World Happiness Report 2021

Contents

1.Introduction

The World Happiness Report is a landmark survey of the state of global happiness . The report continues to gain global recognition as governments, organizations and civil society increasingly use happiness indicators to inform their policy-making decisions. 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. The reports review the state of happiness in the world today and show how the new science of happiness explains personal and national variations in happiness. Being happy is not just about feeling good. It improves our health. The happiness scores and rankings use data from the Gallup World Poll.

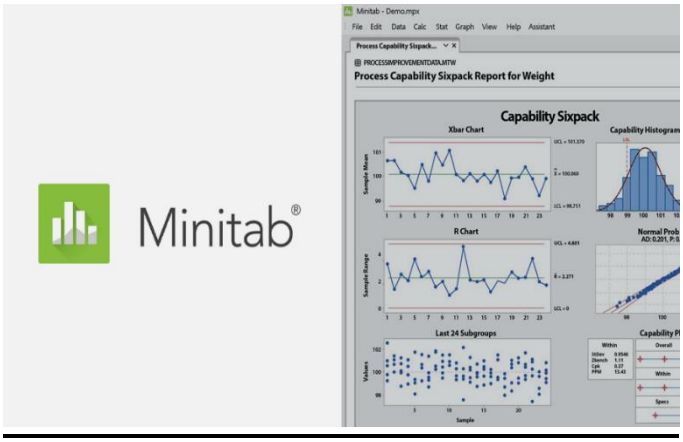
The columns following the happiness score estimate the extent to which each of six factors such as economic production, social support, life expectancy, freedom, absence of corruption, and generosity contribute to making life evaluations higher in each country than they are in Dystopia, a hypothetical country that has values equal to the world's lowest national averages for each of the six factors. They have no impact on the total score reported for each country, but they do explain why some countries rank higher than others.

2.Objectives

Focus on the effects of COVID-19 on the structure and quality of people's lives.

Describe and evaluate how governments all over the world have dealt with the pandemic. Especially, we try to explain why some countries have done so much better than others.

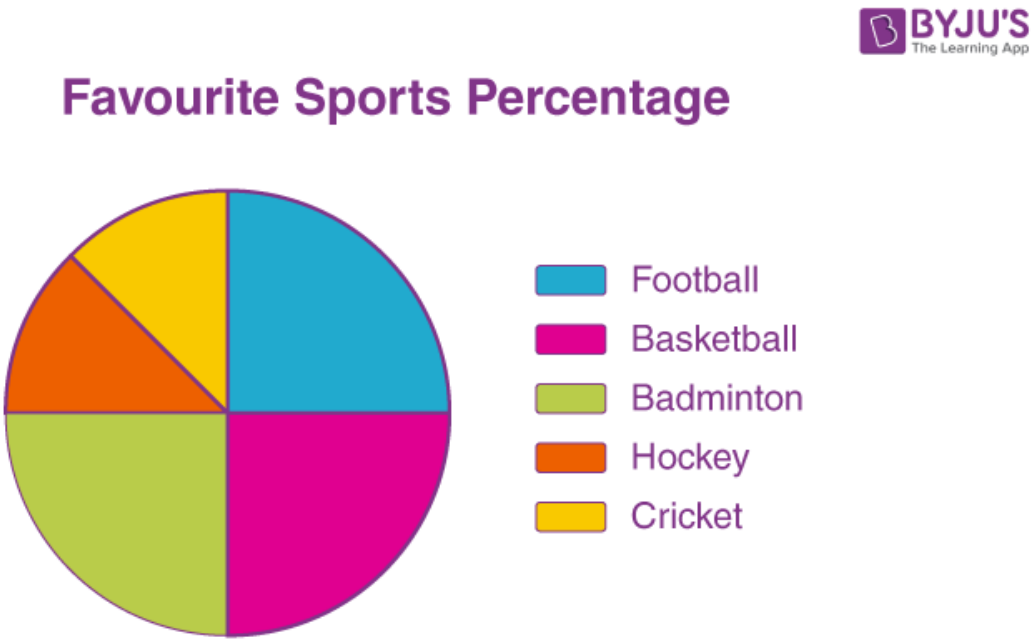
3.Methodology



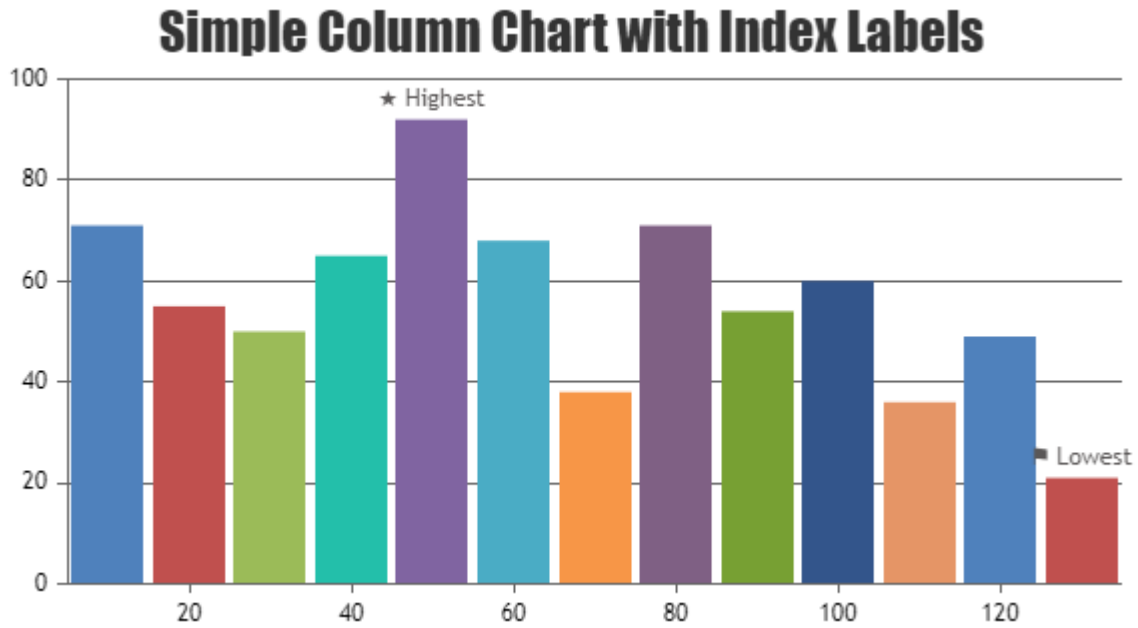
Methods we used to find out the behavior of collected data and organize them into an effective manner are very important. We use statistical software called Minitab and Microsoft excel to analysis data. We use graphical methods such as bar charts, pie charts, histograms etc.

Type of Charts

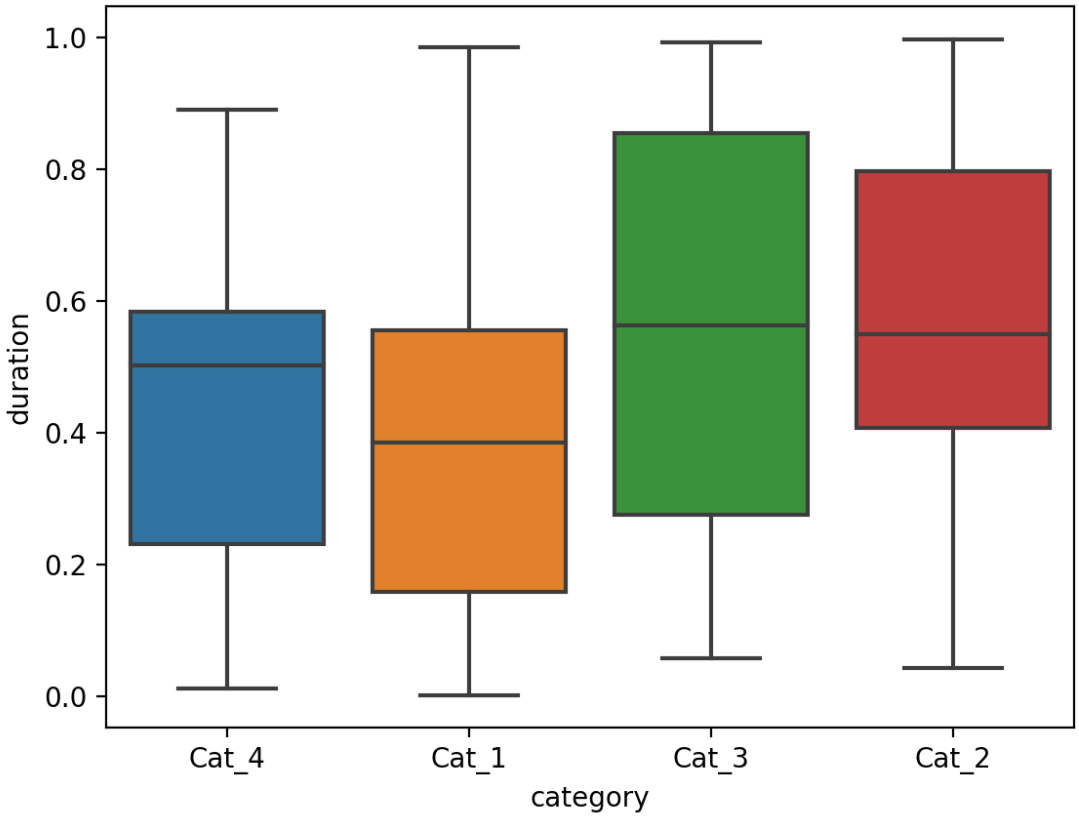
▪ Pie Charts



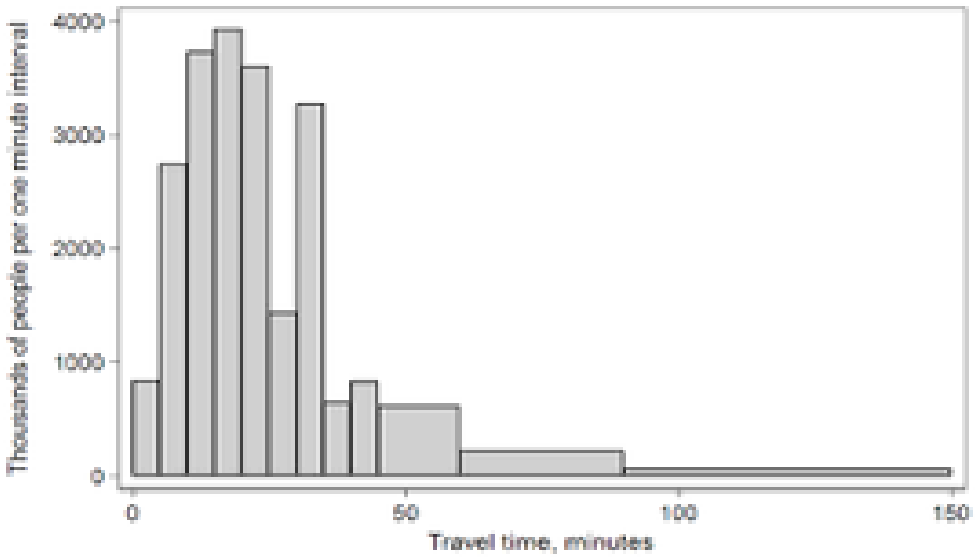
▪ Bar Graphs



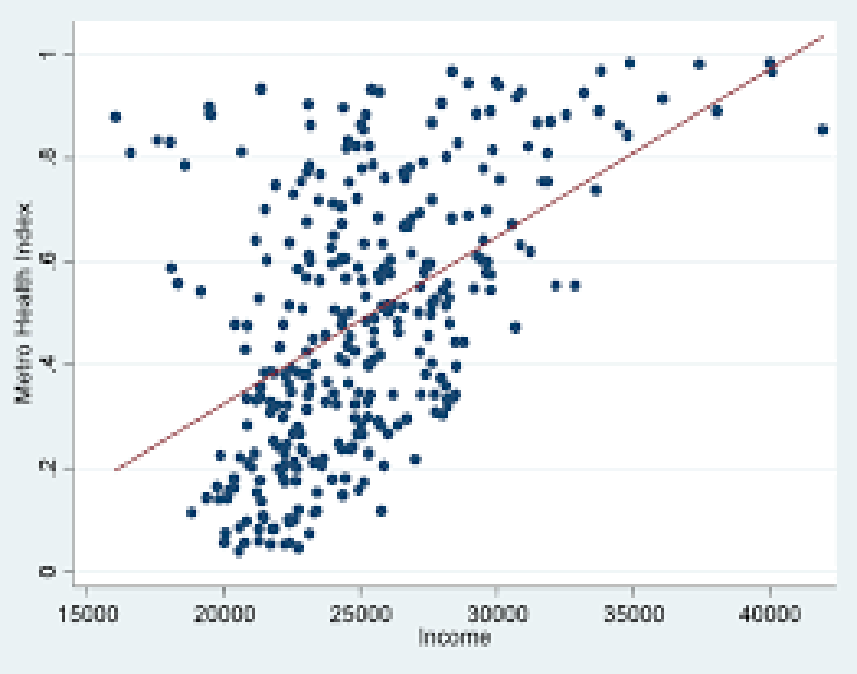
▪ Box Plots



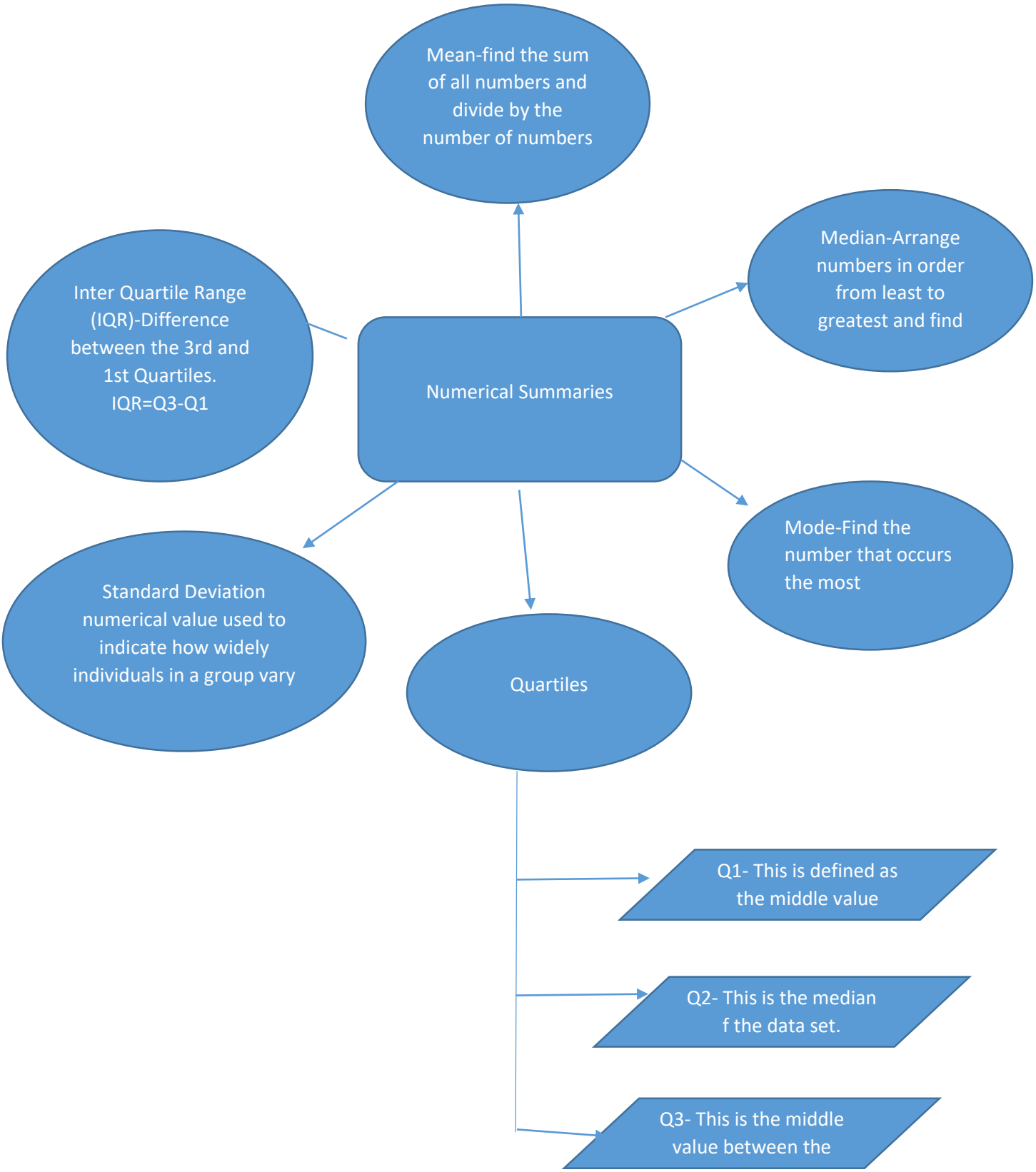
▪ Histograms



▪ Scatterplots



Numerical Summaries



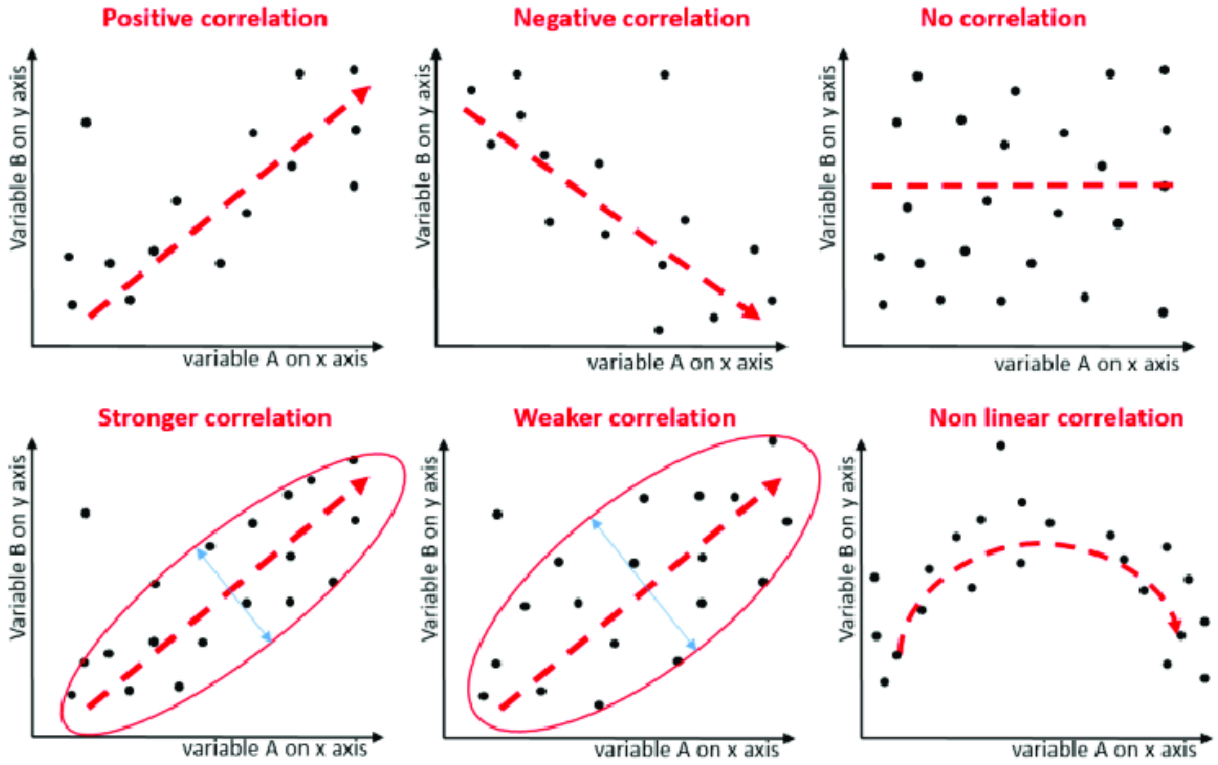
Descriptive Statistics

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Ladder score	149	0	5.5328	0.0880	1.0739	2.5230	4.8430	5.5340	6.2820	7.8420

Regression

Regression analysis is a group of statistical procedures used in statistical modeling to calculate the associations between a dependent variable and one or more independent variables.



Data

	C1-T	C2-T	C3	C4	C5	C6	C7	C8	
	Country name	Regional indicator	Ladder score	Standard error of ladder score	upperwhisker	lowerwhisker	Logged GDP per capita	Social support	Healthy
1	Finland	Western Europe	7.842	0.032	7.904	7.780	10.775	0.954	
2	Denmark	Western Europe	7.620	0.035	7.687	7.552	10.933	0.954	
3	Switzerland	Western Europe	7.571	0.036	7.643	7.500	11.117	0.942	
4	Iceland	Western Europe	7.554	0.059	7.670	7.438	10.878	0.983	
5	Netherlands	Western Europe	7.464	0.027	7.518	7.410	10.932	0.942	
6	Norway	Western Europe	7.392	0.035	7.462	7.323	11.053	0.954	
7	Sweden	Western Europe	7.363	0.036	7.433	7.293	10.867	0.934	
8	Luxembourg	Western Europe	7.324	0.037	7.396	7.252	11.647	0.908	
9	New Zealand	North America and ANZ	7.277	0.040	7.355	7.198	10.643	0.948	
10	Austria	Western Europe	7.268	0.036	7.337	7.198	10.906	0.934	
11	Australia	North America and ANZ	7.183	0.041	7.265	7.102	10.796	0.940	
12	Israel	Middle East and North Africa	7.157	0.034	7.224	7.090	10.575	0.939	
13	Germany	Western Europe	7.155	0.040	7.232	7.077	10.873	0.903	
14	Canada	North America and ANZ	7.103	0.042	7.185	7.021	10.776	0.926	
15	Ireland	Western Europe	7.085	0.040	7.164	7.006	11.342	0.947	
16	Costa Rica	Latin America and Caribbean	7.069	0.056	7.179	6.960	9.880	0.891	
17	United Kingdom	Western Europe	7.064	0.038	7.138	6.990	10.707	0.934	
18	Czech Republic	Central and Eastern Europe	6.965	0.049	7.062	6.868	10.556	0.947	
19	United States	North America and ANZ	6.951	0.049	7.047	6.856	11.023	0.920	
20	Belgium	Western Europe	6.834	0.034	6.901	6.767	10.823	0.906	
21	France	Western Europe	6.690	0.037	6.762	6.618	10.704	0.942	
22	Bahrain	Middle East and North Africa	6.647	0.068	6.779	6.514	10.669	0.862	
23	Malta	Western Europe	6.602	0.044	6.688	6.516	10.674	0.931	
24	Taiwan Province of China	East Asia	6.584	0.038	6.659	6.510	10.871	0.898	
25	United Arab Emirates	Middle East and North Africa	6.561	0.039	6.637	6.484	11.085	0.844	

world-happiness-report-2021 (1).csv

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This is the link to the dataset in the site, Kaggle;

https://www.kaggle.com/datasets/ajaypalsinghlo/world-happiness-report-2021

Our dataset contains both categorical and quantitative variables as below .

Categorical Variables

- Country name
- Regional indicator

Quantitative Variables

- Ladder score :A Cantril ladder poll served as the basis for the national happiness rankings. Respondents from nationally representative samples are asked to visualize a ladder with the best conceivable life represented by a 10 and the worst possible life represented by a 0. On a scale of 0 to 10, they are then asked to score their own current lifestyles.

- Standard error of ladder score

- Upper whisker

- Lower whisker

- Logged GDP per capita: The value of all the products and services a country generates each year is known as its gross domestic product, or GDP.

  The GDP per capita is calculated by dividing the country's total GDP by its total population.

- Social support: The following query was posed to the respondents in the survey; *"If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?*"

  The only options for responses were yes or no. A yes would be equal to one and a no to zero. A single value that reflects the overall level of social support in a nation is obtained by averaging all the responses.

- Healthy life expectancy: The average number of "healthy" years a kid is anticipated to live in is represented by the estimate for the healthy life expectancy. The WHO determines it using more than 100 various health-related parameters.
- Freedom to make life choices: The Gallup World Poll survey results are used to determine this element, just like they did for social support. The following query was

posed to applicants; *"Are you satisfied or dissatisfied with your freedom to choose what you do with your life?" The average of all responses determined the outcome of this element for each nation.*

- Generosity: The results of the Gallup World Poll poll on generosity included respondents' responses on the following question;

  "Have you donated money to a charity in the past month?"

- Perceptions of corruption: The Happiness Index also takes into account "perceptions of corruption" as a significant element. It is determined by averaging the responses to the subsequent two questions:

  "Is corruption widespread throughout the government or not?"

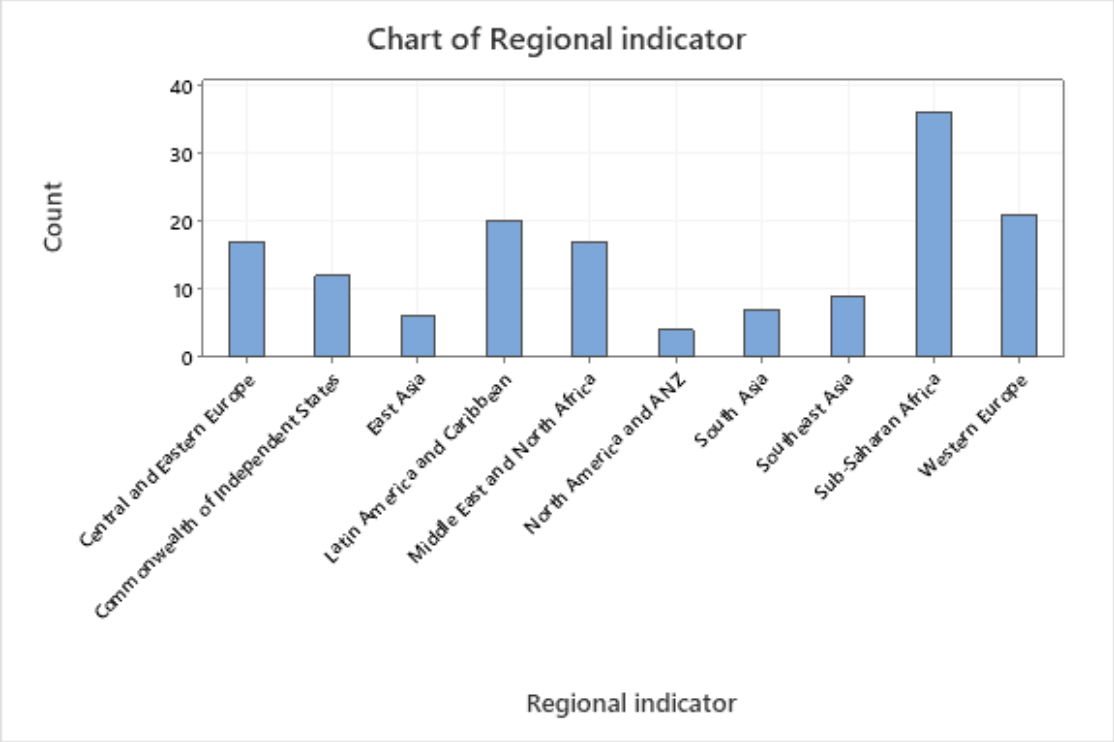
  "Is corruption widespread within businesses or not?"

- Ladder score in Dystopia

4.Analysis

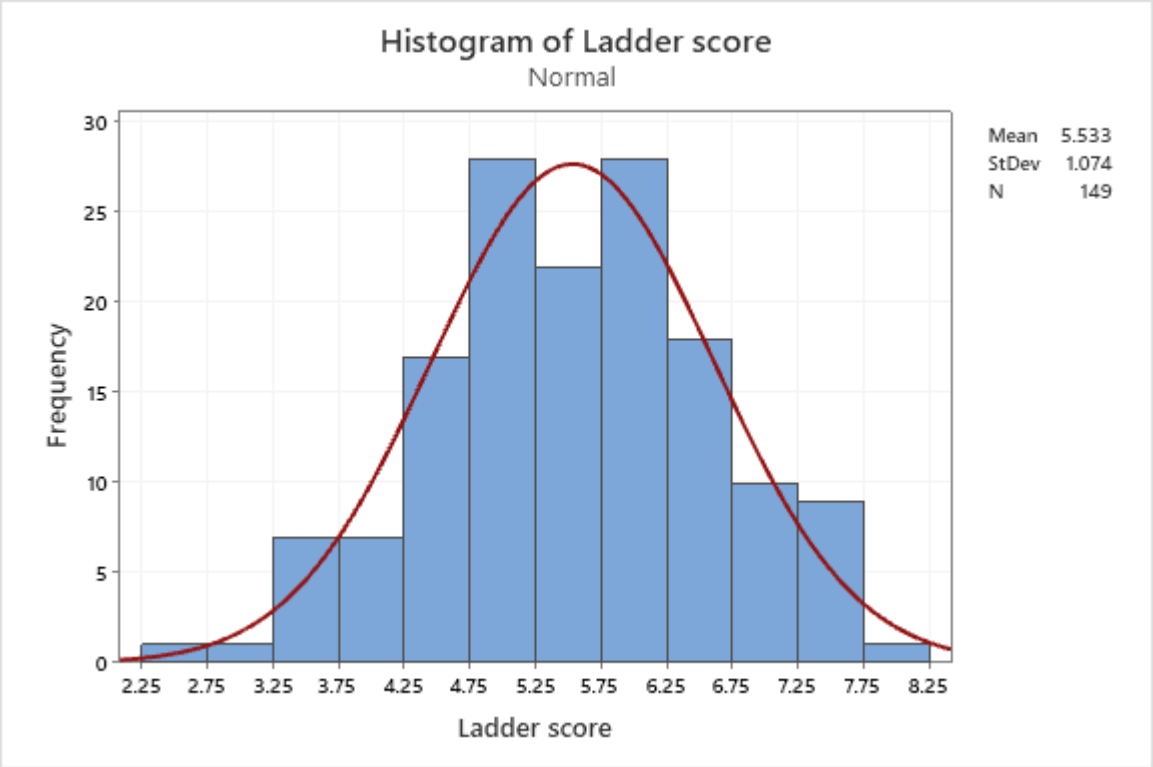
Univariate Analysis

Regional indicator



This chart shows the count of different regional indicators. We can see that highest count is from Sub-Saharan Africa and lowest count is from North America and ANZ. We can see that Central and Eastern Europe and Latin America and Caribbean has same count. The count of East Asia is lower than count of Western Europe. The count of Latin America and Caribbean is greater than South Asia.

LADDER SCORE

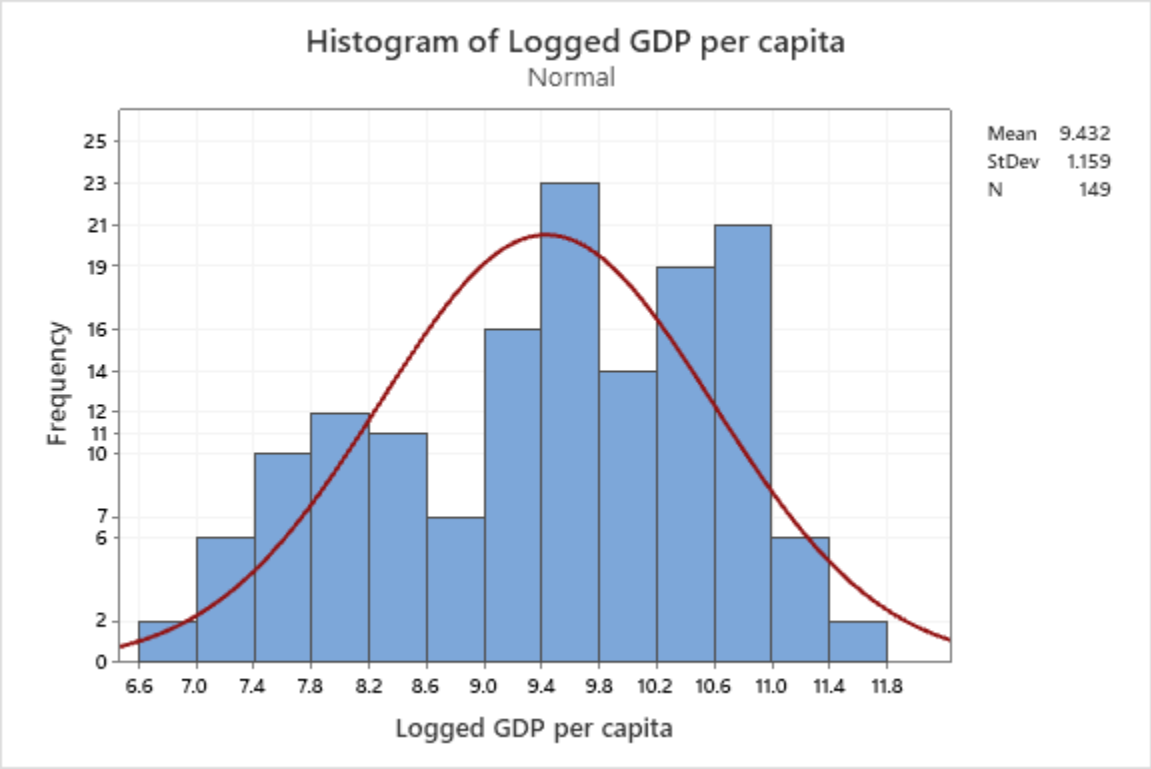


Above histogram shows the frequency of ladder score . We can see that the highest frequency of ladder score is 28 and the lowest frequency of ladder score is 1.We can see a symmetric in shape. The range is between 2.25 to 8.25 There are no any outlier .The mean is 5.533 and the std deviation is 1.074 respectively.

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Ladder score	149	0	5.5328	0.0880	1.0739	2.5230	4.8430	5.5340	6.2820	7.8420

Logged GDP per capita



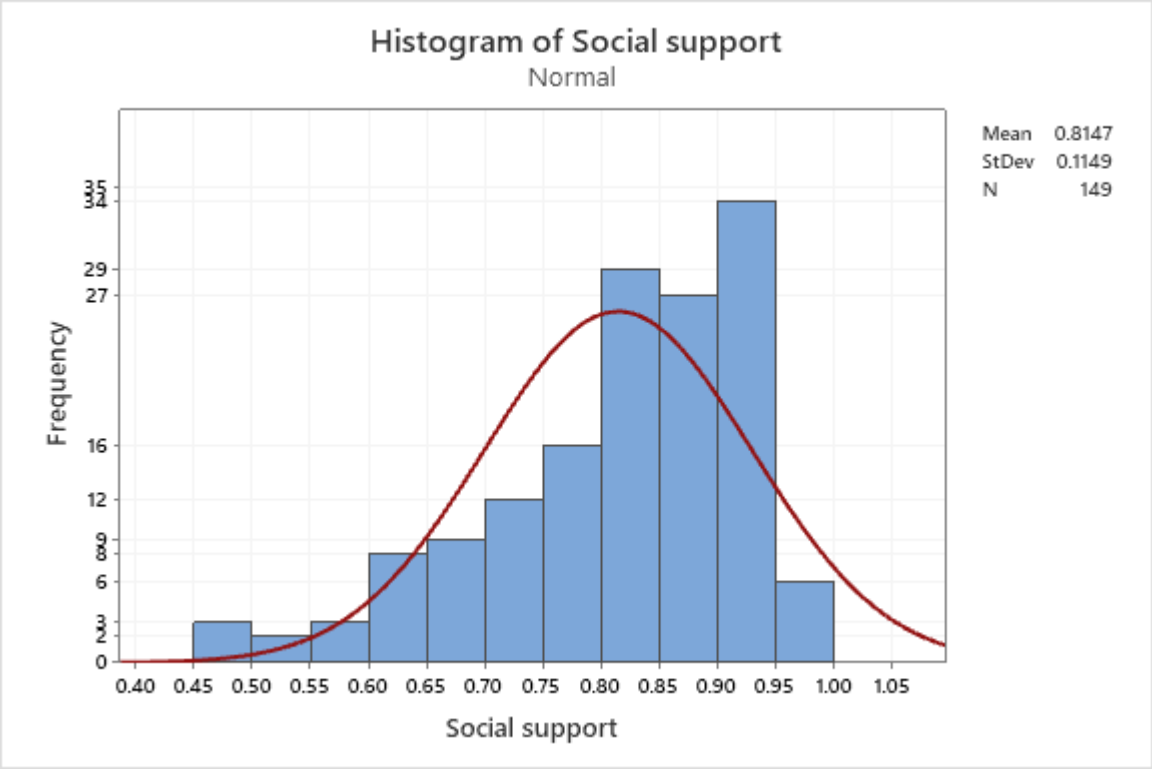
The

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3
Logged GDP per capita	149	0	9.4322	0.0949	1.1586	6.6350	8.5395	9.5690	10.4510

Variable	Maximum
Logged GDP per capita	11.6470

Social support



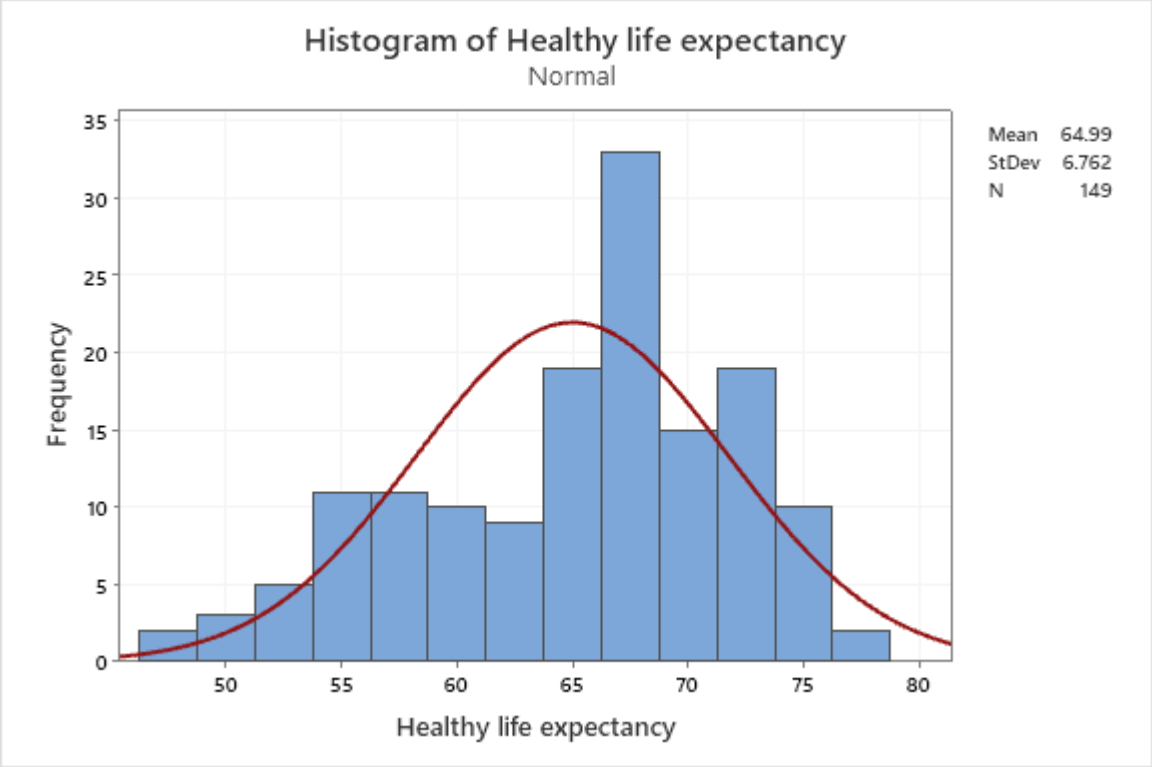
This histogram represents the frequency of social support. We can recognize a clear unimodal shape and skewness to the left.

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3
Social support	149	0	0.81474	0.00941	0.11489	0.46300	0.74800	0.83200	0.90550

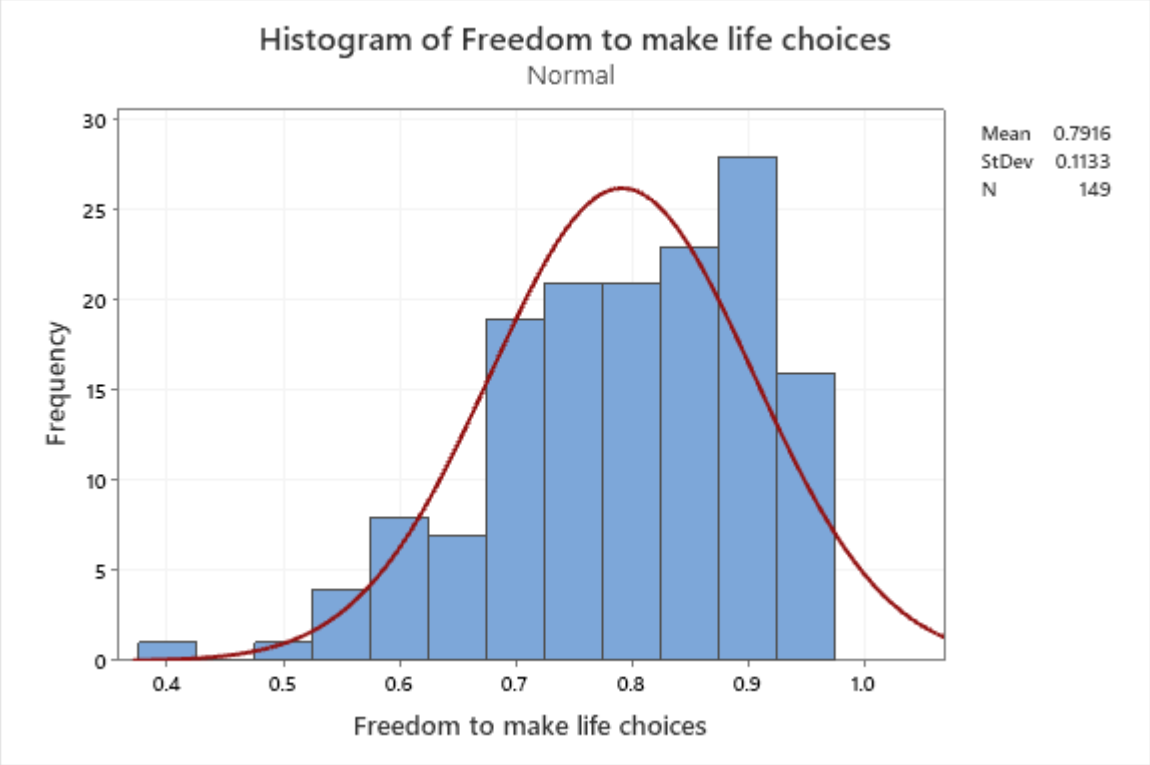
Variable	Maximum
Social support	0.98300

HALTHY LIFE EXPECTANCY



The above graph shows the frequency of healthy life expectancy. This graph is approximately symmetric and unimodal .The above graph has range between 46.25-78.8.According to the graph, the highest frequency healthy life expectancy is 33.There is no any outlier in this range.

FREADOM TO MAKE LIFE CHOIES



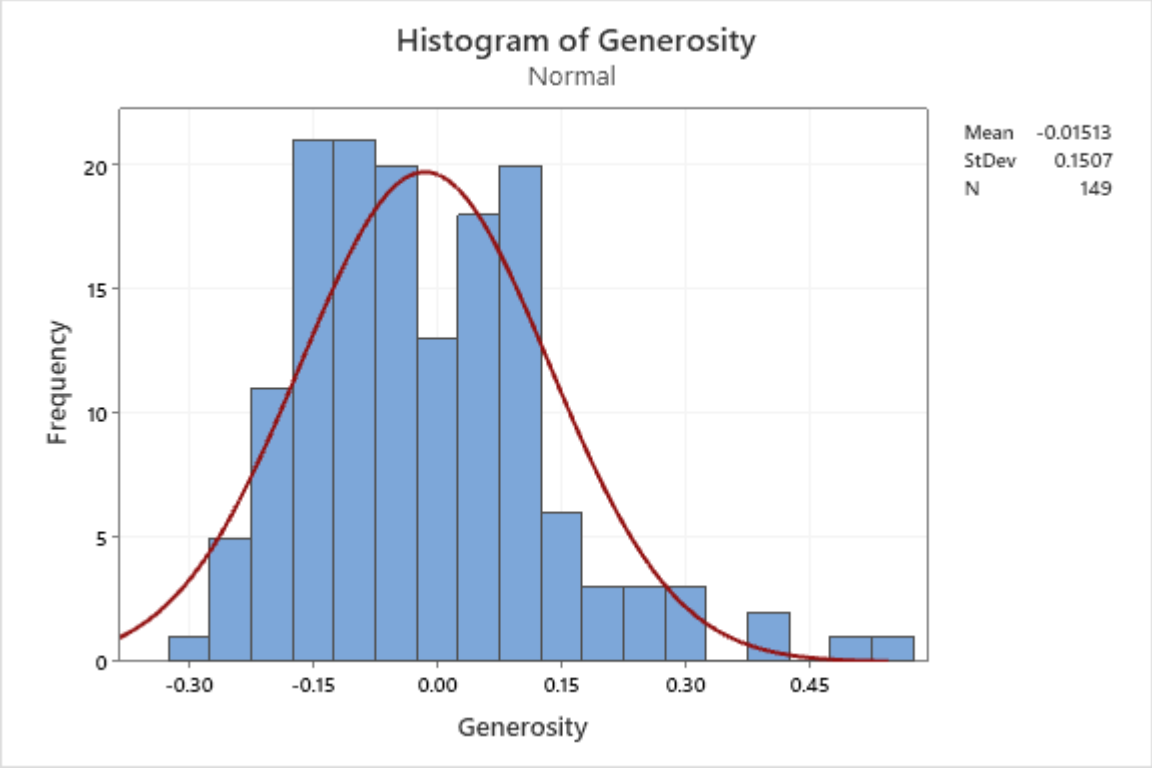
freedom to make life choices falls under the numerical variable. The above graph is negatively skewed and unimodal. Which denote most of countries have high frequency of freedom to make life choices. The above graph has range between 0.2-0.98. Considering above histogram there is an outlier.

Statistics

Variable	N	Mean	StDev	Variance	Minimum	Q1	Median	Q3
Freedom to make life choices	149	0.79160	0.11333	0.01284	0.38200	0.71750	0.80400	0.87800

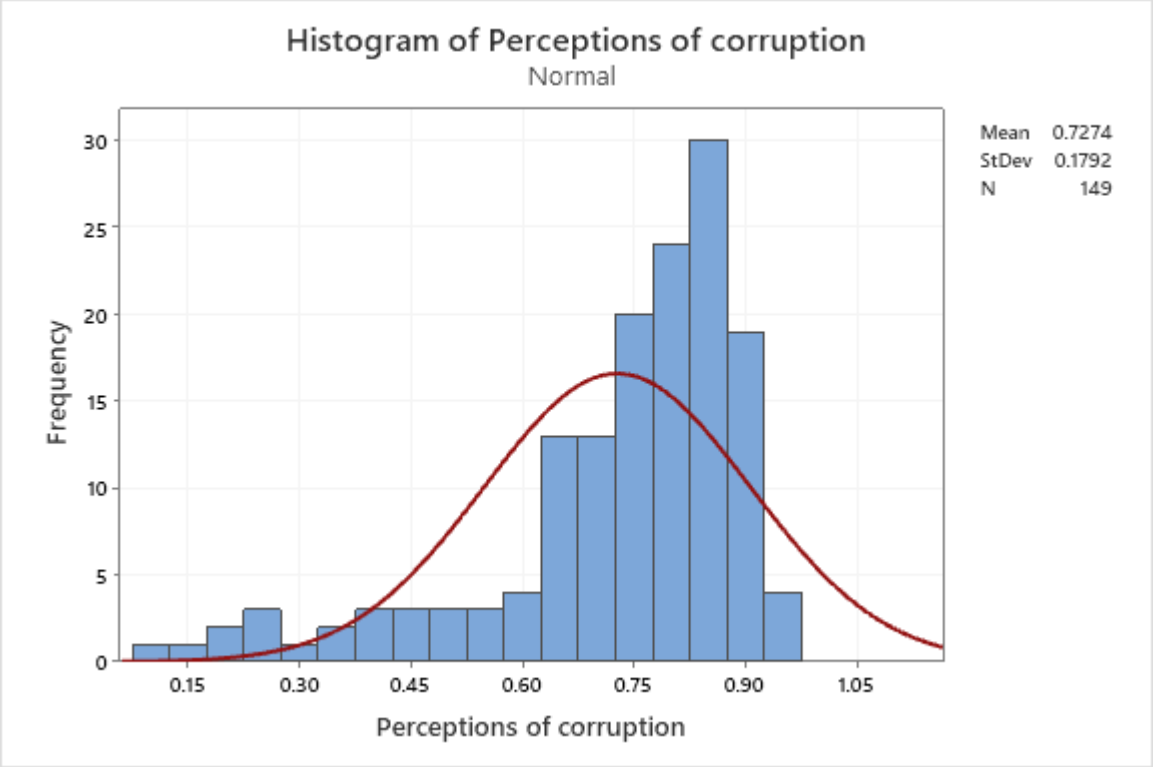
Variable	Maximum
Freedom to make life choices	0.97000

GENEROSITY



The above graph shows frequency of generosity. The graph is bell shaped .This graph is spread between -.325 to 0.475.According to the graph the highest frequency of generosity is 21 and the lowest frequency of generosity is 1 .There are two outliers. According to the above graph and the overall statistics shown below ,we can see that the mean and std deviation are respectively -0.01513 and 0.1507.

PEREPTION OF CORRUPION



This histogram represents the frequency of perception of corruption. We can recognize a unimodal and skewness to the left. According the graph and statics we can see that maximum frequency of perception of corruption is 30 and minimum frequency of corruption is 1..The mean and the median are 0.7274 and 0.7810 respectively. We cannot see any outlier in this range.

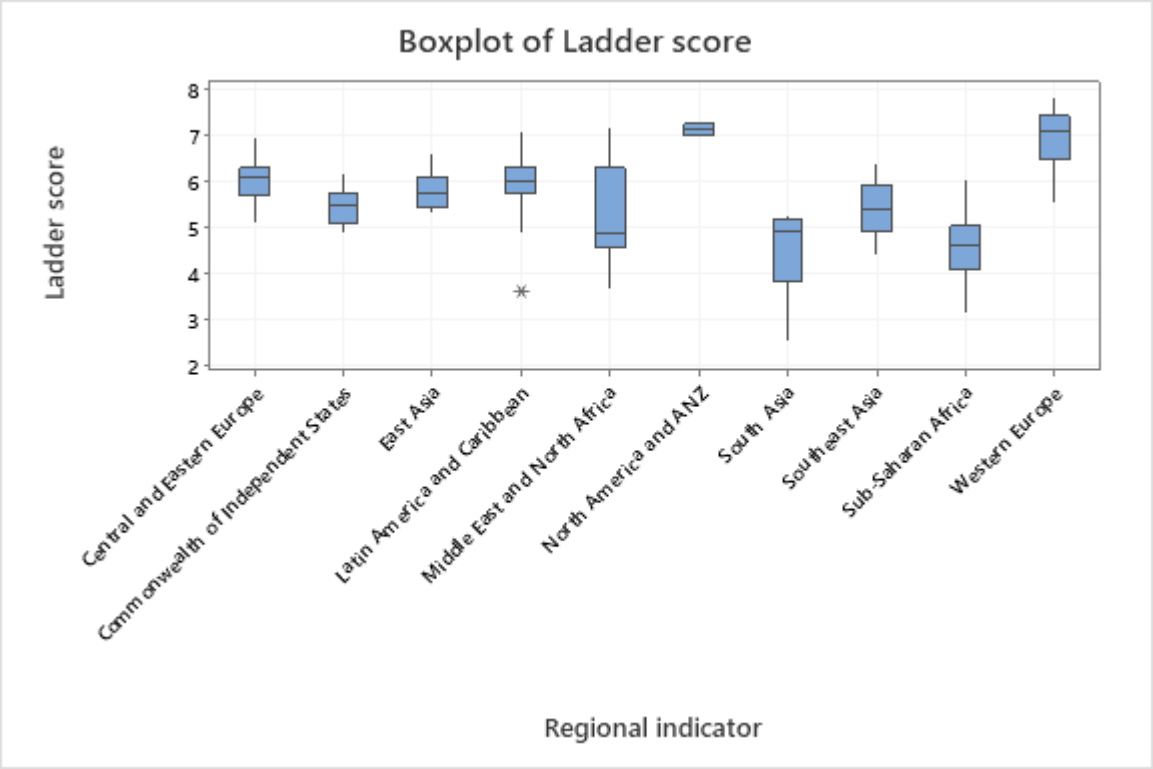
Statistics

Variable	N	Mean	StDev	Variance	Minimum	Q1	Median	Q3
Perceptions of corruption	149	0.7274	0.1792	0.0321	0.0820	0.6655	0.7810	0.8460

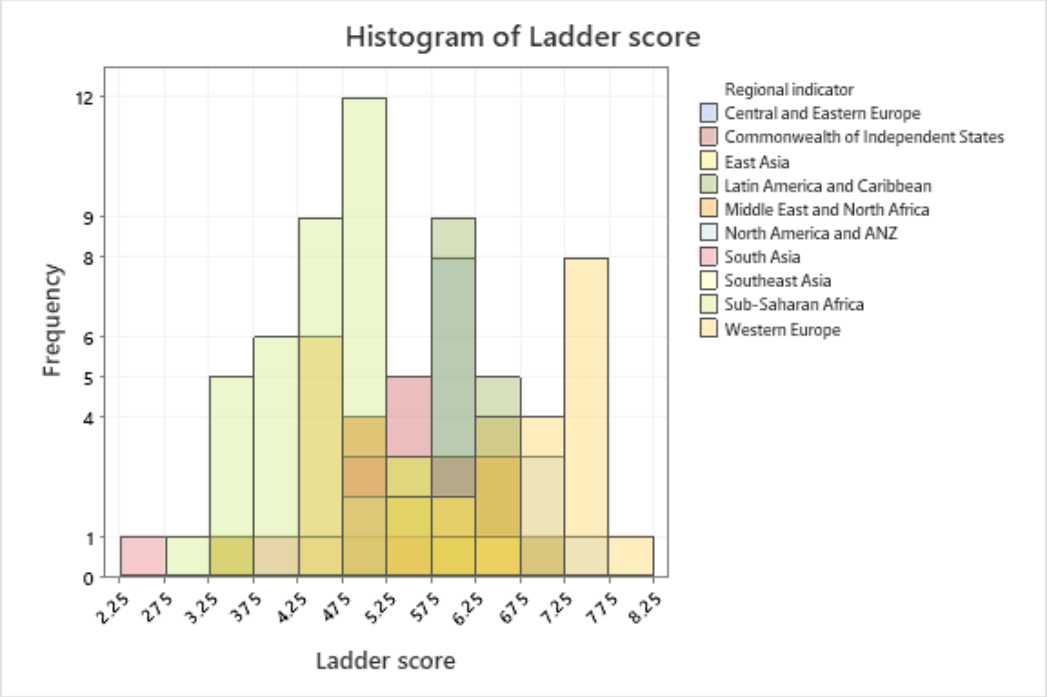
Variable	Maximum
Perceptions of corruption	0.9390

Bivariate Analysis

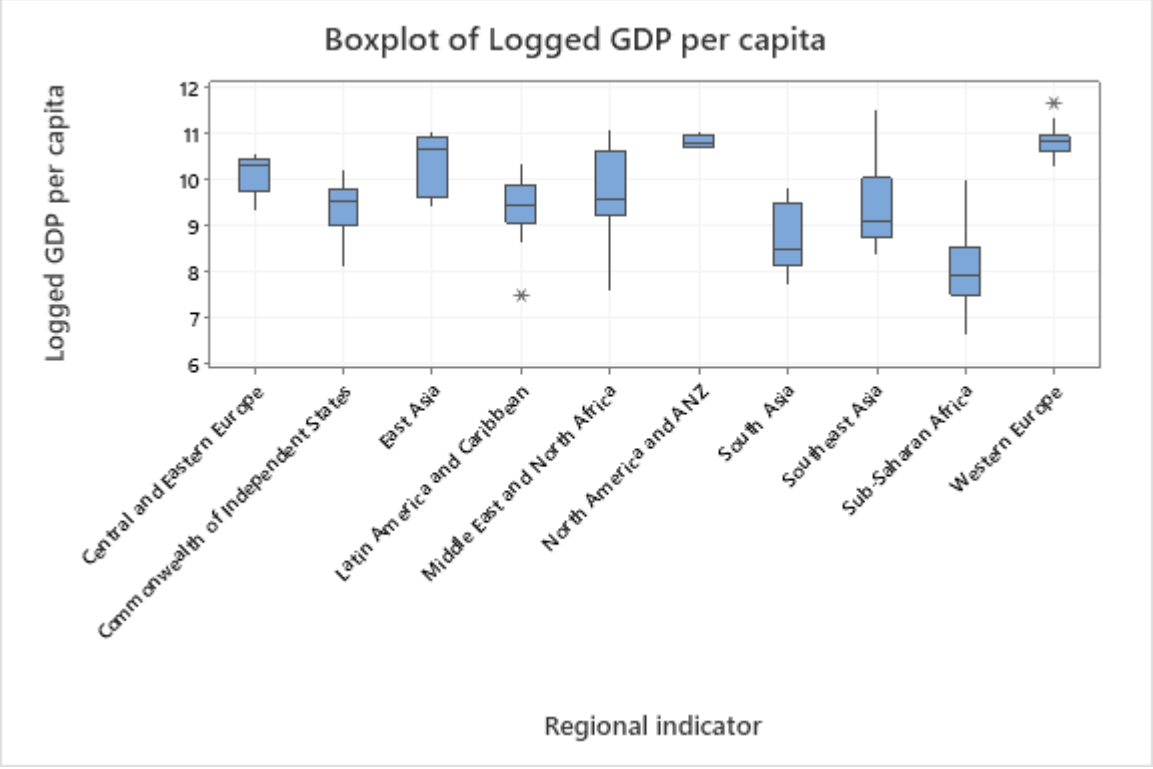
Regional Indicator vs Ladder Score



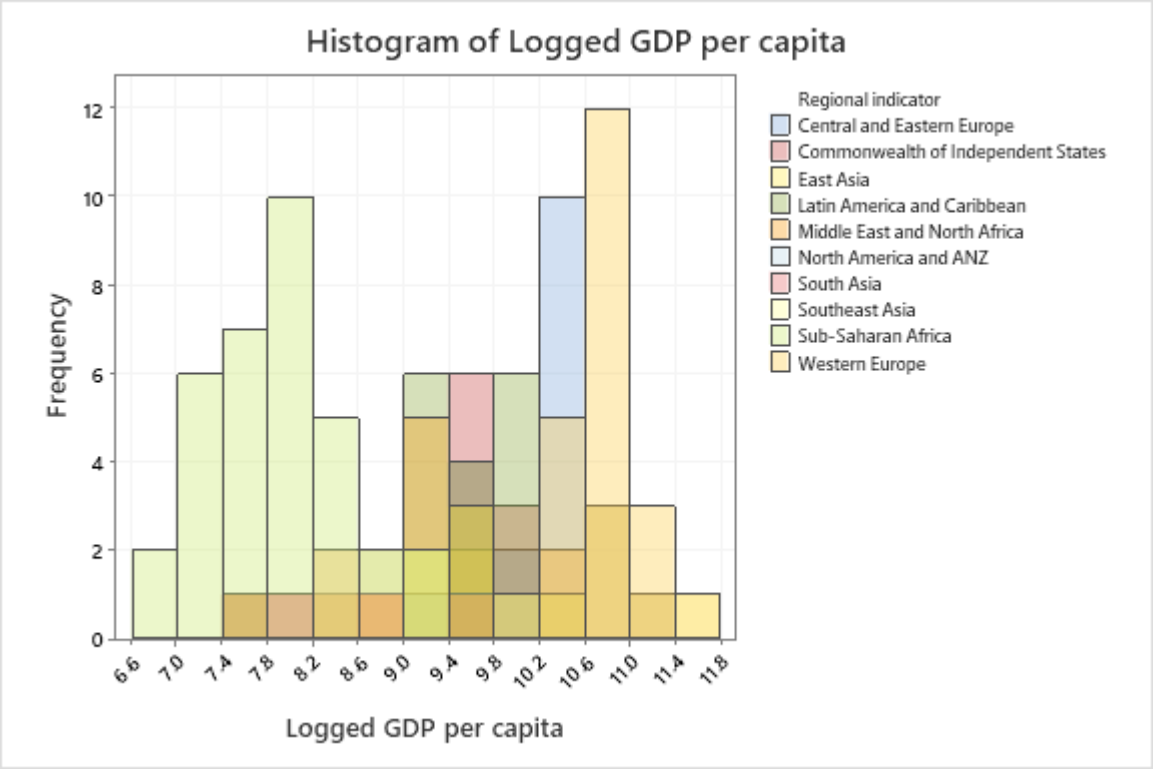
This multiple boxplots examines regional indicator in each area and ladder score. In glance we can see ladder score in Western Europe is the highest and ladder score in South Asia is the lowest. Third quartile in Central and Eastern Europe is greater than the third quartile in Common Wealth of Independent State. First quartile in Latin America and Caribbean is greater than the first quartile of Sub-Saharan Africa. The median of ladder score in Commonwealth of Independent States is 5.5.



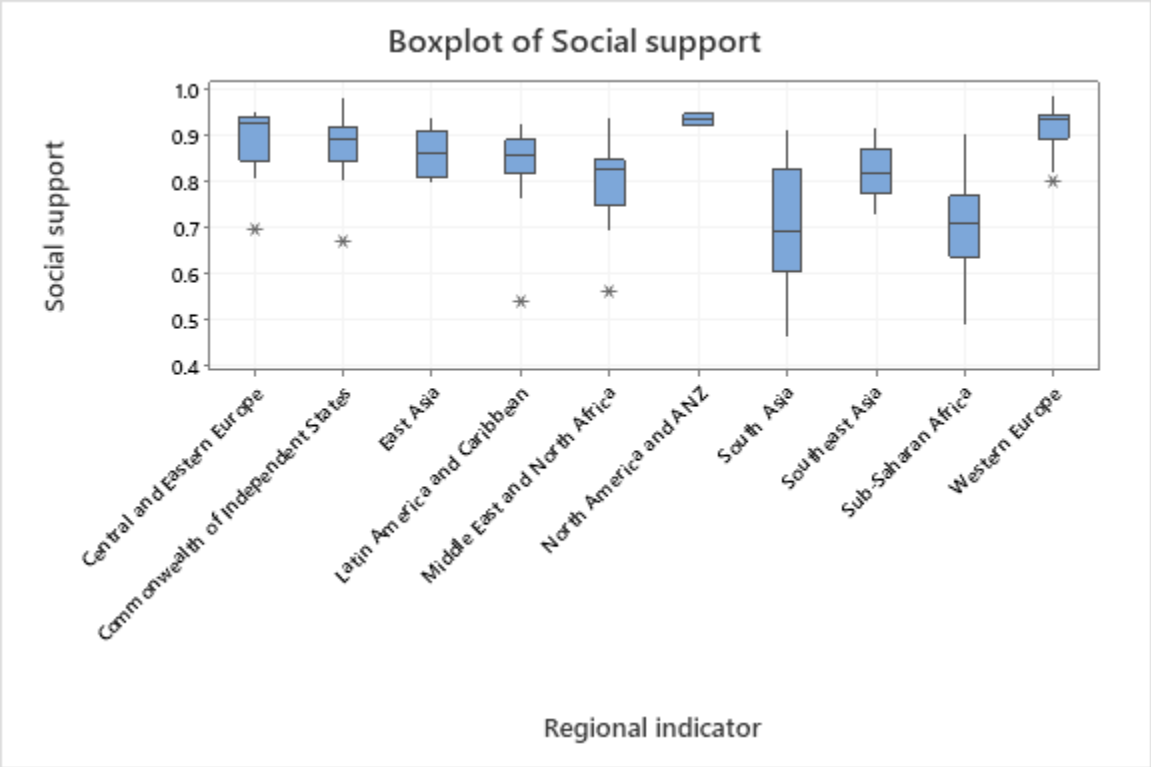
Regional Indicator vs Logged GDP per capita



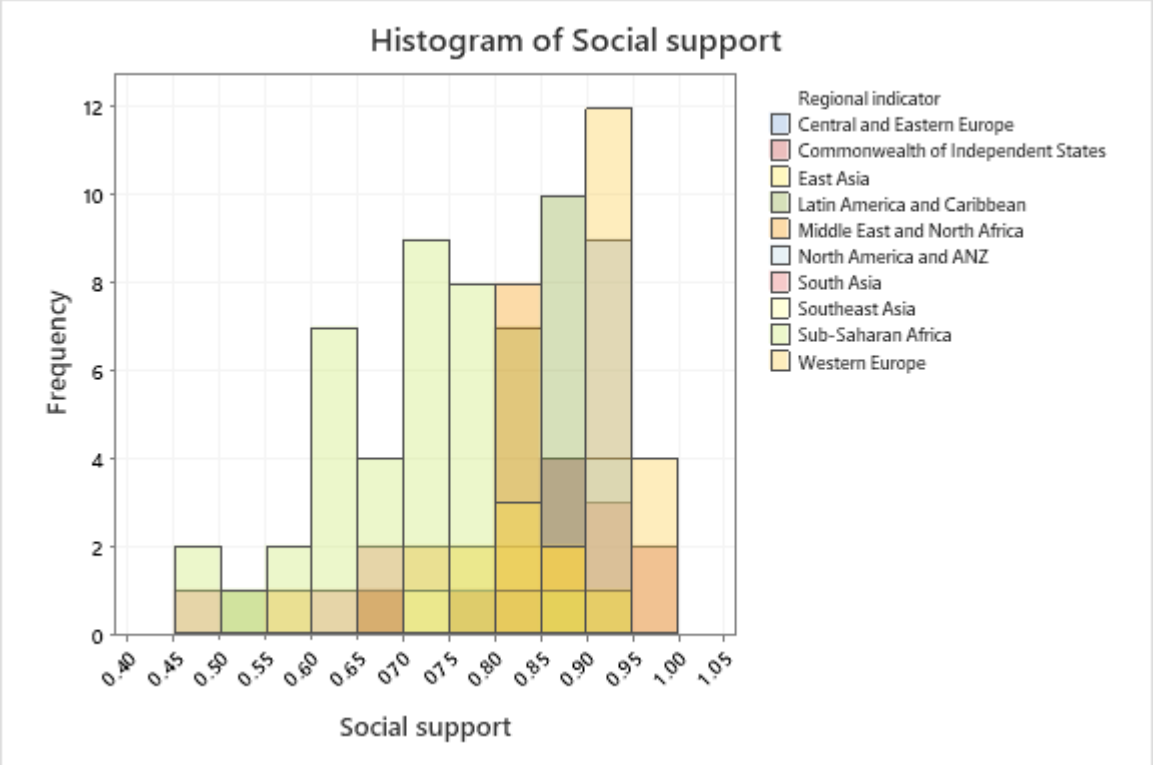
This multiple boxplots examines regional indicator in each area and logged GDP per capita. In glance we can see logged GDP per capita in Western Europe is the highest and logged GDP per capita in Sub-Saharan Africa is the lowest. Third quartile in Central and Eastern Europe is greater than the third quartile in Common Wealth of Independent State. First quartile in Latin America and Caribbean is greater than the first quartile of Sub-Saharan Africa. The median of logged GDP per capita in Latin America and Caribbean is 9.5.



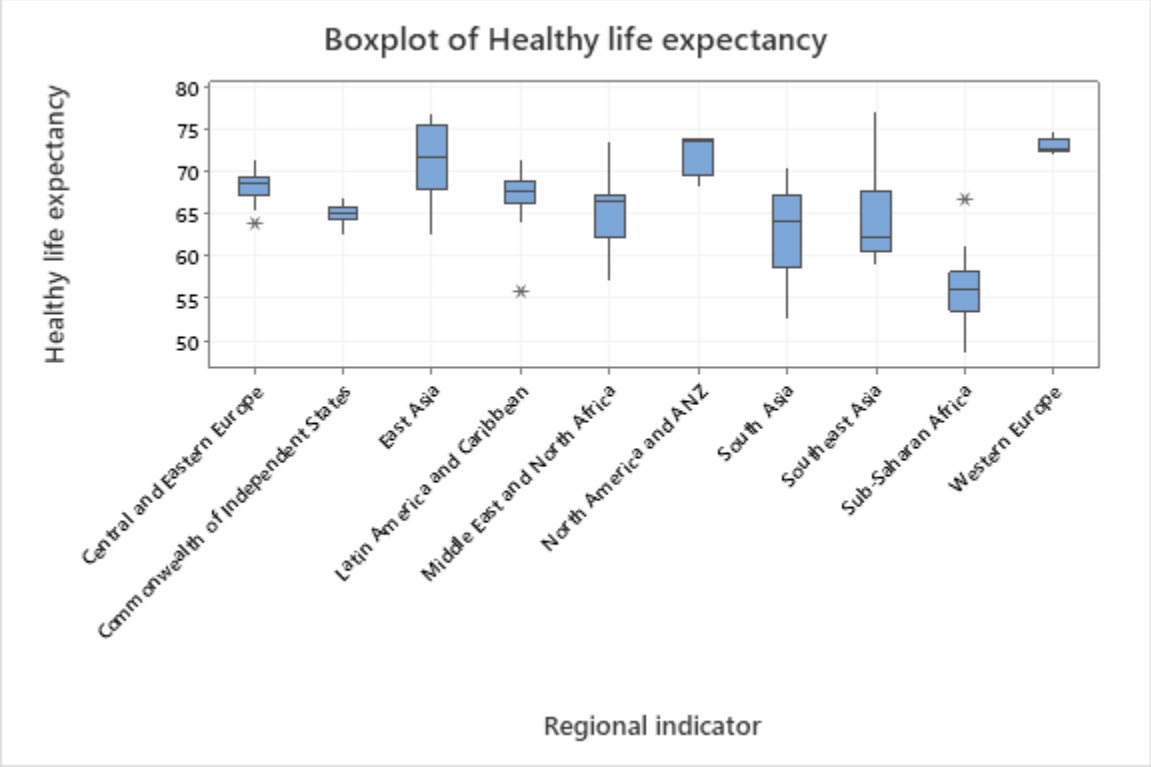
Regional Indicator vs Social Support



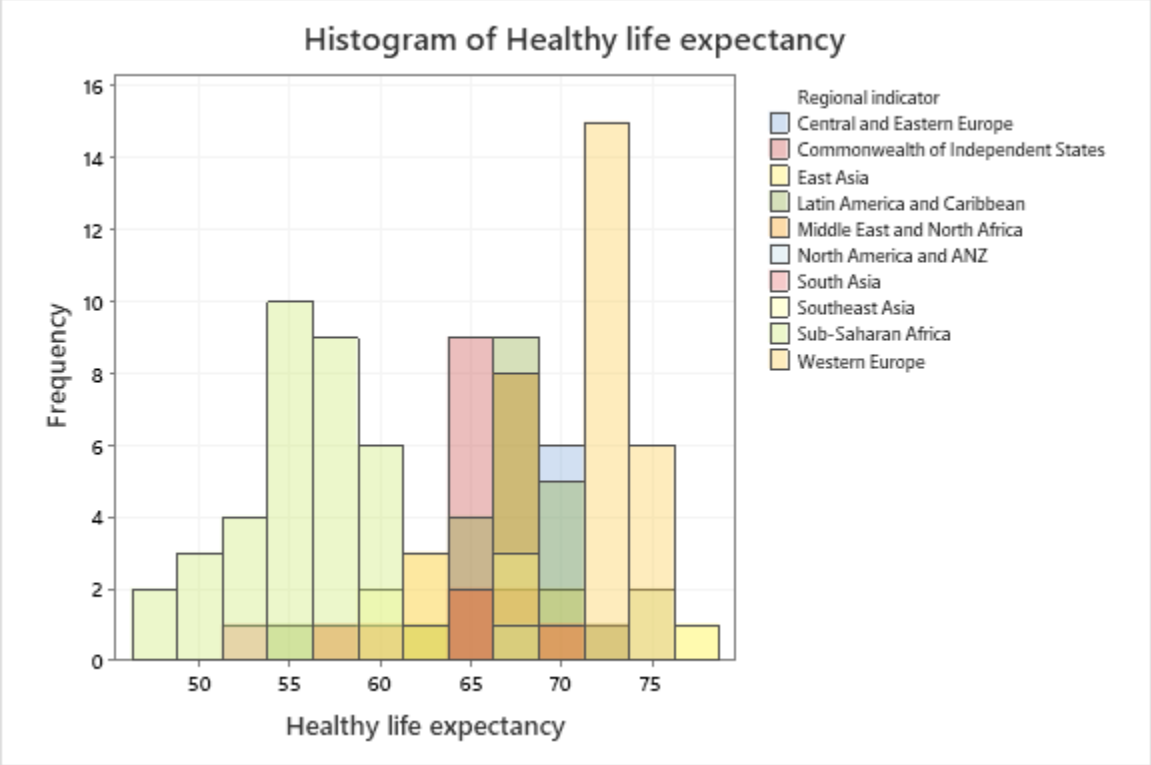
This multiple boxplots examines regional indicator in each area and social support. In glance we can see social support in Western Europe is the highest and social support in South Asia is the lowest. Third quartile in Central and Eastern Europe is greater than the third quartile in Common Wealth of Independent State. First quartile in Latin America and Caribbean is greater than the first quartile of Sub-Saharan Africa. The median of social support in East Asia is 0.85. This graph is slightly symmetric.



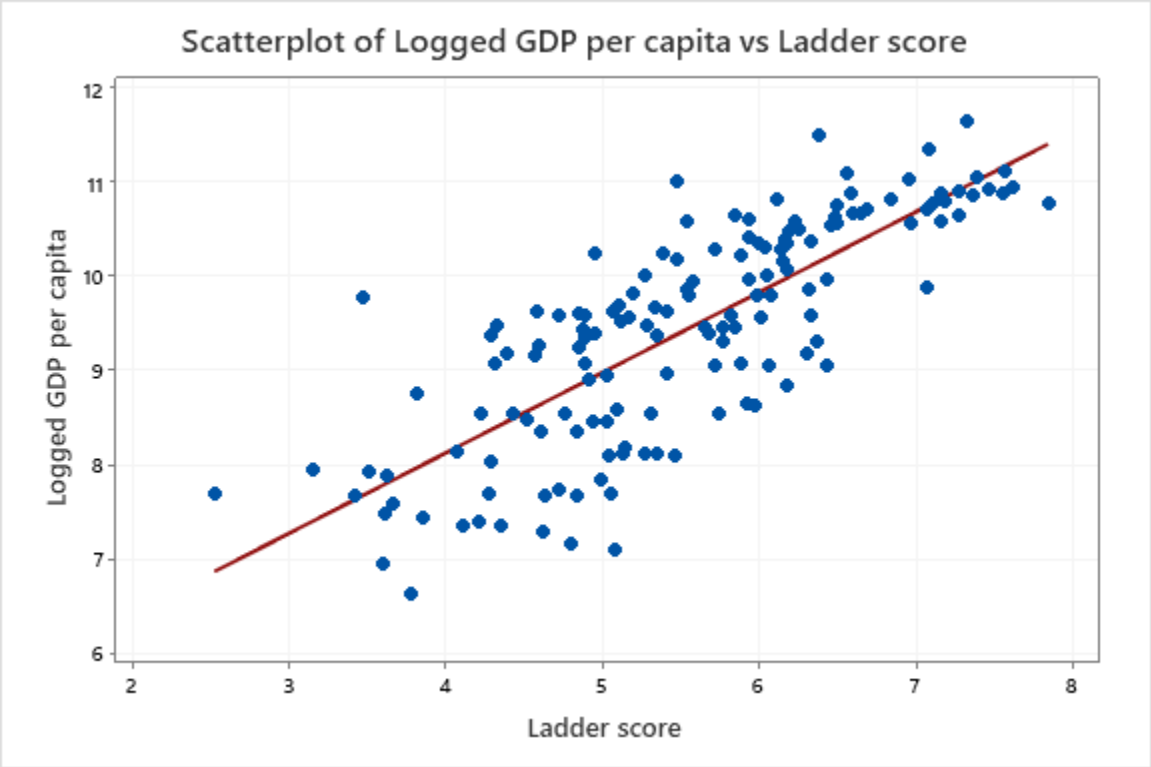
Regional Indicator vs Healthy life expectancy



This multiple boxplots examines regional indicator in each area and healthy life expectancy .In glance we can see healthy life expectancy in Southeast Asia is the highest and healthy life expectancy in Sub-Saharan Africa is the lowest. Third quartile in Central and Eastern Europe is greater than the third quartile in Common Wealth of Independent State. First quartile in Latin America and Caribbean is greater than the first quartile of Sub-Saharan Africa. The median of healthy life expectancy in Common Wealth of Independent States is 65.

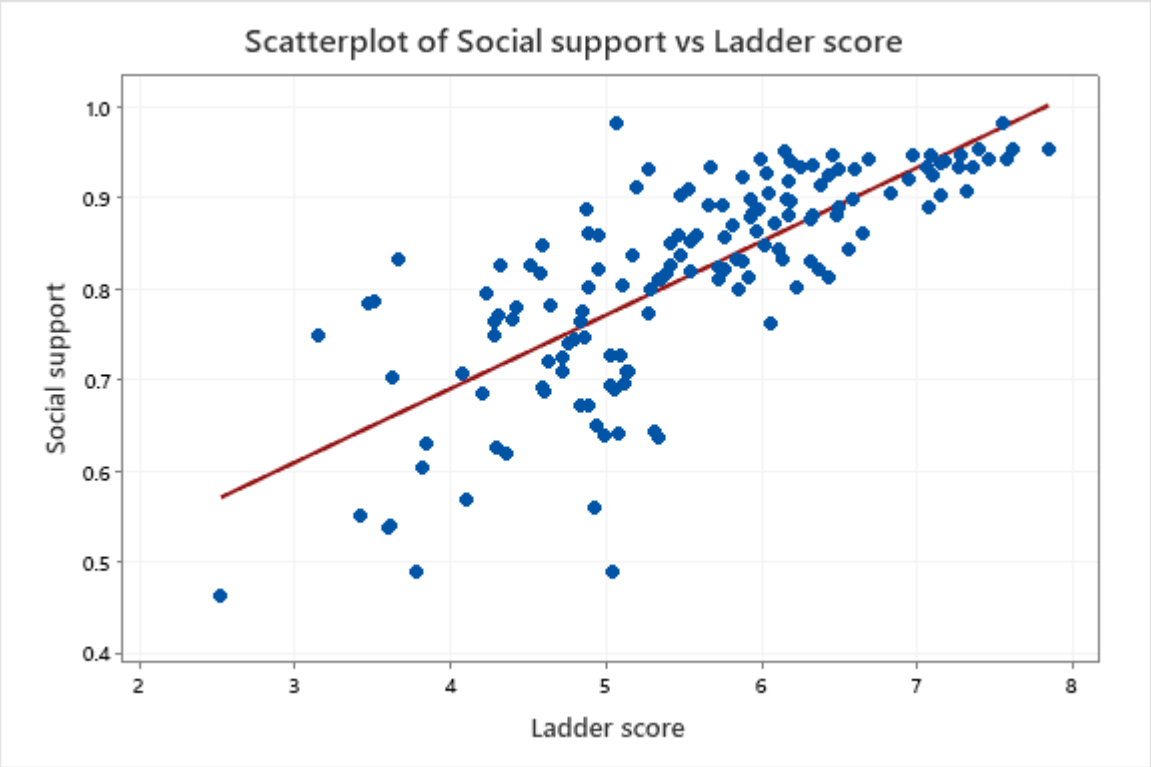


Logged GDP per Capita vs Ladder Score



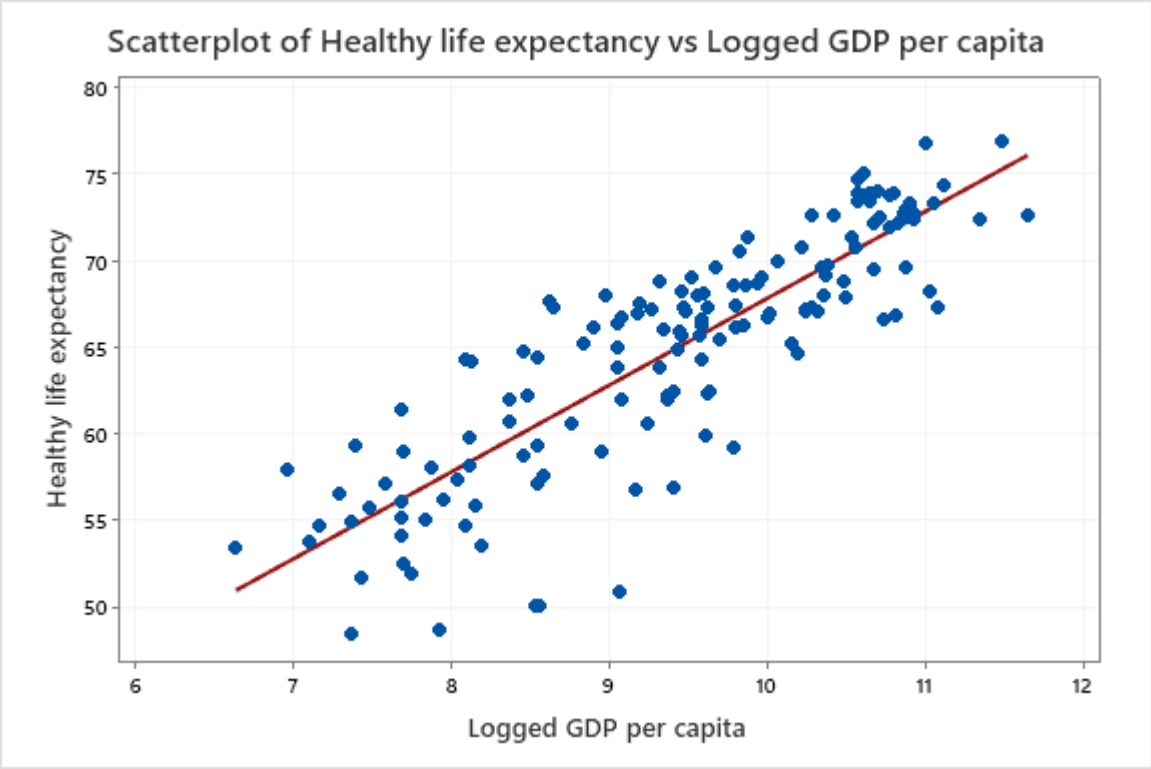
The above graph shows the logged GPD per capita vs ladders score. This graph is moderately positive linear relationship between logged GPD per capita and ladder score. According to the graph it seems like logged GPD per capita is increases when ladders core increased**.**

Social Support vs Ladder Score



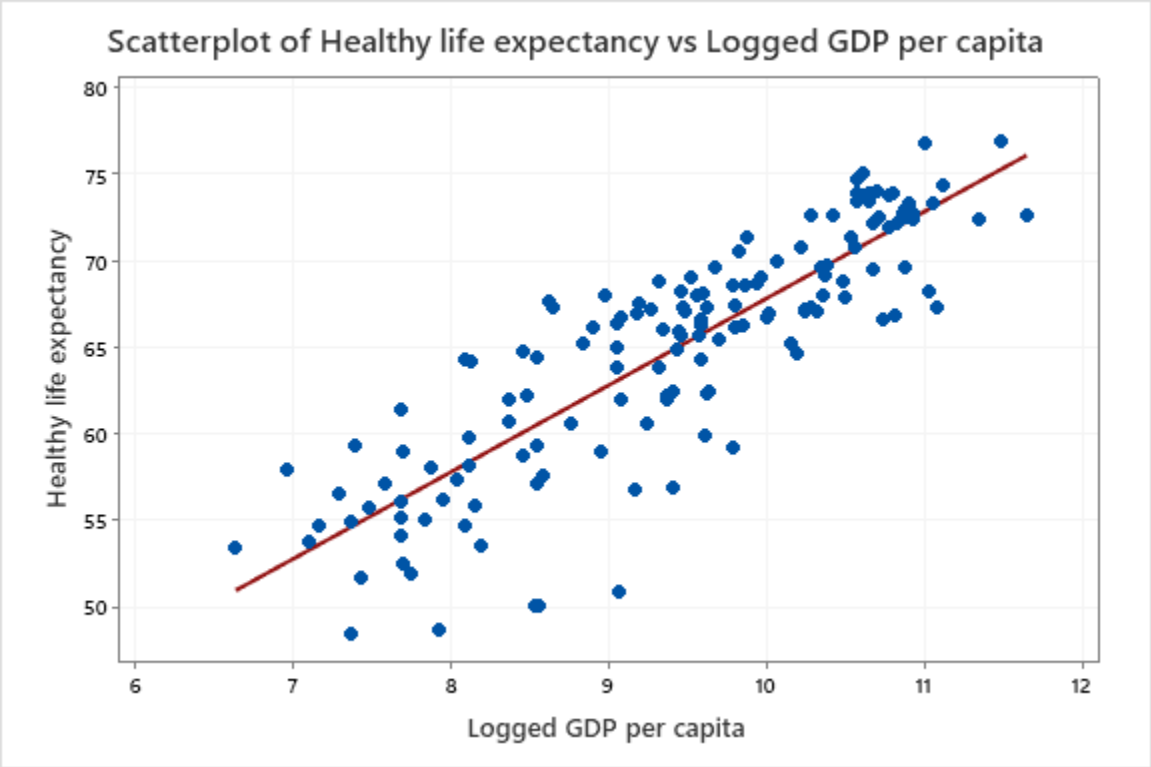
The above graph shows the social support vs ladder score .This graph is moderately positive linear relationship between social support and ladder score. According to the graph it seems like social support is increases when ladder score increased.

Social Support vs Logged GDP per capita



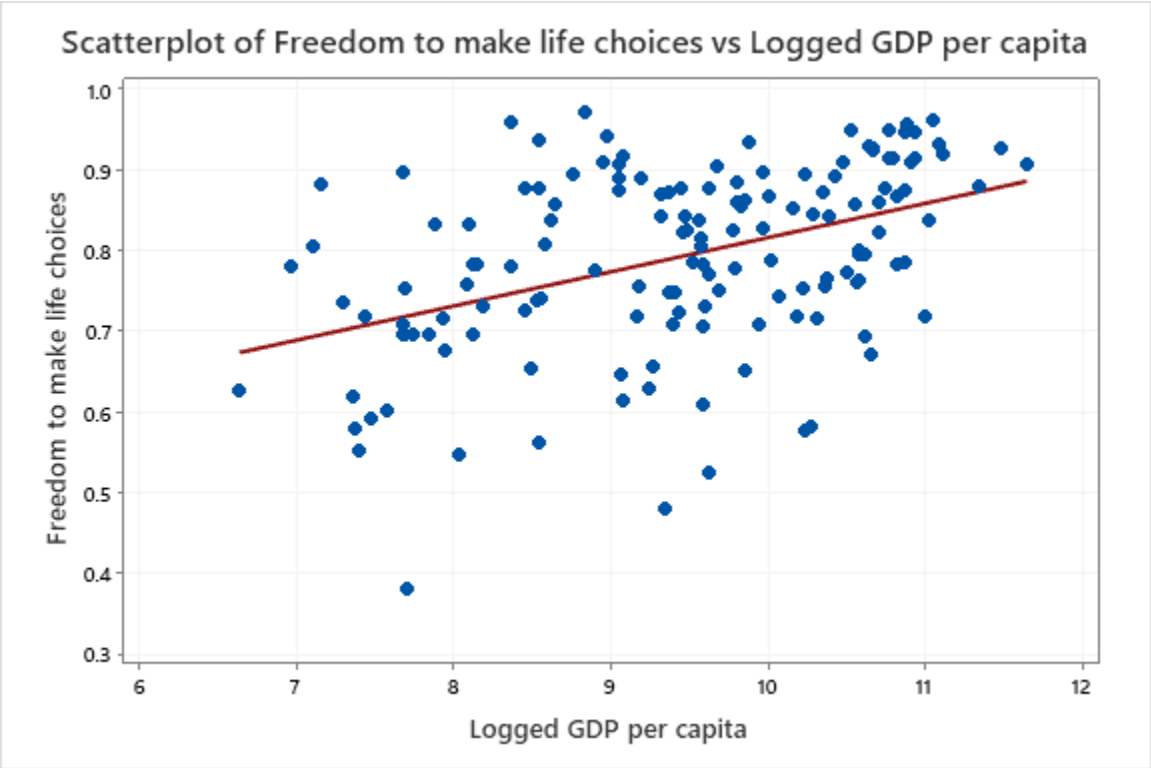
The above graph shows the social support vs Logged GDP per capita. This graph is moderately positive linear relationship between social support and Logged GDP per capita. According to the graph it seems like social support is increases when Logged GDP per capita increased.

Healthy life expectancy vs Logged GDP per capita



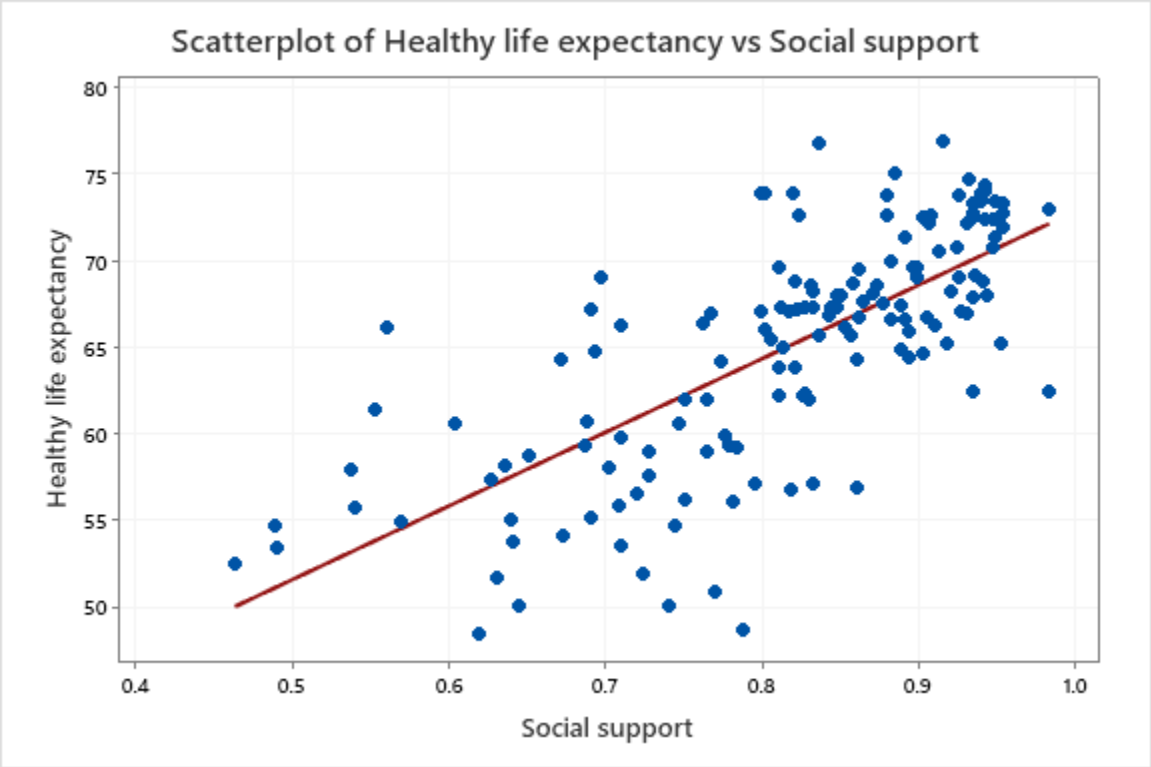
The above graph shows the Healthy life expectancy vs Logged GDP per capita. This graph is moderately positive linear relationship between Healthy life expectancy and Logged GDP per capita. According to the graph it seems like Healthy life expectancy is increases when Logged GDP per capita increased.

Freedom to make life choices VS Logged GDP per capita



The above graph shows the freedom to make life choices vs Logged GDP per capita. This graph is moderately positive linear relationship between freedom to make life choices and Logged GDP per capita. According to the graph it seems like freedom to make life choices is increases when Logged GDP per capita increased.

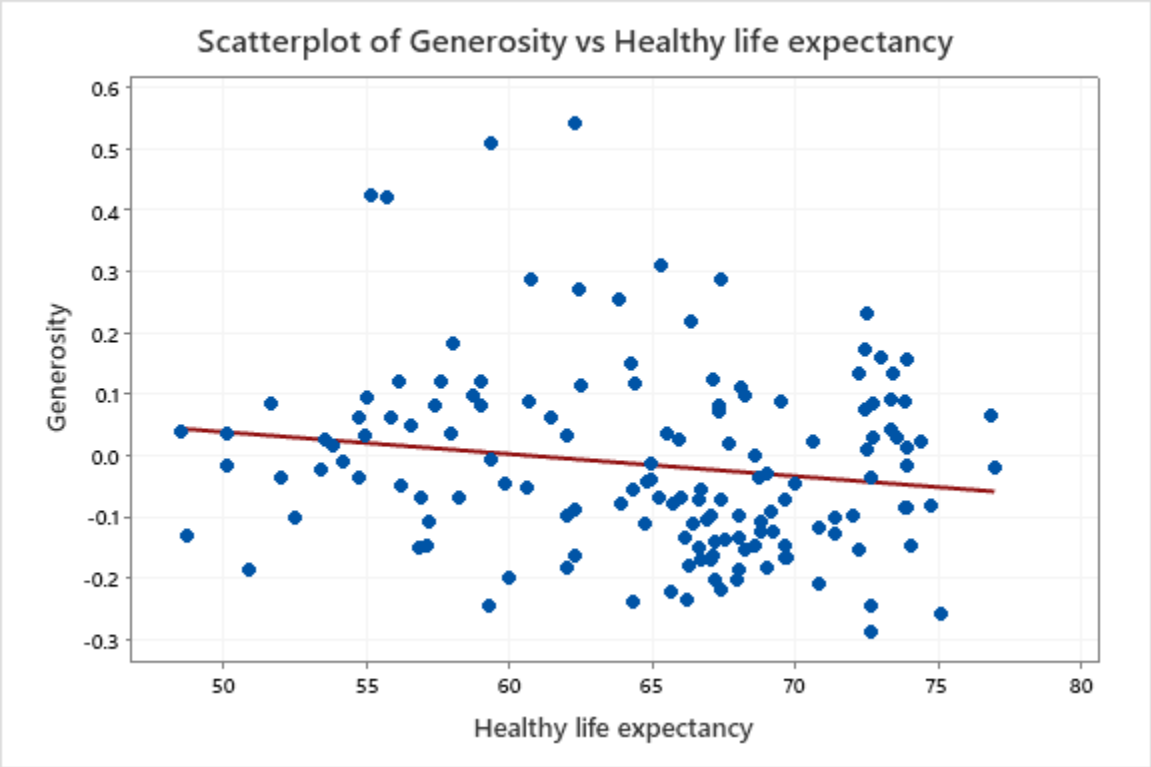
Healthy life expectancy VS social support



The above graph shows the Healthy life expectancy vs social support. This graph is moderately positive linear relationship between Healthy life expectancy and social support.

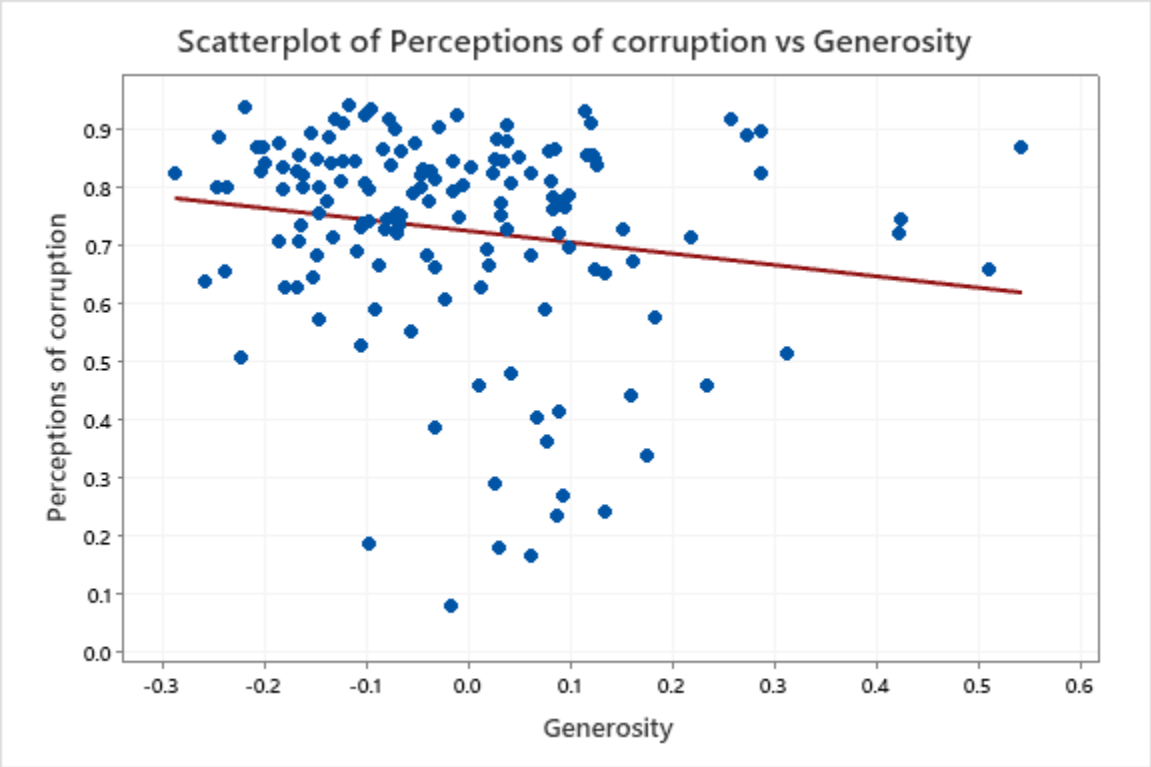
According to the graph it seems like Healthy life expectancy is increases when social support increased.

Generosity vs Healthy life expectancy



The above graph shows the Generosity vs Healthy life expectancy. This graph is moderately negative linear relationship between Generosity vs Healthy life expectancy. According to the graph it seems like generosity decreases when Healthy life expectancy increased.

Generosity vs perception of corruption



The above graph shows the Generosity vs perception of corruption. This graph is moderately negative linear relationship between Generosity vs perception of corruption. According to the graph it seems like perception of corruption decreases when generosity increased.

Conclusion

The world happiness report plays an important role in measuring global happiness. In this study, our findings compelling evidence that trust is a core driver of human happiness, and marketing effectiveness.

Data is collected from people in different countries. Each variable measured reveals a populated-weighted average score on a scale running from 0 to 10 that is tracked over time and compared against other countries. These variables currently include:

real GDP per capita, social support ,healthy life expectancy ,freedom to make life choices ,generosity, perceptions of corruption

Each country is also compared against a hypothetical nation called Dystopia. Dystopia represents the lowest national averages for each key variable and is, along with residual error, used as a regression benchmark. The six metrics are used to explain the estimated extent to which each of these factors contribute to increasing life satisfaction when compared to the hypothetical nation of Dystopia, but they themselves do not have an impact on the total score reported for each country.

These results tend to be predicted by six factors that contribute to whether people view their lives positively.

Discussion:

In this analysis report, we have used number of variables to carry out an accurate report. Unilabiate analysis is used to get better idea on each variable and bivariate analysis is used to highlight the relationships between two variables.COVID-19 has had unprecedented impacts on world emotions, and while countries around the world are seeing increases in negative emotions such as worry and sadness, and a rise in the frequency of stress, their evaluations of life as a whole has shown surprising resilience Mainly this report focuses on world happiness 2021 and specially how covid 19 affected the world happiness.

Reference

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- ✓ **Minitab:**https://support.minitab.com/en-us/minitab/21/help-and-how-to/graphs/scatterplot/interpret-the-results/key-results/?SID=140000

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