N NITTE | N.M.A.M. INSTITUTE OF TECHNOLOGY
EDUCATION TRUST
(An Autonomous Institution affiliated to Visvesvaraya Technological University, Belagavi)
Nitte – 574 110, Karnataka, India

Department of Computer Science and Engineering

(B.E. Computer Science & Engineering Program Accredited by NBA from 2018-19 to 2021-25)

Report on Mini Project

Data analysis and visualization of World Happiness Index-2022

Course Code: 21CSA31

Course Name: R Programming

Semester: III SEM   Section: A

Submitted To:

Dr. Anisha P Rodrigues
Associate Professor
Department of Computer Science
and Engineering

Submitted By:
Anvitha Shetty(4NM21CS029)
Apeksha S Shetty(4NM21CS031)
Dhanya(4NM21CS055)

Date of submission:
17 January 2023

Signature of Course Instructor

ABSTRACT

The World Happiness Report is a publication that contains articles and rankings of national happiness, based on respondent ratings of their own lives, which the report also correlates with various life factors. In July 2011, the UN General Assembly adopted resolution 65/309 Happiness: Towards a Holistic Definition of Development inviting member countries to measure the happiness of their people and to use the data to help guide public policy. World happiness report is being issued since 2012. The first World Happiness Report was released on April 1, 2012 as a foundational text for the UN High Level Meeting: Well-being and Happiness: Defining a New Economic Paradigm, drawing international attention. The first report outlined the state of world happiness, causes of happiness and misery, and policy implications highlighted by case studies. In 2013, the second World Happiness Report was issued, and in 2015 the third. Since 2016, it has been issued on an annual basis on the 20th of March, to coincide with the UN's International Day of Happiness. The data obtained from this report can be analysed based on various factors. The Data analyzation and visualization of world happiness index gives us various paradigms of living in a particular country.

TABLE OF CONTENTS

INTRODUCTION

The World Happiness Index report is being issued since 2012. Experts have analyzed the various aspects of data and provided various useful information that could lead a country to a better and a happy life. In today's world, physical facilities and materialistic things are given much importance rather than basic facilities. Although, having more facilities and luxury do impact the happiness of a person and increases the overall GDP per capita of a country, it does not affect much as the ethical and peaceful factors of life. That is why, along with taking GDP as one of the factors, the other factors such as social support, freedom to make life choices, perceptions of corruption, healthy life expectancy and generosity have also been considered to arrive at the final happiness scores of countries. In our report, we have discussed the importance of each factor towards the happiness score and also compared them. We have categorized our data set according to various regions and continents. The analyzation of this data set, gives us important points to improve the happiness score. It also gives us a clear picture of lifestyle of each and every country and tells us about the field in which a particular country is lagging behind. The various factors affecting the happiness of a country can be carefully observed by plotting certain graphs. Our report also includes, visualization of world happiness index. We have arrived at useful conclusions and provided helpful results. Our dataset provides a clear-cut idea on how happiness score is measured taking into account the most important factors. Recent technological advances have opened new possibilities for reliably measuring and explaining the happiness of people around the world. For example, machine learning techniques now allow researchers to analyse text quickly by looking for certain patterns that they can then categorise. Using this method, social media content makes it possible to record and classify people's expressed feelings, providing a real-time metric of how wellbeing is changing (WHR, 2022). Our problem Statement is based on the survey done in the above manner.

PROBLEM STATEMENT

Aim: to analyze and visualize world happiness index-2022.

OBJECTIVES

- The goal of this project is to analyze and visualize the survey done in almost 150 countries regarding the peaceful and happy life led by the people and to understand how the key factors are related to the Happiness Score of 146 countries.
- To understand, the relationship between Happiness Score and Human Development Index (HDI).
- Since it was first published, the World Happiness Report has been based on two key ideas: 1)that happiness or life evaluation can be measured through opinion surveys and 2)that we can identify key determinants of well-being and thereby explain the patterns of life evaluation across countries.
- To provide useful information regarding the improvements in life expectancy rate, social support and GDP per capita.
- To understand and have a clear picture of the political and economical situations of the world.
- To understand and enhance individual happiness, community well-being, social justice, economic equality, and environmental sustainability.
- To understand people's perception of the world since it is a opinion based survey. We can also find out about the satisfaction of the people living in their own countries.

METHODOLOGY

The data set for this project is taken from the website Kaggle. We installed various packages such as "xlsx","dplyr","ggplot2","plotrix" and "rworldmap".
First we read the excel file using "xlsx" package and then we converted it into a csv file. For proper analyzations we added two more columns. One of the columns containing regions of various countries and in second column we grouped these various regions into continents.
We obtained the summary of the data set.

X	RANK	Country	Happiness.score
Min. : 001.00	Min. : 001.00	Length : 146	Min. : 2.404
1st Qu. : 037.25	1st Qu. : 037.25	Class : character	1st Qu. : 4.889
Median : 073.50	Median : 073.50	Mode : character	Median : 5.569
Mean : 073.50	Mean : 073.50		Mean : 5.554
3rd Qu. : 109.75	3rd Qu. : 109.75		3rd Qu. : 6.305
Max. : 146.00	Max. : 146.00		Max. : 7.821

Whisker.high	Whisker.low	Dystopia..1.83....residual	Explained.by..GDP.per.capita
Min. : 2.469	Min. : 2.339	Min. : 0.1874	Min. : 0.000
1st Qu. : 5.006	1st Qu. : 4.755	1st Qu. : 1.5555	1st Qu. : 1.096
Median : 5.680	Median : 5.453	Median : 1.8946	Median : 1.445
Mean : 5.674	Mean : 5.434	Mean : 1.8318	Mean : 1.410
3rd Qu. : 6.449	3rd Qu. : 6.190	3rd Qu. : 2.1529	3rd Qu. : 1.785
Max. : 7.886	Max. : 7.756	Max. : 2.8444	Max. : 2.209

Explained.by..Social.support	Explained.by..Healthy.life.expectancy
Min. : 0.0000	Min. : 0.0000
1st Qu. : 0.7321	1st Qu. : 0.4630
Median : 0.9578	Median : 0.6214
Mean : 0.9058	Mean : 0.5861
3rd Qu. : 1.1147	3rd Qu. : 0.7201
Max. : 1.3199	Max. : 0.9418

Explained.by..Freedom.to.make.life.choices	Explained.by..Generosity
Min. : 0.0000	Min. : 0.00000
1st Qu. : 0.4405	1st Qu. : 0.08872
Median : 0.5436	Median : 0.13242
Mean : 0.5172	Mean : 0.14737
3rd Qu. : 0.6258	3rd Qu. : 0.19755
Max. : 0.7400	Max. : 0.46793

Explained.by..Perceptions.of.corruption	Region	Continent
Min. : 0.00000	Length : 146	Length : 146
1st Qu. : 0.06809	Class : character	Class : character
Median : 0.11946	Mode : character	Mode : character
Mean : 0.15476		
3rd Qu. : 0.19821		
Max. : 0.58683		

hp1=aggregate(new_db[,c(8:13)],list(new_db$Continent),mean)

When we run this code, we get a clear idea on how happiness depends on various parameters like GDP per capita, social support, Healthy life expectancy, freedom to make life choices, generosity and perception of corruption.

aggregate(): It is used to get the summary statistics of the data by grouping. The statistics include mean, min, sum etc. Data frame is the input data. In order to use the aggregate function for mean in R, we need to specify the numerical variable on the first argument, the categorical (as a list) on the second and the function to be applied (in this case mean) on the third.

- Following are the graphs used for analyzing the data set:
- Stacked bar graph:

   barplot(Values,main="Factors_affecting_happiness_score",names.arg=factors,xlab="Factors",ylab="Score",col=colors)

   legend("topright",cont,cex=1.3,fill=colors)

   R can draw both vertical and Horizontal bars in the bar chart. In bar chart each of the bars can be given different colors. Bar plots can be created in R using the barplot() function. We can supply a vector or matrix to this function. If we supply a vector, the plot will have bars with their heights equal to the elements in the vector.

- Scatterplots:

   The package used for these graphs is "ggplot2". It is a plotting package that provides helpful commands to create complex plots from data in a data frame. It is a system for declaratively creating graphics, based on the grammar of graphics. We have to provide the data, mention how to map variables to aesthetics and the graphical primitives to be used.

   geom_point(): This function adds a layer of points to our plot, which creates a scatterplot. ggplot2 comes with many geom functions that each add a different type of layer to a plot.

   aes(): It is a quoting function. This means that its inputs are quoted to be evaluated in the context of the data. It will define the parameters for x and y axis.

   1. Happiness score vs GDP per capita

      ggplot(data=new_db)+geom_point(mapping=aes(x=Happiness.score,y=Explained.by..GDP.per.capita))

   2. Happiness score vs social support

7

ggplot(data=new_db)+geom_point(mapping=aes(x=Happiness.score,y=Explained.by..Social.support))

3. Happiness score vs healthy life expectancy

ggplot(data=new_db)+geom_point(mapping=aes(x=Happiness.score,y=Explained.by..Healthy.life.expectancy))

4. Happiness score vs freedom to make life choices

ggplot(data=new_db)+geom_point(mapping=aes(x=Happiness.score,y=Explained.by..Freedom.to.make.life.choices))

5. Happiness score vs generosity

ggplot(data=new_db)+geom_point(mapping=aes(x=Happiness.score,y=Explained.by..Generosity))

6. Happiness score vs perceptions of corruption

ggplot(data=new_db)+geom_point(mapping=aes(x=Happiness.score,y=Explained.by..Perceptions.of.corruption))

▪ 3D pie chart:

The package used is "plotrix". This package is intended to provide a method for getting many sorts of specialized plots quickly, yet allow easy customization of those plots without learning a great deal of specialized syntax.

pie3D(x,labels=piepercent,main="Continents_Happiness_Score",col=rainbow(length(x)),explode=0.1,border="white")

legend("topright",labels,cex=0.8,fill=rainbow(length(x)))

pie3D(): In this function, labels are used to give percentages to various continents and the main gives title to the pie chart. A variety of colors can be given to various slices using col. explode is used to give space between the slices of 3d pie chart.

legend(): Legends are useful to add more information to the plots and enhance the user readability. It involves the creation of titles, indexes, placement of plot boxes in order to create a better understanding of the graphs plotted.

▪ Bar graph:

ggplot(hp,aes(x=Group.1,y=Happiness.score,fill=Group.1))+geom_bar(stat="identity") +ggtitle("Happiness Score of Continent") + ylab("Happiness.score") + xlab("Continent")

geom_bar(): It makes the height of the bar proportional to the number of cases in each

group (or if the weight aesthetic is supplied, the sum of the weights). If we want the heights of the bars to represent values in the data, we can also use geom_col() instead.

ggtitle(): It is used to give the title to our graph.

xlab(): We can give x-axis parameters using this function.

ylab(): We can give y-axis parameters using this function.

- Box plot:

ggplot(new_db,aes(x=Continent,y=Happiness.score,color=Continent)) + geom_boxplot() + ggtitle("Happiness score for Continents")

The boxplot compactly displays the distribution of a continuous variable.

- World map:

d<-data.frame(country=new_db$Country,value= new_db$Happiness.score)
n<-joinCountryData2Map(d, joinCode = "NAME", nameJoinColumn = "country")
mapCountryData(n, nameColumnToPlot = "value",mapTitle = "World Map for Happiness score 2022",colourPalette = "terrain")

We used "rworldmap" package and loaded it into library. It enables mapping of country level and gridded user datasets. Country Level Data can be joined to a map using joinCountryData2Map, then mapped using mapCountryData. These functions can cope with a range of country names and country codes.

joinCountryData2Map(): This function joins user data referenced by country codes or names to an internal map, ready for plotting using mapCountryData.

mapCountryData(): This function provides various colors to distinguish happiness scores of countries.

IMPLEMENTATION

```
# Get the path.
print (getwd ())
# Set the path.
setwd ("C:/Users/Dhanya/OneDrive/TEAM 3")
# Load the library to get the excel file.
library("xlsx")
# Read the excel file.
data=read.xlsx ("R_DATASET.xlsx", sheetIndex=1)
# Convert into csv file.
write.csv(data,"data.csv")
# Reading the csv file.
db=read.csv("data.csv")
# Our source data set.
View(db)
# Regions of various countries.
Region=c ("Western    Europe", "Western      Europe", "Western Europe", "Western Europe",
"Western Europe", "Western Europe", "Western Europe", "Western Europe", "Middle East",
"Australia and New Zealand", "Western Europe", "Australia and New Zealand", "Western Europe",
"Western Europe", "North America", "North America", "Western Europe", "Central Europe",
"Western Europe", "Western Europe", "Middle East"," Central Europe", "South America", "Middle
East", "Middle East", "Southeast Asia", Southeast Asia", Eastern Europe", "Western Europe",
"South America", "Central Europe", "Eastern Europe", "Central Europe", "Eastern Europe", "Central
Europe", "Eastern Europe", "Central America", "South America", "Central America", "Central Asia",
"Middle East", "Eastern Europe", "Eastern Europe", "South America", "Central America", "North
America", "Eastern Europe", "Central Europe", "Central America", "Middle East"," Central Europe",
"Eastern Africa", "Central Asia", "East Asia", "Central America", "Western Europe", "South
America", "Eastern Europe", "East Asia", Southeast Asia", Southeast Asia", Eastern Europe",
"South America", "Central Asia", Eastern Europe", "South America", "Western Europe", "Central
Asia", "South America", "Southeast Asia", "South America", "East Asia", "South America", "South
America", "Eastern Europe", "South America", "Southeast Asia", "Central Asia", "Middle East",
"Eastern Europe", "East Asia", Eastern Europe", "Central Asia", "South Asia", Eastern Europe",
"North Africa", "Southeast Asia", "Western Africa", "Eastern Europe", "Eastern Europe", "South
Africa", "West Asia", "Western Africa", "South Asia", Southeast Asia", "North Africa", "Western
Africa", "Eastern Europe", "Central Africa", "North Africa"," South Africa", "Western Africa",
"Western Africa", "North Africa", "Eastern Europe", "Central Africa", "Middle East", "South
America", "Western Africa", "Middle East", "Western Africa", "Eastern Europe", "Western Africa",
"Southeast Asia", "Western Africa", "Eastern Africa", "Eastern Africa", "Western Africa", "Eastern
Africa", "North Africa"," South Asia", "Middle East", "Western Africa"," South Africa"," South
Africa", "Southeast Asia", "South Asia", Eastern Africa", "Eastern Africa", "North Africa", "Eastern
Africa", "Middle East", "Western Africa", "Middle East", "Western Africa"," South Asia", "South
Africa"," South Africa", "Eastern Africa", "Western Africa"," South Africa"," South Africa", "Central
Africa"," South Africa", "Middle East"," Central Asia")
# Adding regions to our data set.
new_db=cbind (db, Region)
# Our new data set with regions column.
View(new_db)
```

```r
# Load the library to use some functions to categorize our data.
library("dplyr")
# Printing total no of regions.
distinct (new_db, Region)
# Creating a continents column.
new_db$Continent=NA
# Data set with continents column.
View(new_db)
# Assigning various regions to their respective continents.
new_db$Continent [which (new_db$Region %in% c ("Australia and New Zealand"))]<-"Australia"
new_db$Continent [which (new_db$Region %in% c ("North America", "Central America"))]<-
"North America"
new_db$Continent [which (new_db$Region %in% c ("Western Europe", "Central Europe", "Eastern
Europe"))]<-"Europe"
new_db$Continent [which (new_db$Region %in% c ("North Africa", "Western Africa", "Eastern
Africa"," South Africa", "Central Africa"))]<-"Africa"
new_db$Continent [which (new_db$Region %in% c ("East Asia", Southeast Asia", "South Asia",
"West Asia", "Central Asia", "Middle East"))]<-"Asia"
new_db$Continent [which (new_db$Region %in% c ("South America"))]<-"South America"
# Our new data set with continents column.
View(new_db)
# Summary of our new data set.
summary(new_db)
# Further categorization of data set according to continents.
hp=aggregate (new_db [, c (2,4)], list(new_db$Continent), mean)
# Happiness scores of continents.
View(hp)
# Top ten countries.
View(head(new_db,10))
# Bottom ten countries.
View(tail(new_db,10))
# Factors affecting happiness score.
hp1=aggregate (new_db [, c (8:13)], list(new_db$Continent), mean)
# Data set of continents with factors.
View(hp1)
# Creating a stacked bar chart showing the impact of various factors on happiness score.
colors=c("Pink","blue","green","yellow","orange","red")
factors=c("GDP","Support","Life","Free","Generous","Corrupt")
cont=c ("Africa","Asia","Australia","Europe","North America", "South America")
Values=matrix(c(hp1[[2]][[1]],hp1[[2]][[2]],hp1[[2]][[3]],hp1[[2]][[4]],hp1[[2]][[5]],
hp1[[2]][[6]],hp1[[3]][[1]],hp1[[3]][[2]],hp1[[3]][[3]],hp1[[3]][[4]],hp1[[3]][[5]],
hp1[[3]][[6]],hp1[[4]][[1]],hp1[[4]][[2]],hp1[[4]][[3]],hp1[[4]][[4]],hp1[[4]][[5]],
hp1[[4]][[6]],hp1[[5]][[1]],hp1[[5]][[2]],hp1[[5]][[3]],hp1[[5]][[4]],hp1[[5]][[5]],
```

```
hp1[[5]][[6]],hp1[[6]][[1]],hp1[[6]][[2]],hp1[[6]][[3]],hp1[[6]][[4]],hp1[[6]][[5]],
hp1[[6]][[6]],hp1[[7]][[1]],hp1[[7]][[2]],hp1[[7]][[3]],hp1[[7]][[4]],hp1[[7]][[5]],
hp1[[7]][[6]]),nrow=6)
png(file="Factors_stacked_bar_graph.png")
barplot(Values,main="Factors_affecting_happiness_score",names.arg=factors,xlab="Factors",ylab="Score",col=colors)
legend("topright",cont,cex=1.3,fill=colors)
dev.off()
# Load the library to execute more graphs.
library("ggplot2")
# Graph of happiness score vs GDP per capita.
png(file="GDP_per_capita.png")
ggplot(data=new_db)+geom_point(mapping =
aes(x=Happiness.score,y=Explained.by..GDP.per.capita))
dev.off()
# Graph of happiness score vs social support.
png(file="Social_Support.png")
ggplot(data=new_db)+geom_point(mapping =
aes(x=Happiness.score,y=Explained.by..Social.support))
dev.off()
# Graph of happiness score vs healthy life expectancy.
png(file="Healthy_life_expectancy.png")
ggplot(data=new_db)+geom_point(mapping =
aes(x=Happiness.score,y=Explained.by..Healthy.life.expectancy))
dev.off()
# Graph of happiness score vs freedom to make life choices.
png(file="Freedom_to_make_life_choices.png")
ggplot(data=new_db)+geom_point(mapping =
aes(x=Happiness.score,y=Explained.by..Freedom.to.make.life.choices))
dev.off()
# Graph of happiness score vs generosity.
png(file="Generosity.png")
ggplot(data=new_db)+geom_point(mapping =
aes(x=Happiness.score,y=Explained.by..Generosity))
dev.off()
# Graph of happiness score vs perceptions of corruption.
png(file="Perceptions_of_Corruption.png")
ggplot(data=new_db)+geom_point(mapping =
aes(x=Happiness.score,y=Explained.by..Perceptions.of.corruption))
dev.off()
# Plotting a 3D pie chart (Continents).
library(plotrix)
x=c(4.527645,5.360067,7.180950,6.369605,6.375938,5.850085)
```

```r
labels=c ("Africa","Asia","Australia","Europe","North America", "South America")
piepercent=round(100*x/sum(x),1)
png(file="Continents_Pie_Chart.png")
pie3D(x,labels=piepercent,main="Continents_Happiness_Score",col=rainbow(length(x)),explode
=0.1,border="white")
legend("topright",labels,cex=0.8,fill=rainbow(length(x)))
dev.off ()
# Bar graph of Happiness score of the continents.
png(file="Continents_bar_graph.png")
ggplot(hp,aes(x=Group.1,y=Happiness.score,fill=Group.1)) + geom_bar(stat="identity")
+ggtitle("Happiness Score of Continent") + ylab("Happiness.score") + xlab("Continent")
dev.off()
# Box plot of happiness score of continents.
png(file="Continents_box_plot.png")
ggplot(new_db,aes(x=Continent,y=Happiness.score,color=Continent)) + geom_boxplot() +
ggtitle("Happiness score for Continents")
dev.off()
# Load the library to plot a world map.
library("rworldmap")
# Plot the happiness score of various countries in the world map.
png(file="World_map.png")
d<-data.frame(country = new_db$Country,value = new_db$Happiness.score)
n<-joinCountryData2Map(d, joinCode = "NAME", nameJoinColumn = "country")
mapCountryData(n, nameColumnToPlot = "value",mapTitle = "World Map for Happiness score
2022",colourPalette = "terrain")
dev.off()
# THANK YOU.
```

RESULTS AND DISCUSSIONS

For easy and better understanding of our data set, we obtained a data set of continents and their average rank.

	Group.1	RANK	Happiness.score
1	Africa	115.95000	4.527645
2	Asia	79.85000	5.360067
3	Australia	11.00000	7.180950
4	Europe	41.46512	6.369605
5	North America	37.75000	6.375938
6	South America	60.92308	5.850085

Various continents with factors affecting happiness score:

	Group.1	Explained.by..GDP.per.capita	Explained.by..Social.support	Explained.by..Healthy.life.expectancy
1	Africa	0.994145	0.6284488	0.3748752
2	Asia	1.441149	0.8996879	0.6155117
3	Australia	1.875965	1.2190089	0.7622103
4	Europe	1.750393	1.1082668	0.7164757
5	North America	1.486219	0.9843366	0.6304830
6	South America	1.354029	1.0121621	0.6603975

	Group.1	Explained.by..Freedom.to.make.life.choices	Explained.by..Generosity	Explained.by..Perceptions.of.corruption
1	Africa	0.4125453	0.1478242	0.1248206
2	Asia	0.5365454	0.1660935	0.1528002
3	Australia	0.6781247	0.2511351	0.4120243
4	Europe	0.5573654	0.1361207	0.1872212
5	North America	0.6217308	0.1435565	0.1658012
6	South America	0.5580370	0.1119773	0.0991390

Happiness scores of bottom ten and top ten countries:

RANK	Country	Happiness.score	RANK	Country	Happiness.score
1	Finland	7.8210	137	Zambia	3.7598
2	Denmark	7.6362	138	Malawi	3.7504
3	Iceland	7.5575	139	Tanzania	3.7024
4	Switzerland	7.5116	140	Sierra Leone	3.5740
5	Netherlands	7.4149	141	Lesotho	3.5118
6	Luxembourg	7.4040	142	Botswana	3.4711
7	Sweden	7.3843	143	Rwanda	3.2682
8	Norway	7.3651	144	Zimbabwe	2.9951
9	Israel	7.3638	145	Lebanon	2.9553
10	New Zealand	7.1998	146	Afghanistan	2.4038

Various graphs were obtained from world happiness index dataset.

1. First one is a stacked-bar graph with factors affecting happiness score along x-axis and all six of the continents stacked along the y-axis.

Factors_affecting_happiness_score
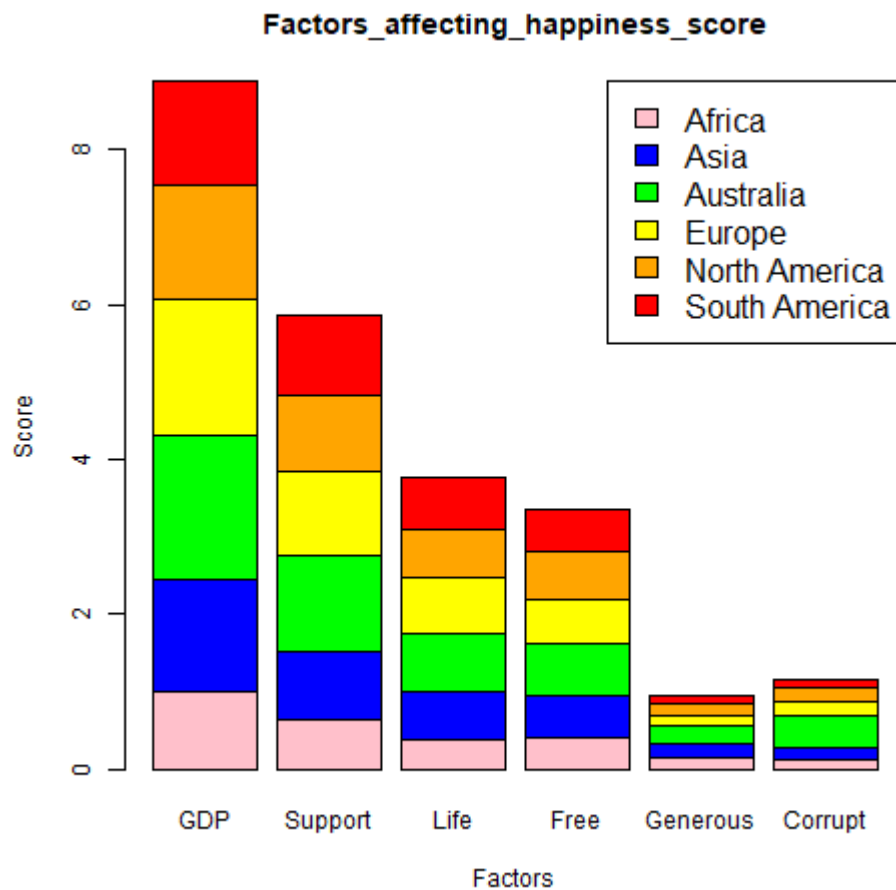
From this graph, we can conclude that GDP is infact one of the major factor affecting the happiness score of countries. We can also note that, Australia is leading in all the factors. It surpasses all other continents by a high margin in the field of perception of corruption.

Below are the graphs of happiness score vs various other factors.
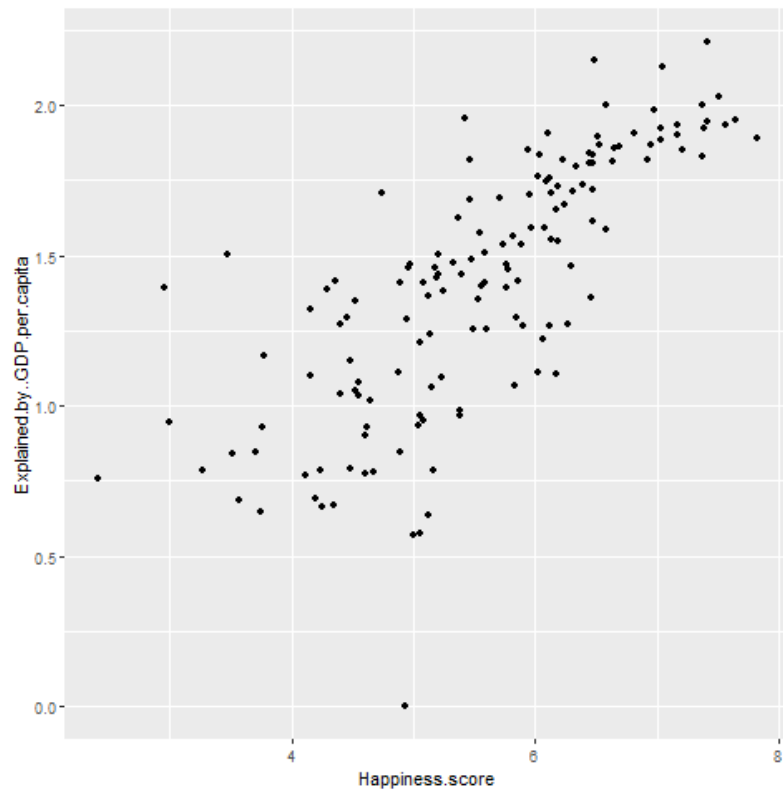
2.Happiness score explained by GDP per capita.
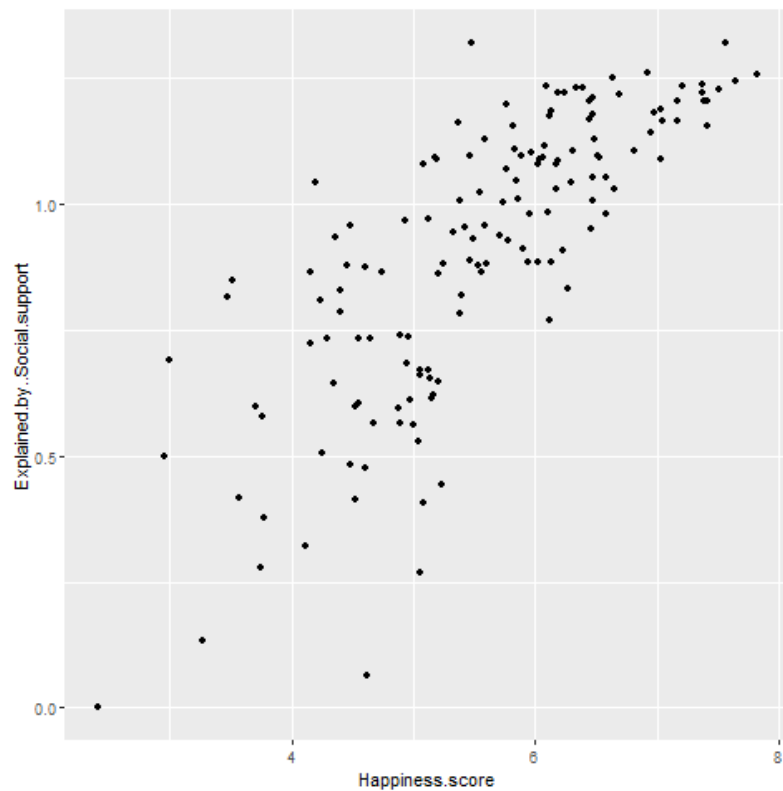
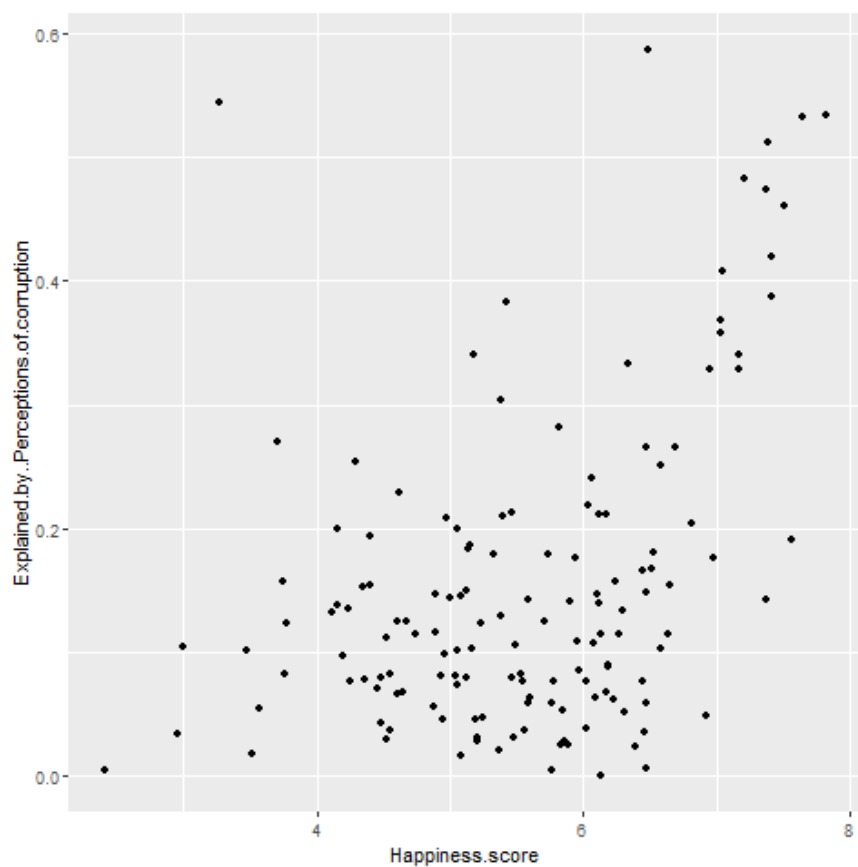3.Happiness score explained by social support.
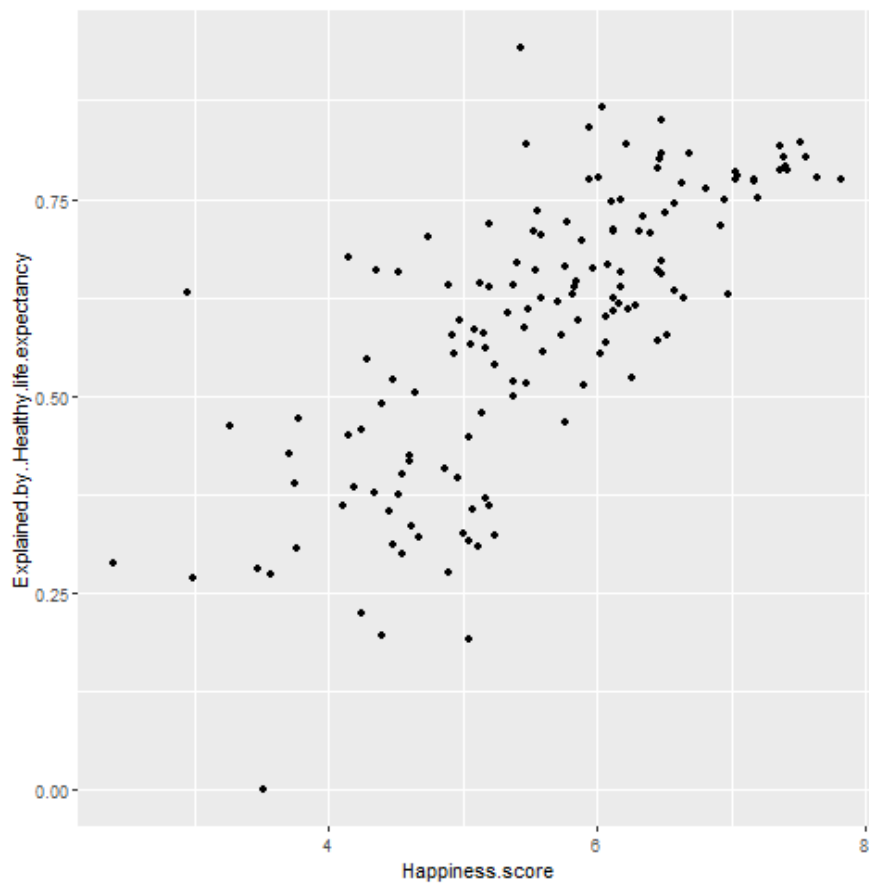
4.Happiness score explained by healthy life expectancy.
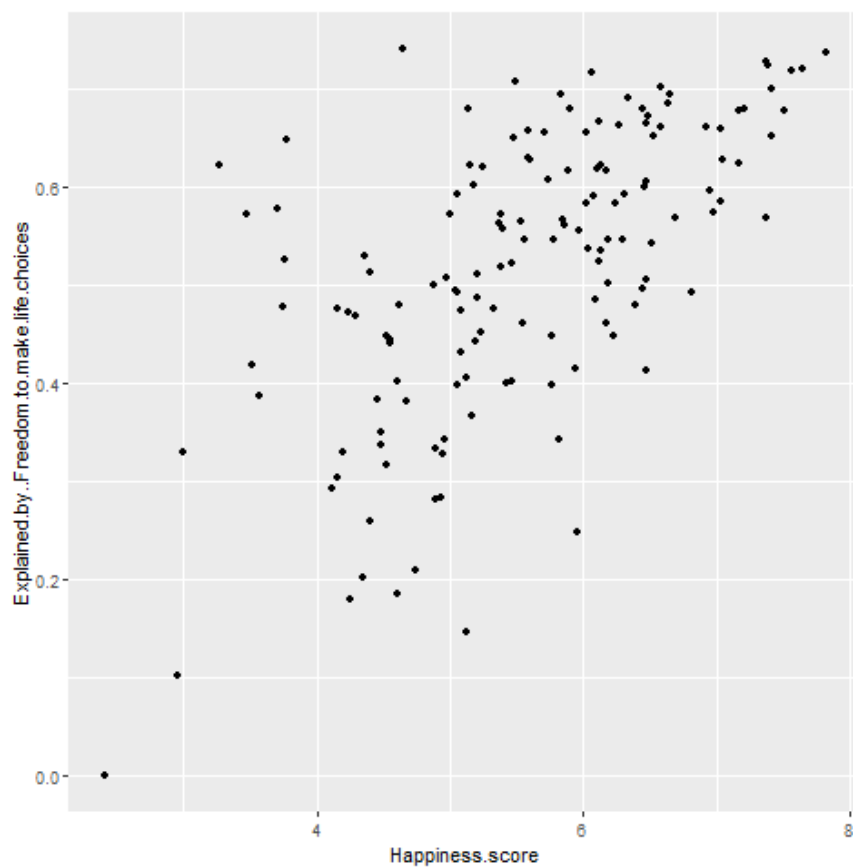
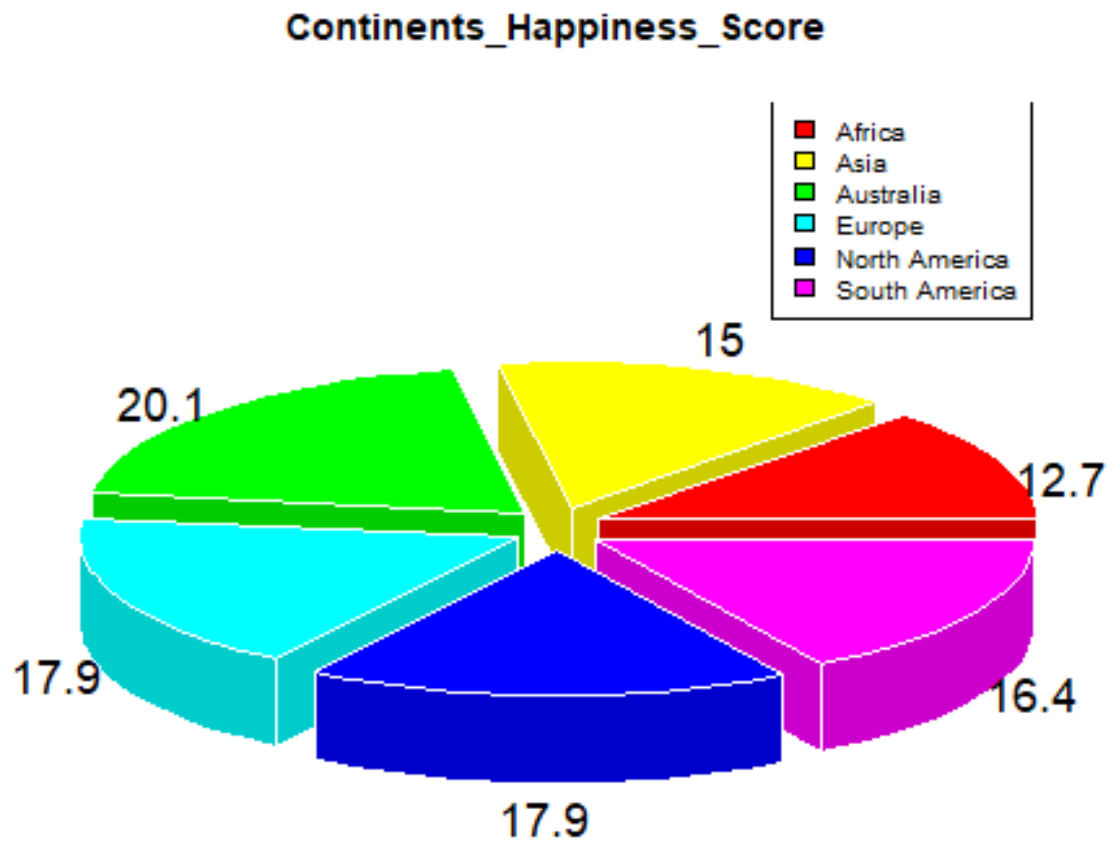5.Happiness score explained by freedom to make life choices.
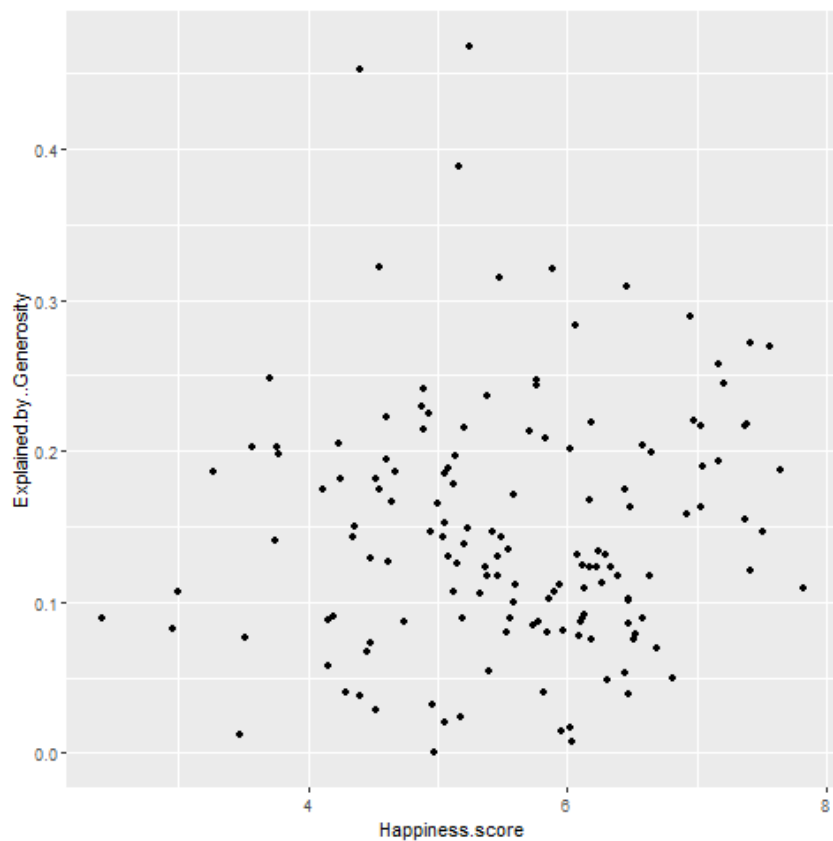
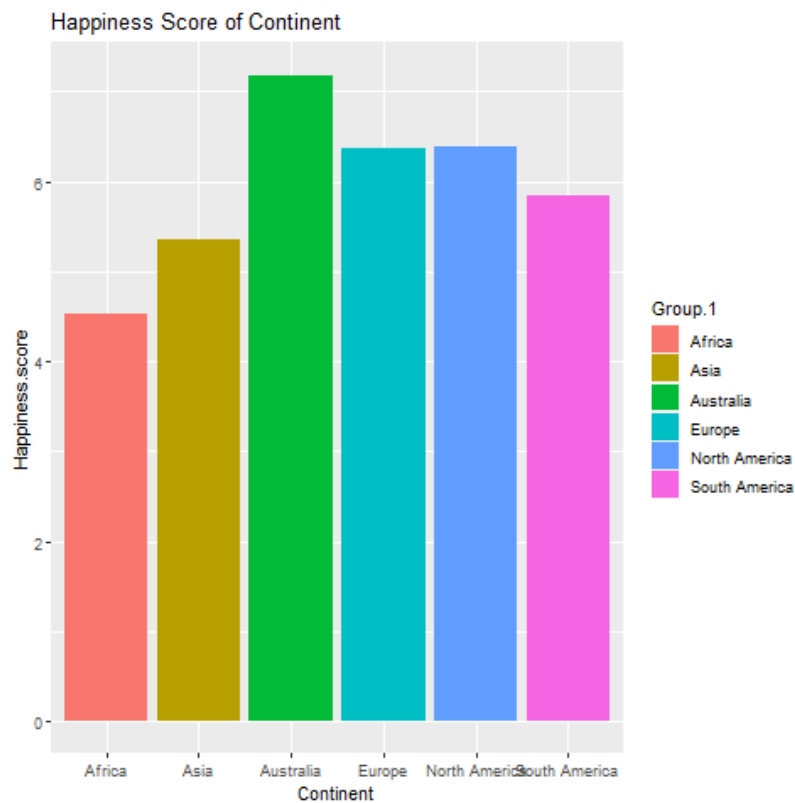6.Happiness score explained by Generosity.

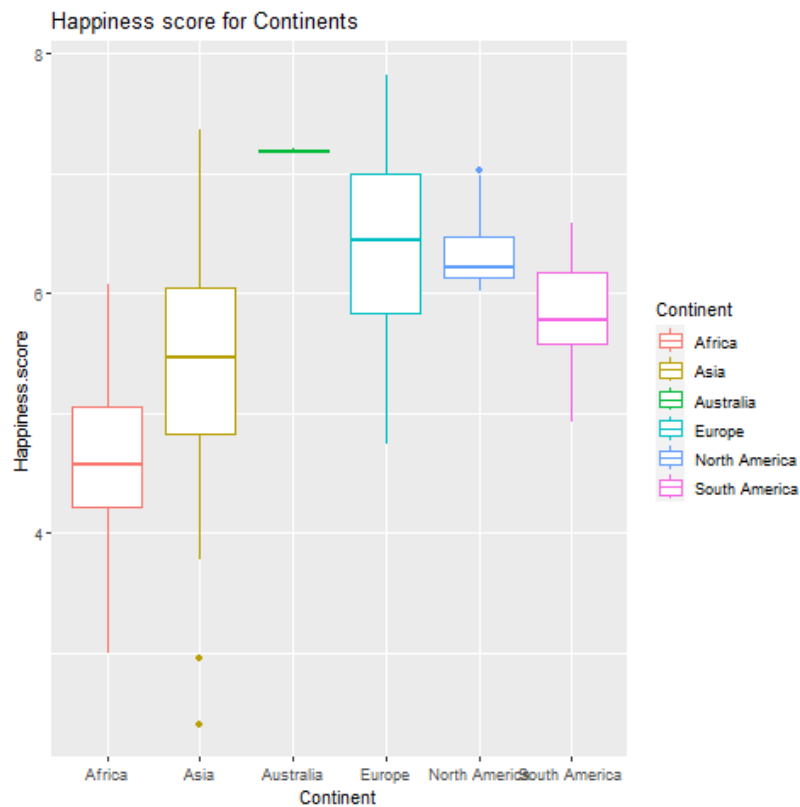7.Happiness score explained by perceptions of corruption.

8.3D pie chart of happiness score of continents.

Continents_Happiness_Score

Legend:
- Africa
- Asia
- Australia
- Europe
- North America
- South America

9.Bar graph of happiness score of continents.

Happiness Score of Continent

10.Boxplot of happiness score of continents.
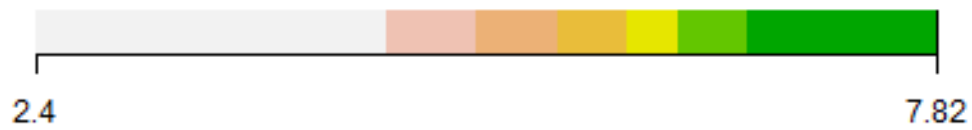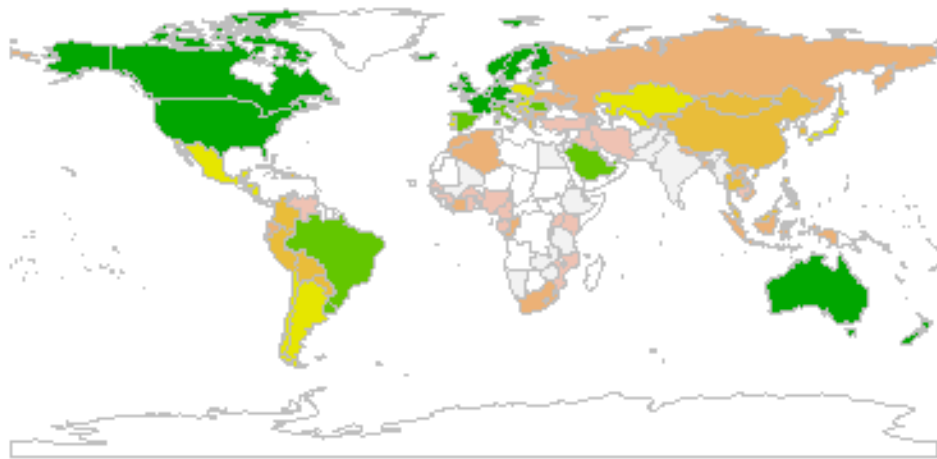

Happiness score for Continents

11.World map of happiness score gives us a clear picture of our data set.

World Map for Happiness score 2022

2.4   7.82

CONCLUSION AND FUTURE SCOPE

From our observation, it is pretty much clear that happiness score is strongly related to GDP and Health. Happiness score increases as GDP and health increases. Happiness score is weakly related to corruption which shows that people are not that much concerned about the corruption. Similarly, other factors affecting happiness score were discussed in this project. There is also significant variation in happiness within individual countries. Three-quarters of differences in life evaluation come from individuals living in the same place, rather than people living in different countries . Increasing inequality, both in terms of GDP and happiness, has accentuated the gap between people living in the same areas. The experiences of unemployment, loneliness or poor mental health are some of the most important predictors of misery, with income and education also playing a smaller role. The increased importance that people assign to happiness has also led to governments around the world turning their focus to this issue. Happiness is now recorded on a regular basis in almost all countries.

We can note here that, the top three countries are all from the Scandinavian region.Finland has been named the world's happiest country five times in a row, followed by Denmark, Iceland, Switzerland, and the Netherlands. Worst Performers include countries like Afghanistan under the Taliban rule preceded by Lebanon, Zimbabwe, Rwanda, and Botswana, respectively. We hope that the conditions in these countries become better.

REFERENCES

[1] **https://worldhappiness.report/**
[2] **https://www.kaggle.com/code/paytonfisher/happiness-analysis-using-r/notebook**
[3] **https://cran.r-project.org/web/packages/rworldmap/rworldmap.pdf**
[4] **https://www.youtube.com/watch?v=SAwlAtapAUI**