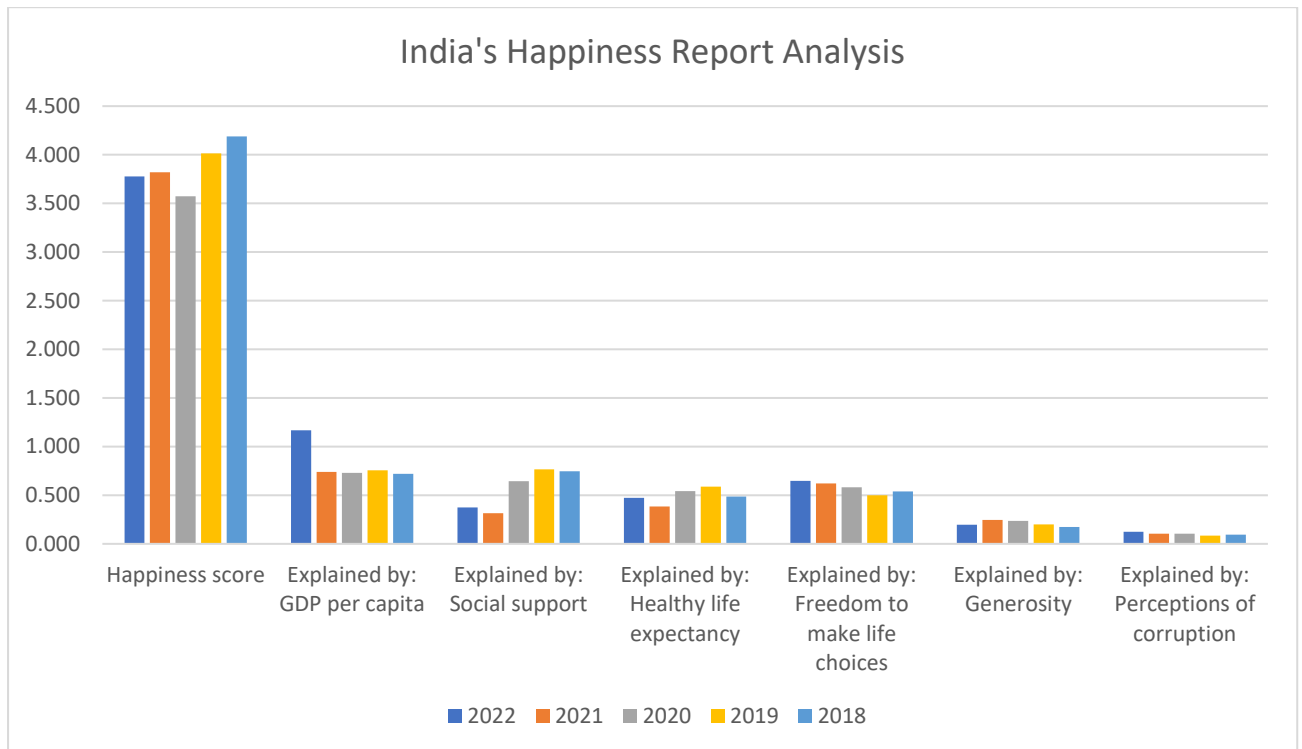


Fig. 11

# Conclusions

1. Happiness Index is dependant on many factors.
2. Major factor that affects the happiness score the most is GDP per capita if we look at the 5 yearly Happiness index trend.
3. Major affecting factor is Social Score if we consider the 1-yearly analysis.
4. Least affecting factor is Generosity both in 1-yearly and 5 yearly analysis.
5. Other factors such as Healthy life expectancy and freedom to make choices also affect happiness score significantly.
6. Perception of Corruption and Generosity has low to neglige affect on happiness score.
7. Finland and Denmark and the two most happiest countries every year. This is because of their high GDP per capita and Social Scores.
8. India ranks very low in happiness index.
9. As India's GDP per capita and other factors have improved, the happiness index also improved from 144 (2020) to 136 (2022).
10. Factors affecting the happiness score changes every year, with GDP per capita and Social Support being the major factors.

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