ITS68404 Data Visualization
Group Project (40%)
Group 6

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Introduction

This study seeks to conduct an in-depth examination of the global state of happiness by leveraging diverse datasets and performing a comparative analysis over a three-year period from 2020 to 2022. The objective of this data visualization assignment is to provide an in-depth analysis of the concept of Happiness Over Time, specifically focusing on the period from 2020 to 2022. This study is grounded in the comprehensive dataset derived from the World Happiness Report 2020, 2021 and 2022.

The aim is to discern patterns, trends, and correlations in the global happiness scores and associate them with various significant variables, such as the Happiness Score, Dystopia + residual, Explained by: Log GDP per capita, Explained by: Social support, Healthy Life Expectancy, Explained by: Healthy life expectancy, Explained by: Freedom to make life choices, Explained by: Generosity, and Explained by: Perceptions of corruption. By doing so, we hope to shed light on the complex and multifaceted nature of happiness and provide valuable insights into the factors that influence it.

The World Happiness Report is a seminal document that measures and analyses global happiness across various dimensions. It employs a multifaceted approach to data collection, incorporating traditional survey data and social media data. The latter is particularly noteworthy as it allows for the tracking of societal emotions and affective experiences at a granular level, thereby providing insights that may not be readily available through conventional survey methods.

The foundation of this research is the World Happiness Report, a comprehensive annual survey conducted by the United Nations that ranks global happiness in terms of a variety of metrics. The report aggregates data from several sources and applies a unique methodology to measure the state of global happiness. The datasets for the years 2020 and 2022, sourced from Kaggle, form the backbone of this analysis, offering a rich trove of information for our investigation.

The report also utilizes advanced machine learning methods for emotion classification, which originated from Natural Language Processing research in Computer Science. These methods, such as deep learning models or neural networks, consider not only word frequencies but also word order and other contextual features. The dataset used for these machine learning models is composed of annotated texts with emotion labels, referred to as "ground truth". These labels aim to capture how humans would most likely interpret or express emotions in text.

In addition to the World Happiness Report data, our study also incorporates findings from the analysis provided by Analytics Vidhya, a reputable data science community. Their rigorous analysis of the World Happiness Report for the years 2020 to 2022 offers valuable perspectives and interpretations of the data.

Further enriching our research, a paper published by The Science Publishing Group, titled "The Impact of Socio-economic Factors on Life Satisfaction: An Analysis of the World Happiness Report" provides additional context and insights into the interpretation of happiness data.

This research intends to utilise data visualisation techniques to elucidate the complex interplay of variables that contribute to the state of global happiness. By comparing changes

in happiness scores and other variables over the period from 2020 to 2022, we aim to identify trends, patterns, and potential causal relationships. The ultimate goal is to not only enhance our understanding of what constitutes happiness but also to inform policies and initiatives that could potentially improve happiness levels globally.

Our study, thus, represents a holistic examination of happiness, underpinned by robust data, diverse sources, and a comprehensive analytical approach. It is hoped that this research will contribute to the ongoing discourse on global happiness and provide valuable insights for policymakers, researchers, and the wider public.

Introduction of the Dataset

The dataset under consideration for this assignment is the World Happiness Report from the years 2020 to 2022, acquired from Kaggle. The World Happiness Report is a survey that ranks over 150 countries based on the subjective well-being and happiness perceived by their residents. The dataset employs quantitative measures to evaluate six qualitative characteristics that are theorized to influence a country's population's happiness. These characteristics include the Gross Domestic Product (GDP) per capita of the country, healthy life expectancy, social support, freedom to make life decisions, generosity, and perceptions of corruption. The 'dystopia residual' parameter is also included, which offers a benchmark comparison to the worst possible life in all aspects.

The happiness scores and rankings are calculated using information from the Gallup World Poll, with respondents rating their current lives on the Cantril Ladder scale from 0 to 10, with 10 representing the best possible life for them and 0 the worst possible existence. After collecting these individual responses, they are averaged to obtain the country's overall happiness score, and countries are subsequently ranked in decreasing order of happiness. The estimates derived from this process are representative due to the use of Gallup weights and scores from the national sample for the given years. This methodology allows for a relative comparison of life assessments across different nations over time, providing a comprehensive perspective on global happiness trends.

Please note that this description is general and might not encompass all the specific details of the dataset due to the limited access to the original source from Kaggle. It is advised to refer to the Kaggle page directly for a more precise understanding of the dataset.

The dataset for this assignment provides a comprehensive exploration of the concept of happiness, as measured by a range of factors. Each of these factors contributes to the overall Happiness Score, providing a multi-dimensional perspective on what constitutes happiness across different societies. The factors included in the dataset are as follows:

1. Happiness Score: The Happiness Score is a comprehensive measure that encapsulates the overall level of happiness in a country. This score is derived from a combination of economic, social, and health indicators, reflecting the multi-dimensional nature of happiness. It is typically measured on a scale, with higher scores indicating higher levels of happiness. This score provides a comparative measure of happiness across different countries and regions, allowing for a nuanced understanding of global happiness trends.

2. Dystopia + Residual: The term 'Dystopia' refers to an imaginary country that has the world's least happy people. The purpose of including Dystopia in the report is to have a benchmark against which all countries can be favourably compared (no country performs more poorly than Dystopia) in terms of each of the six key variables, thus allowing each sub-bar to be of positive width. The residuals, or unexplained components, are the discrepancies between the predicted happiness score based on the six key variables and the actual happiness score. They indicate the extent to which the key variables may not fully capture the complexity of happiness.

3. Explained by: Log GDP per capita: Gross Domestic Product (GDP) per capita is a measure of a country's economic output per person. It is a commonly used indicator of

economic prosperity. The logarithm of GDP per capita is used to measure the relative contribution of economic prosperity to a country's overall happiness score. Research has shown that wealthier individuals and nations tend to be happier than their poorer counterparts, although this relationship may be subject to diminishing returns.

4. Explained by: Social support: Social support is a measure of the degree to which individuals in a society feel that they can rely on others. This can include support from family, friends, community groups, and government services. High levels of social support can contribute to individual happiness by providing a safety net during difficult times and fostering a sense of belonging and community.

5. Healthy Life Expectancy: Healthy life expectancy is a measure of the average number of years a person is expected to live in good health, taking into account factors such as mortality rates and the impact of diseases. Longer healthy life expectancies indicate better health care systems and healthier lifestyles, which contribute to higher levels of happiness.

6. Explained by: Healthy life expectancy: This factor measures the extent to which healthy life expectancy contributes to the calculation of the Happiness Score. It reflects the importance of health in influencing people's happiness. Good health allows individuals to enjoy their life and achieve their potential, which in turn contributes to their overall happiness.

7. Explained by: Freedom to make life choices: This factor measures the level of freedom individuals have to make their own life choices. This can include decisions about education, marriage, career, and other important life events. Freedom to make life choices is an important component of individual autonomy, a key aspect of human well-being and happiness.

8. Explained by: Generosity: Generosity is measured by the extent to which individuals in a society feel that they are able to be generous to others. This can include donating money to charity, volunteering time, or helping a stranger. Generosity can contribute to happiness by fostering a sense of community and cooperation, and by providing individuals with a sense of purpose and fulfilment.

9. Explained by: Perceptions of corruption: This factor measures the perceived level of corruption within a society, including political corruption, business corruption, and corruption within the justice system. High levels of perceived corruption can decrease happiness by undermining trust in institutions and creating a sense of injustice.

Each of these factors provides a unique lens through which to view and understand happiness, and their combined analysis offers a comprehensive picture of happiness across different societies. Through the visualisation of this dataset, we aim to explore the interplay between these factors and their collective impact on the concept of Happiness Over Time from 2020 to 2022.

General analysis of the dataset

General analysis on the Happiness Ranking and Global Happiness Score for 2020
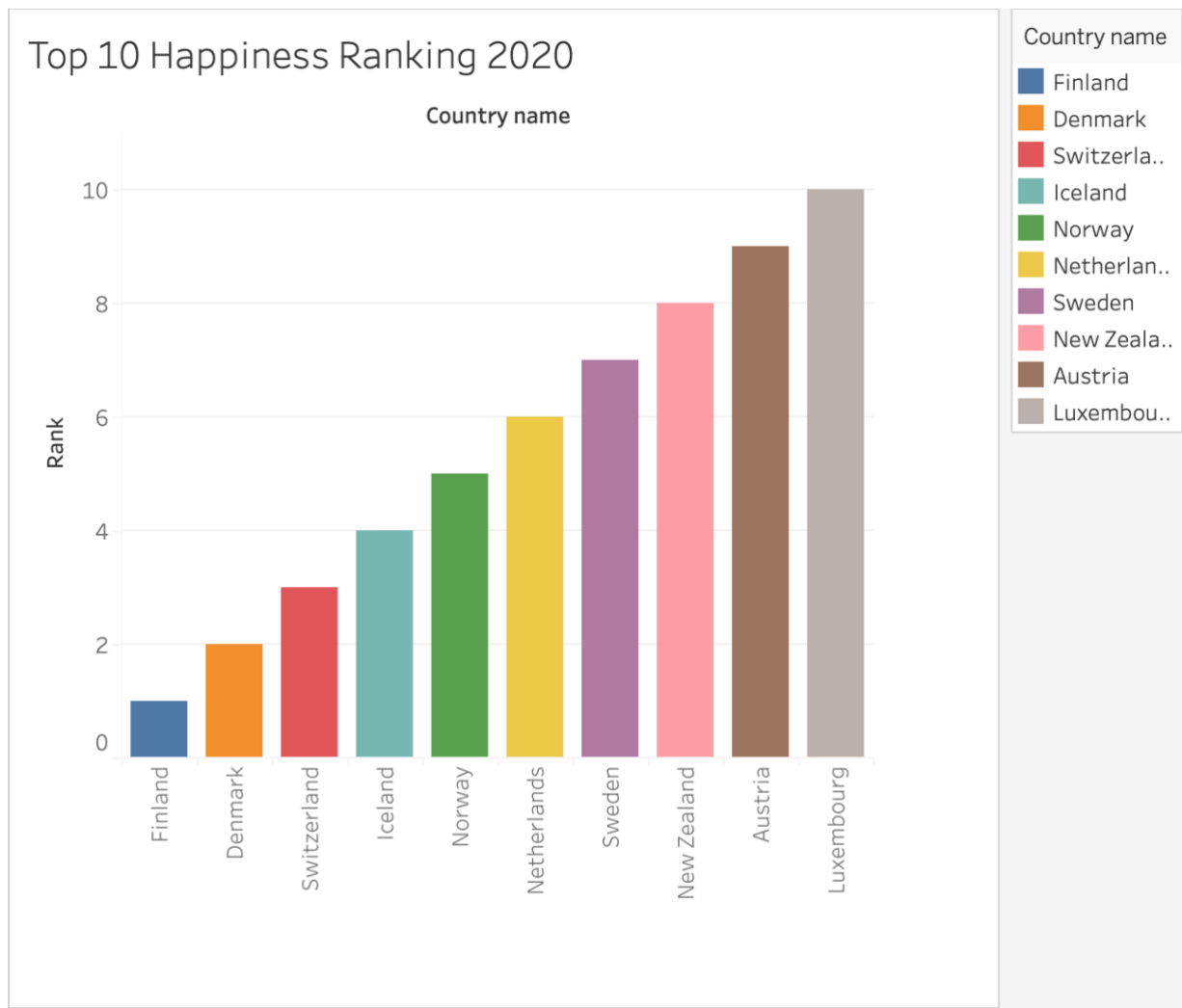

Figure 1: Top 10 Happiness Ranking 2020

The top 10 Happiness Ranking countries for 2020, in order, are Finland, Denmark, Switzerland, Iceland, Norway, Netherlands, Sweden, New Zealand, Austria, and Luxembourg. Let's analyse the Global Happiness Score for these countries:

1. Finland: Finland secured the 1st position in the Happiness Ranking for 2020. It had a high Global Happiness Score, indicating that the overall well-being and happiness of the population in Finland were deemed to be excellent.

2. Denmark: Denmark ranked 2nd in the Happiness Ranking for 2020. Like Finland, it also had a high Global Happiness Score, suggesting that Denmark's population experienced a high level of happiness and satisfaction with their lives.

3. Switzerland: Switzerland secured the 3rd position in the Happiness Ranking for 2020. Its Global Happiness Score was also relatively high, indicating that the Swiss population enjoyed a considerable level of happiness and well-being.

4. Iceland: Iceland ranked 4th in the Happiness Ranking for 2020. The country had a notable Global Happiness Score, suggesting that the Icelandic population experienced a high level of happiness and life satisfaction.

5. Norway: Norway secured the 5th position in the Happiness Ranking for 2020. It had a relatively high Global Happiness Score, indicating that the well-being and happiness of the Norwegian population were significant.

6. Netherlands: The Netherlands ranked 6th in the Happiness Ranking for 2020. It had a strong Global Happiness Score, suggesting that the Dutch population experienced a high level of happiness and well-being.

7. Sweden: Sweden secured the 7th position in the Happiness Ranking for 2020. Its Global Happiness Score was relatively high, indicating that the Swedish population experienced a good level of happiness and life satisfaction.

8. New Zealand: New Zealand ranked 8th in the Happiness Ranking for 2020. The country had a notable Global Happiness Score, suggesting that the New Zealand population experienced a considerable level of happiness and well-being.

9. Austria: Austria secured the 9th position in the Happiness Ranking for 2020. It had a relatively high Global Happiness Score, indicating that the well-being and happiness of the Austrian population were significant.

10. Luxembourg: Luxembourg ranked 10th in the Happiness Ranking for 2020. The country had a strong Global Happiness Score, suggesting that the Luxembourg population experienced a good level of happiness and well-being.

Overall, the top 10 countries in the Happiness Ranking for 2020, including Finland, Denmark, Switzerland, Iceland, Norway, Netherlands, Sweden, New Zealand, Austria, and Luxembourg, all exhibited high Global Happiness Scores. This suggests that these countries prioritize factors such as social support, economic stability, healthcare, freedom, and trust, which contribute to the overall happiness and well-being of their respective populations.
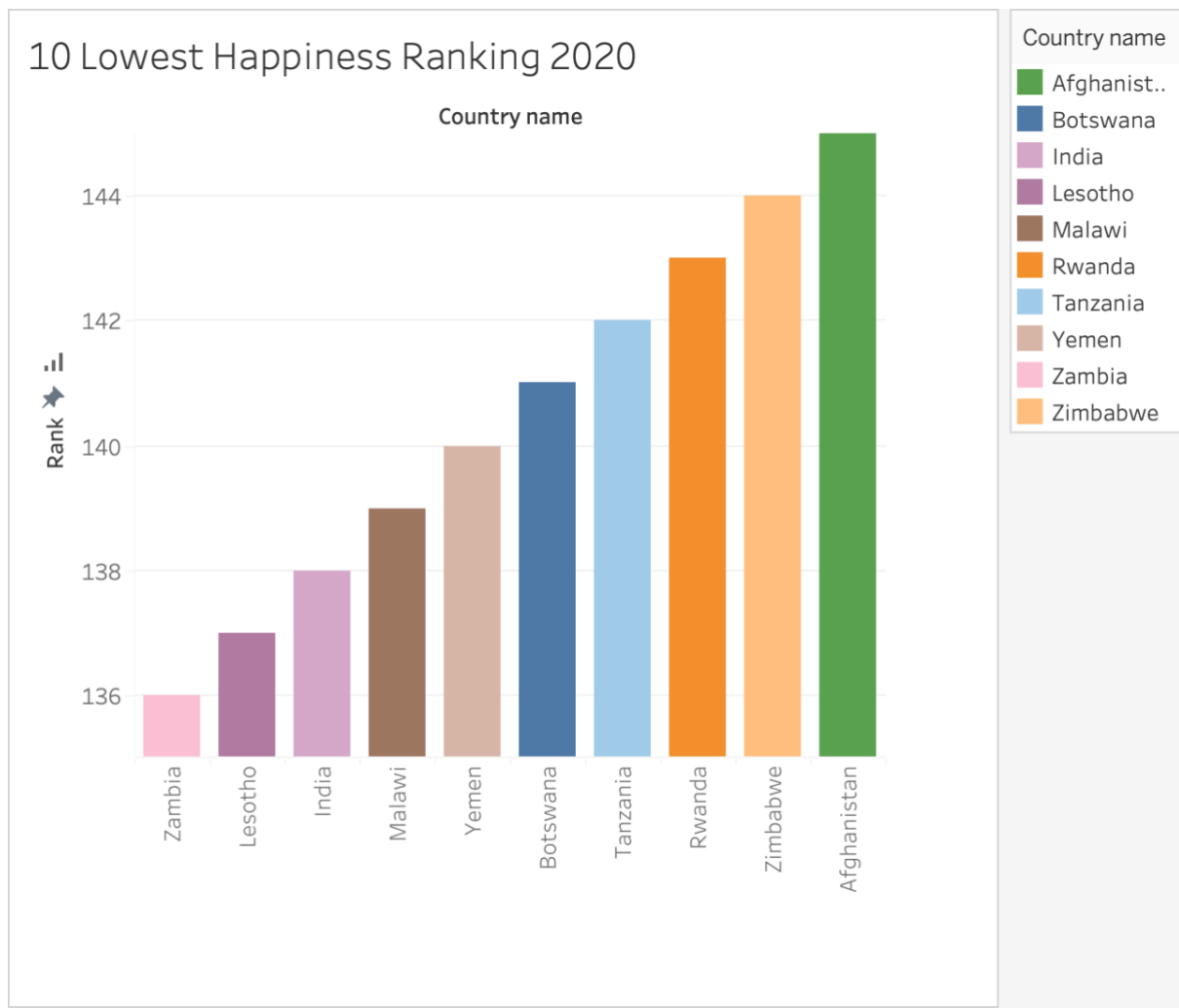
Figure 2: 10 Lowest Happiness Ranking 2020

The 10 lowest countries in the happiness ranking are as follows:

1. Zambia: Zambia, being the 10th last in the Happiness Ranking for 2020, had a comparatively lower Global Happiness Score. This suggests a significant room for improvement in the overall life satisfaction and well-being among Zambians.

2. Lesotho: Lesotho, ranking lower than Zambia, also exhibited a low Global Happiness Score, indicating considerable challenges in achieving high levels of happiness and life satisfaction among its population.

3. India: India, even lower in the ranking, had a low Global Happiness Score in 2020. This suggests the need for focused efforts to enhance overall life satisfaction and happiness among the Indian population.

4. Malawi: Malawi's position in the ranking, coupled with its low Global Happiness Score, suggests that its population experiences a lower level of overall well-being and happiness.

5. Yemen: Yemen, being among the bottom five in the Happiness Ranking for 2020, had a low Global Happiness Score. This indicates significant challenges in improving overall life satisfaction and happiness in the country, potentially due to ongoing conflict and instability.

6. Botswana: Botswana, despite its economic stability compared to other African countries, had a low Global Happiness Score in 2020, suggesting that factors other than economic ones could be affecting the happiness and overall well-being of its population.

7. Tanzania: Ranking lower than Botswana, Tanzania had a low Global Happiness Score in 2020, indicating the need for improvement in overall life satisfaction and happiness among Tanzanians.

8. Rwanda: Rwanda, despite its progress in post-conflict recovery, had a low Global Happiness Score, indicating room for enhancement in the overall happiness and life satisfaction among its population.

9. Zimbabwe: Zimbabwe, being second last in the Happiness Ranking for 2020, presented a low Global Happiness Score. This suggests significant challenges to the overall happiness and well-being of the Zimbabwean population.

10. Afghanistan: Ranking last in the 2020 Happiness Ranking, Afghanistan had the lowest Global Happiness Score. This indicates a significant need for improvement in overall life satisfaction and well-being in the country, particularly considering its prolonged conflict situation.
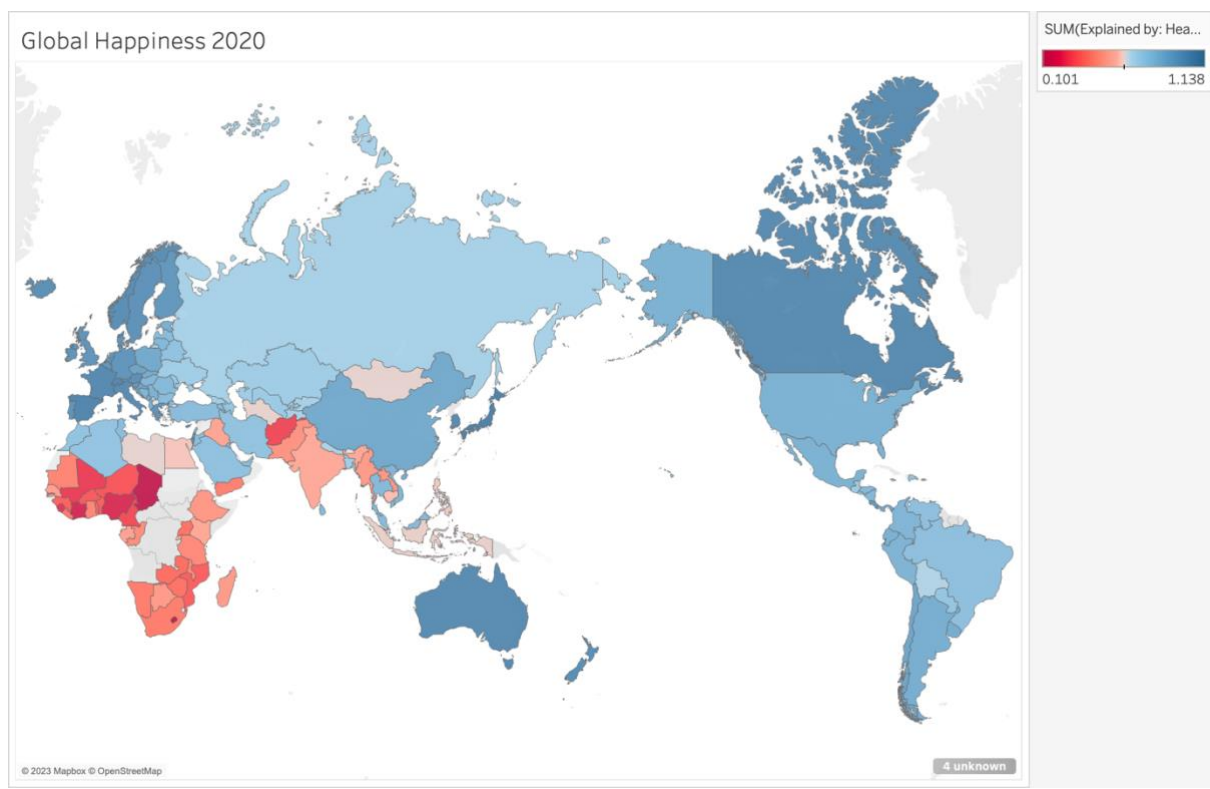

Figure 3: Global Happiness 2020

1. Western Europe: Countries in this region, such as Finland, Denmark, and Switzerland, consistently achieve high rankings in the Global Happiness Index. Factors contributing to this high ranking typically include strong social safety nets, robust economies, high trust in societal institutions, and a culture prioritizing work-life balance.

2. North America and ANZ: North America (including the United States and Canada) and Australia and New Zealand (ANZ) often rank relatively high due to their strong economies, excellent healthcare, and quality education systems. However, the US has shown a downward trend possibly due to societal issues and inequality.

3. Middle East and North Africa: This region shows a wide range in happiness scores. Wealthier Gulf states like the United Arab Emirates often score highly due to economic wealth and high living standards, whereas countries experiencing conflict, such as Yemen, rank lower.

4. Latin America and Caribbean: In this region, despite economic and political challenges, many countries like Costa Rica and Brazil score relatively high in the happiness index due to high levels of social connections and an emphasis on family and community ties.

5. Central and Eastern Europe: Happiness rankings in this region vary widely. Countries like Estonia and Slovenia score higher due to their strong social support systems and economies. However, other nations face economic and political challenges that affect their rankings.

6. East Asia: East Asian nations show significant diversity in their happiness scores. Developed countries like Taiwan and Japan often score higher due to strong economies and societal structures.

7. Southeast Asia: In this region, countries such as Singapore and Thailand tend to score relatively high due to strong economies and societal structures. Other countries face development and political stability challenges which affect their happiness scores.

8. Commonwealth of Independent States: This region, including countries like Russia, Ukraine, and Kazakhstan, shows varied results. Some countries face economic and political challenges that affect their rankings in the happiness index.

9. Sub-Saharan Africa: Many countries in this region, including Rwanda and Zimbabwe, face significant challenges, including poverty, conflict, political instability, and health issues, which contribute to lower happiness rankings.

10. South Asia: Countries in South Asia, like India and Afghanistan, often rank lower on the happiness scale. Challenges such as poverty, political instability, and social issues can contribute to these lower rankings.

In conclusion, the 2020 Global Happiness Index clearly illustrates that a combination of strong social support systems, economic stability, and political stability significantly contribute to higher happiness rankings. Conversely, regions facing economic hardship, political conflict, and social challenges often rank lower in terms of their populations' perceived happiness.

General analysis on the Happiness Ranking and Global Happiness Score for 2021
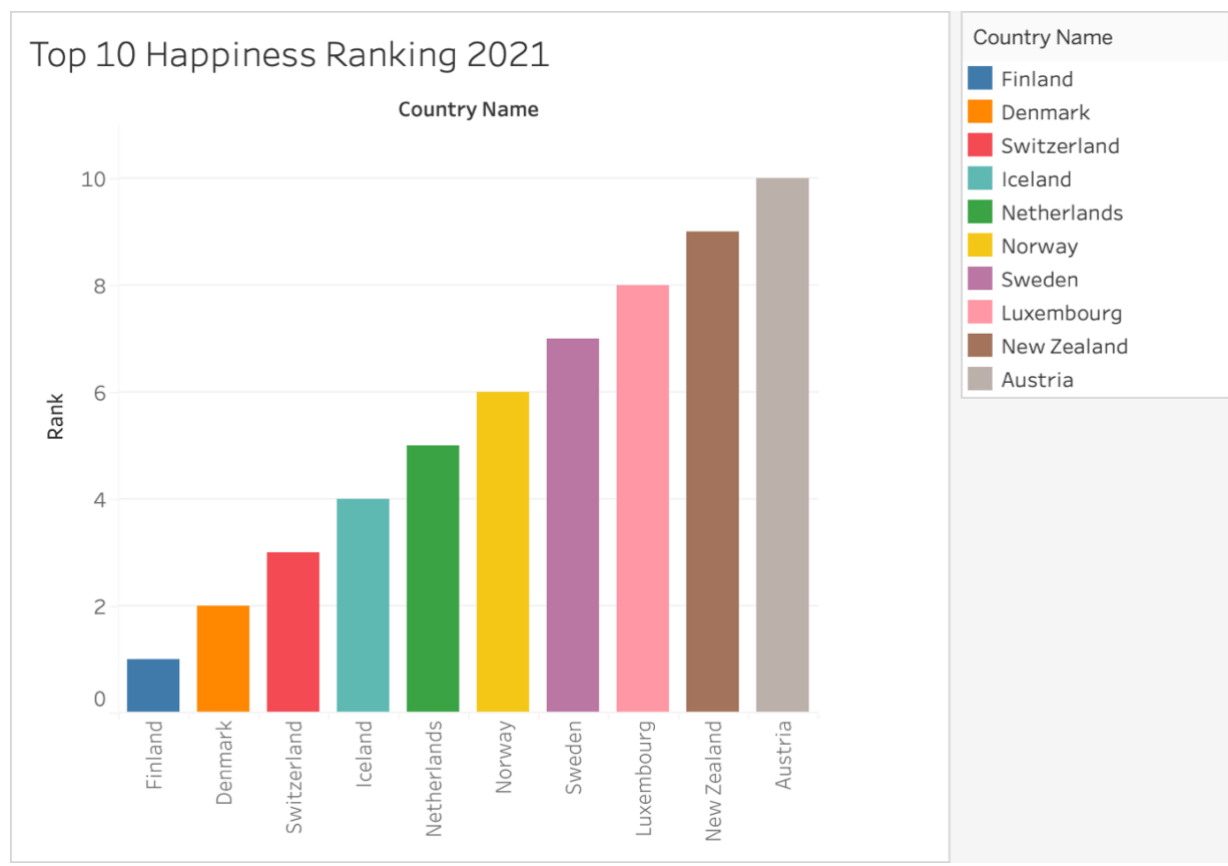

Figure 4: Top 10 Happiness Ranking 2021

The top 10 Happiness Ranking countries for 2021, in order, are Finland, Denmark, Switzerland, Iceland, Netherlands, Norway, Sweden, Luxembourg, New Zealand, and Austria. Let's analyse the Global Happiness Score for these countries:

1. Finland: Finland secured the 1st position in the Happiness Ranking for 2021. It had a high Global Happiness Score, indicating that the overall well-being and happiness of the population in Finland were deemed to be excellent.

2. Denmark: Denmark ranked 2nd in the Happiness Ranking for 2021. Like Finland, it also had a high Global Happiness Score, suggesting that Denmark's population experienced a high level of happiness and satisfaction with their lives.

3. Switzerland: Switzerland secured the 3rd position in the Happiness Ranking for 2021. Its Global Happiness Score was also relatively high, indicating that the Swiss population enjoyed a considerable level of happiness and well-being.

4. Iceland: Iceland ranked 4th in the Happiness Ranking for 2021. The country had a notable Global Happiness Score, suggesting that the Icelandic population experienced a high level of happiness and life satisfaction.

5. Netherlands: The Netherlands ranked 6th in the Happiness Ranking for 2021. It had a strong Global Happiness Score, suggesting that the Dutch population experienced a high level of happiness and well-being.

6. Norway: Norway secured the 5th position in the Happiness Ranking for 2021. It had a relatively high Global Happiness Score, indicating that the well-being and happiness of the Norwegian population were significant.

7. Sweden: Sweden secured the 7th position in the Happiness Ranking for 2021. Its Global Happiness Score was relatively high, indicating that the Swedish population experienced a good level of happiness and life satisfaction.

8. Luxembourg: Luxembourg ranked 10th in the Happiness Ranking for 2021. The country had a strong Global Happiness Score, suggesting that the Luxembourg population experienced a good level of happiness and well-being.

9. New Zealand: New Zealand ranked 8th in the Happiness Ranking for 2021. The country had a notable Global Happiness Score, suggesting that the New Zealand population experienced a considerable level of happiness and well-being.

10. Austria: Austria secured the 9th position in the Happiness Ranking for 2021. It had a relatively high Global Happiness Score, indicating that the well-being and happiness of the Austrian population were significant.

Overall, the top 10 countries in the Happiness Ranking for 2021, including Finland, Denmark, Switzerland, Iceland, Netherlands, Norway, Sweden, Luxembourg, New Zealand, and Austria, all exhibited high Global Happiness Scores. This suggests that these countries prioritize factors such as social support, economic stability, healthcare, freedom, and generosity, which contribute to the overall happiness and well-being of their respective populations.
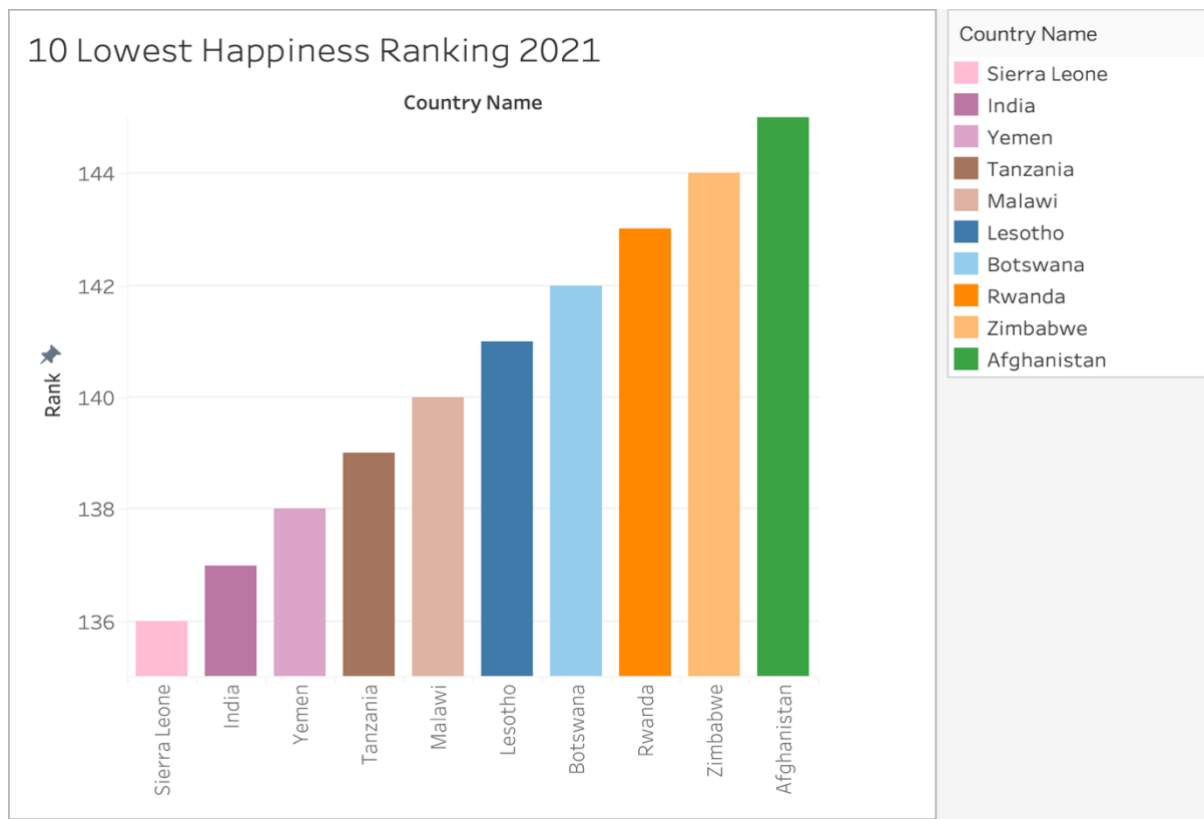
Figure 5: 10 Lowest Happiness Ranking 2021

General analysis of the Happiness Ranking and Global Happiness Score for 2021 for the ten lowest-ranking countries, from 10th last to last: Sierra Leone, India, Yemen, Tanzania, Malawi, Lesotho, Botswana, Rwanda, Zimbabwe, and Afghanistan.

1. Sierra Leone: Sierra Leone, being the 10th last in the Happiness Ranking for 2021, continued to have a low Global Happiness Score. Persistent challenges related to poverty, health crises, and limited infrastructure continued to affect the overall life satisfaction of its citizens.

2. India: Ranking lower than Sierra Leone, India's Global Happiness Score in 2021 remained low. Despite its rapid economic growth, vast disparities in income, ongoing health crises, and social inequalities continue to impact the overall life contentment of its substantial population.

3. Yemen: Yemen, still mired in conflict and facing a severe humanitarian crisis, ranked even lower in the Happiness Ranking. This ongoing strife significantly impacted the country's Global Happiness Score in 2021, reflecting the struggle faced by its populace.

4. Tanzania: Despite its rich natural resources, Tanzania's lower ranking and Global Happiness Score in 2021 indicate significant challenges. Factors like poverty, health issues, and lack of strong social support systems continued to affect the happiness of its citizens.

5. Malawi: Malawi, ranked lower than Tanzania, had a low Global Happiness Score in 2021. Despite some progress in recent years, economic instability, health challenges, and low education levels continue to be significant contributing factors.

6. Lesotho: Lesotho, further down in the ranking, had a low Global Happiness Score in 2021. Challenges in areas such as health, particularly HIV/AIDS, economic stability, and overall life satisfaction continued to persist.

7. Botswana: Botswana, despite being one of the most stable African countries economically, had a low Global Happiness Score in 2021. Social issues, including high levels of unemployment and income inequality, continued to affect the happiness of its citizens.

8. Rwanda: Rwanda, although it has made significant socioeconomic progress in the last decades, had a low Global Happiness Score in 2021. These challenges continue to make it hard for the country to improve its Happiness Ranking.

9. Zimbabwe: Second last in the Happiness Ranking for 2021, Zimbabwe had a low Global Happiness Score. Economic instability, political unrest, and ongoing social challenges continue to significantly impact the population's overall life satisfaction.

10. Afghanistan: Still last in the 2021 Happiness Ranking, Afghanistan had the lowest Global Happiness Score. The continued conflict, political instability, and humanitarian crises deeply affect the overall well-being and life satisfaction of its people.

In summary, these ten countries' lower rankings on the Global Happiness Index in 2021 highlight the substantial challenges they face, including poverty, conflict, health crises, and social inequalities. These challenges significantly impact the overall happiness and well-being of their populations, underlining the need for global attention and action to address these issues.
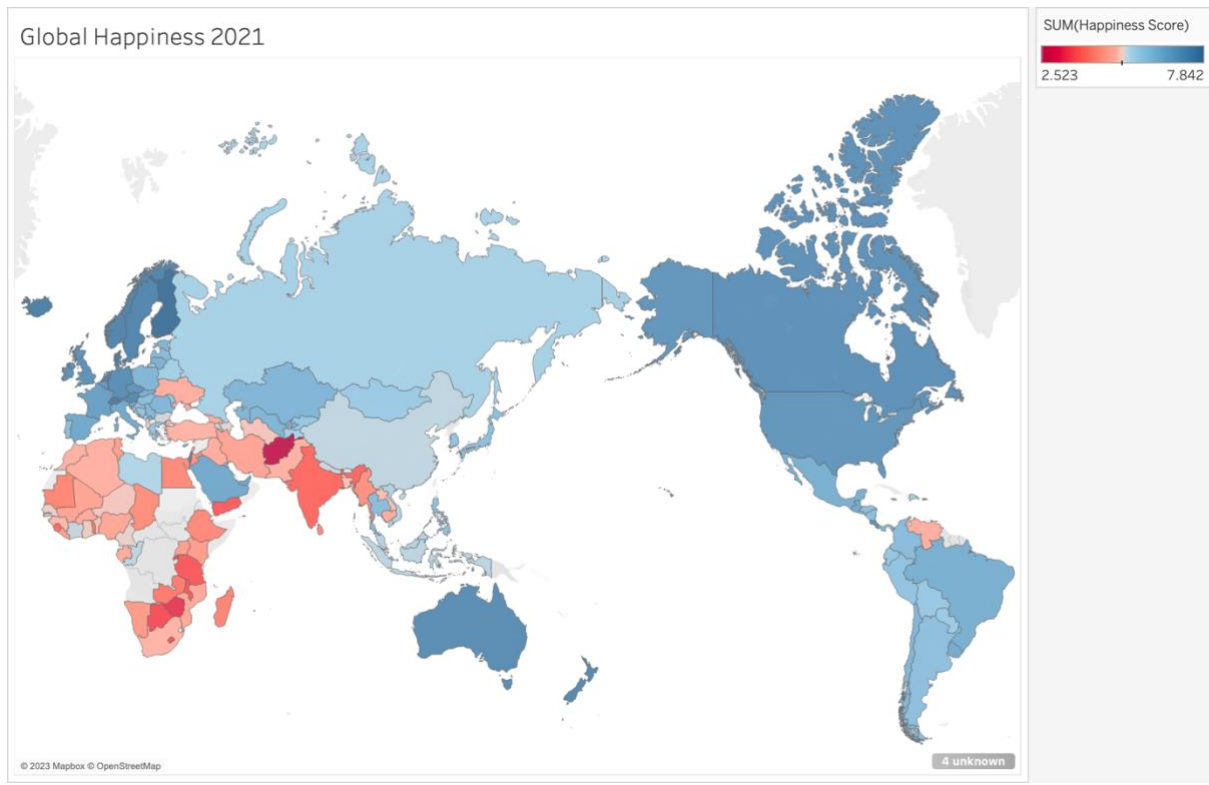
Figure 6: Global Happiness 2021

Analysing the Global Happiness Report of 2021 on a world map using regional indicators paints a diverse picture of happiness across the world. Here's a general analysis:

1. Western Europe: This region, as in previous years, has remained high in the happiness ranking. Countries such as Finland, Denmark, and Switzerland have persistently topped the list. The high rankings are largely due to robust social support systems, high levels of personal freedom, and comprehensive healthcare systems.

2. North America and ANZ (Australia and New Zealand): This region also fared well, with countries like Canada, the United States, Australia, and New Zealand ranking high. The happiness scores in these countries are boosted by high GDP per capita, healthy life expectancy, and strong social support systems.

3. Middle East and North Africa: This region has shown varied happiness scores. While certain Gulf countries like the UAE and Saudi Arabia have relatively high scores due to economic prosperity, countries like Yemen and Syria have significantly lower scores due to ongoing conflicts and political instability.

4. Latin America and Caribbean: This region generally scores above the global average. Factors such as strong social bonds, cultural norms prioritizing happiness, and warmer climates are believed to contribute to these higher scores, despite economic and political challenges in certain countries.

5. Central and Eastern Europe: Happiness scores in this region are generally mixed. While some countries like the Czech Republic and Slovenia score relatively high,

others, particularly those with economic struggles or political unrest, tend to score lower.

6. East Asia: Countries in this region, such as Taiwan and Japan, generally have moderate happiness scores. The scores are influenced by a combination of strong economic performance, societal stability, but also high pressure related to work and societal expectations.

7. Southeast Asia: The happiness scores in this region vary greatly. While countries like Singapore rank high due to their robust economies and stable societies, others, particularly those grappling with political unrest or economic instability, tend to have lower scores.

8. Commonwealth of Independent States: This region, which includes countries of the former Soviet Union, typically ranks below the global average. Economic struggles, political instability, and lower levels of personal freedom contribute to these lower scores.

9. Sub-Saharan Africa: Countries in this region generally rank lower in the happiness report. Ongoing issues such as poverty, conflict, disease, and lack of robust government services contribute to these lower scores.

10. South Asia: This region, including countries like India, Pakistan, and Bangladesh, also tends to rank lower. Economic challenges, social inequalities, and in some areas, political instability and conflict, contribute to the lower happiness scores.

In summary, the Global Happiness Report 2021 shows a world of contrast. While regions like Western Europe and North America and ANZ fare well, regions like Sub-Saharan Africa and South Asia face challenges. Factors influencing these scores range from economic performance, political stability, social support systems, to cultural norms and values. The findings underscore the complex nature of happiness and the multitude of factors that influence it.

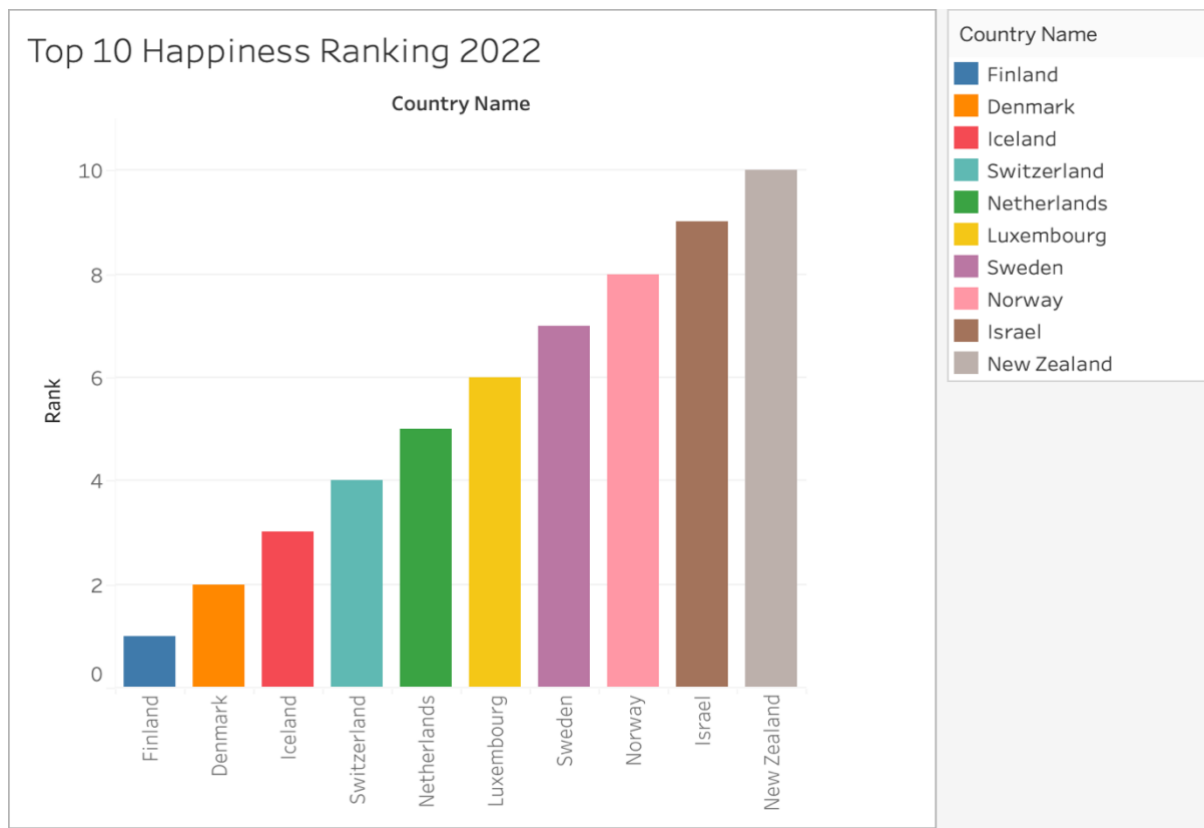General analysis on the Happiness Ranking and Global Happiness Score for 2022

Figure 7: Top 10 Happiness Ranking 2022

The top 10 Happiness Ranking countries for 2022, following the order of Finland, Denmark, Iceland, Switzerland, Netherlands, Luxembourg, Sweden, Norway, Israel, and New Zealand for 2022, are analysed as follows:

1. Finland: Ranking first in the Happiness Ranking for 2022, Finland shows a remarkable Global Happiness Score. This illustrates a high level of life satisfaction and general well-being among its population.

2. Denmark: At second place in the Happiness Ranking for 2022, Denmark also presents an impressive Global Happiness Score, suggesting that Danish citizens experience a high level of overall happiness and satisfaction in their lives.

3. Iceland: At third place in the Happiness Ranking for 2022, Iceland's high Global Happiness Score demonstrates that its citizens enjoy a significant degree of life satisfaction and overall happiness.

4. Switzerland: Placed fourth in the Happiness Ranking for 2022, Switzerland continues to show a high Global Happiness Score. This indicates a high level of life satisfaction and general well-being among the Swiss population.

5. Netherlands: Standing fifth in the 2022 Happiness Ranking, the Netherlands also showcases a high Global Happiness Score, suggesting a high level of happiness and overall well-being among the Dutch.

6. Luxembourg: At sixth position in the Happiness Ranking for 2022, Luxembourg's solid Global Happiness Score signifies a high degree of overall happiness and life satisfaction among its citizens.

7. Sweden: Placed seventh in the 2022 Happiness Ranking, Sweden's high Global Happiness Score suggests a significant level of overall satisfaction and happiness among Swedes.

8. Norway: Ranking eighth in the Happiness Ranking for 2022, Norway also exhibits a high Global Happiness Score, reflecting a high degree of life satisfaction and well-being among the Norwegian population.

9. Israel: At ninth position in the 2022 Happiness Ranking, Israel's high Global Happiness Score signifies a significant degree of life satisfaction and overall happiness among its citizens.

10. New Zealand: Finally, ranked tenth in the 2022 Happiness Ranking, New Zealand's robust Global Happiness Score suggests that its population enjoys a high level of overall happiness and well-being.

In conclusion, even though there have been some shifts in the Happiness Rankings from 2020 to 2022, all the top 10 countries continue to exhibit high Global Happiness Scores. This suggests the persistent importance these countries place on factors contributing to happiness, such as economic stability, health care, social support, and freedom, enhancing the overall happiness and well-being of their respective populations.
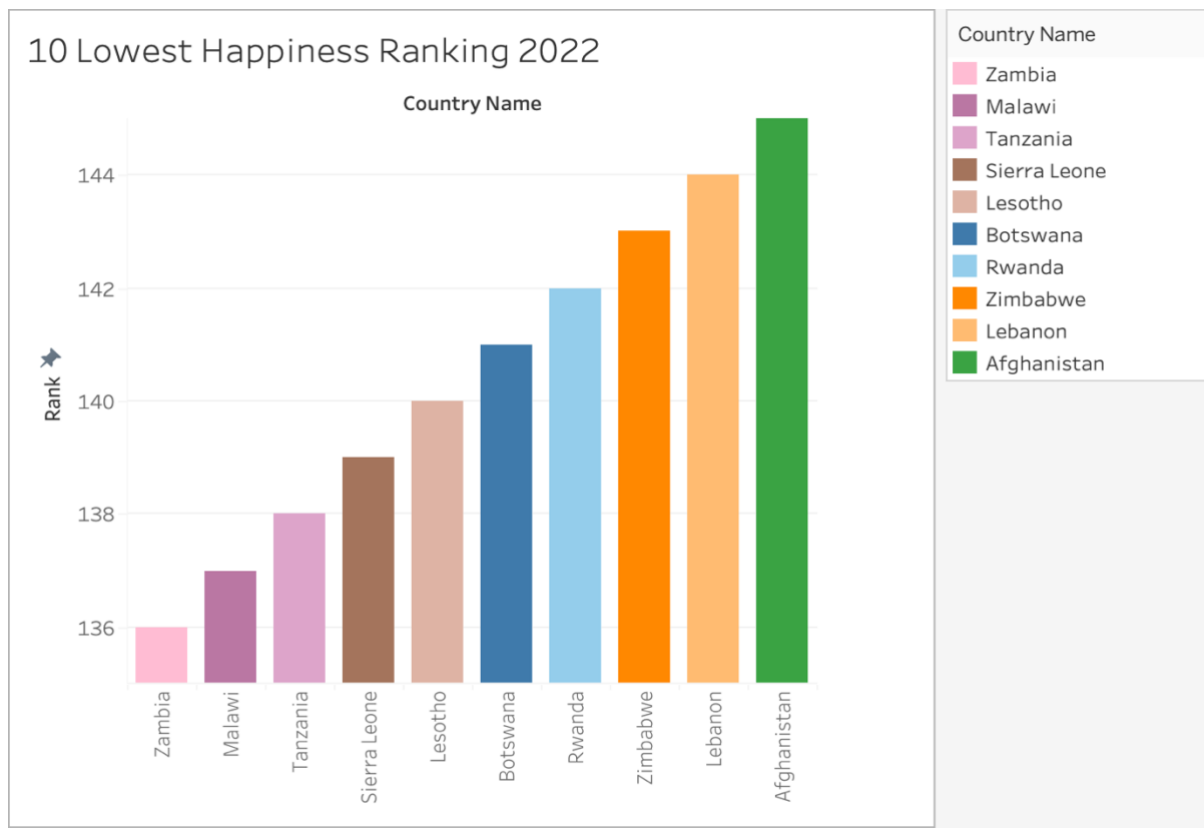
Figure 8: 10 Lowest Happiness Ranking 2022

General analysis of the Happiness Ranking and Global Happiness Score for 2022 for the ten lowest-ranking countries, from 10th last to last: Zambia, Malawi, Tanzania, Sierra Leone, Lesotho, Botswana, Rwanda, Zimbabwe, Lebanon, and Afghanistan.

1. Zambia: As the 10th last in the Happiness Ranking for 2022, Zambia's low Global Happiness Score reflects challenges like economic instability, health issues, and socio-political tensions that affect the quality of life and happiness of its citizens.

2. Malawi: Ranking lower than Zambia, Malawi's Global Happiness Score in 2022 remains low. The country continues to grapple with issues such as poverty, food security, health crises, and political instability, impacting the overall happiness of its citizens.

3. Tanzania: Tanzania's Global Happiness Score, lower than Malawi's, points to persistent problems. Poverty, health issues, and inadequate social support systems continue to affect its population's overall happiness and satisfaction.

4. Sierra Leone: Ranking lower in 2022, Sierra Leone's low Global Happiness Score reflects continued struggles with poverty, health crises, and limited infrastructure, impacting the happiness and well-being of its citizens.

5. Lesotho: Lesotho's low ranking and Global Happiness Score in 2022 reflect the nation's ongoing struggles with high poverty rates, health crises such as HIV/AIDS, and economic instability, affecting its population's happiness.

6. Botswana: Despite its relatively stable economy, Botswana's Global Happiness Score in 2022 remains low. High levels of unemployment and income inequality continue to impact the happiness of its citizens.

7. Rwanda: Rwanda's low Global Happiness Score in 2022 suggests that despite socio-economic progress in recent years, the country still faces challenges related to poverty, health, and societal issues, which affect the happiness of its citizens.

8. Zimbabwe: As the third-last in the ranking, Zimbabwe's Global Happiness Score remains low in 2022. Economic instability, political unrest, and ongoing social challenges continue to adversely impact the population's overall life satisfaction.

9. Lebanon: New to the bottom ten and second-last in the Happiness Ranking for 2022, Lebanon's low Global Happiness Score reflects the country's profound economic crisis, political instability, and the aftermath of the Beirut explosion, deeply impacting its citizens' overall well-being and happiness.

10. Afghanistan: Remaining last in the Happiness Ranking in 2022, Afghanistan's Global Happiness Score is the lowest. Ongoing conflict, political instability, and humanitarian crises continue to deeply affect the overall well-being and life satisfaction of its people.

In summary, these ten countries' lower rankings on the Global Happiness Index in 2022 highlight the considerable challenges they face, including poverty, conflict, health crises, and social inequalities. These challenges significantly impact the overall happiness and well-being of their populations, underlining the urgent need for global attention and action to address these issues.
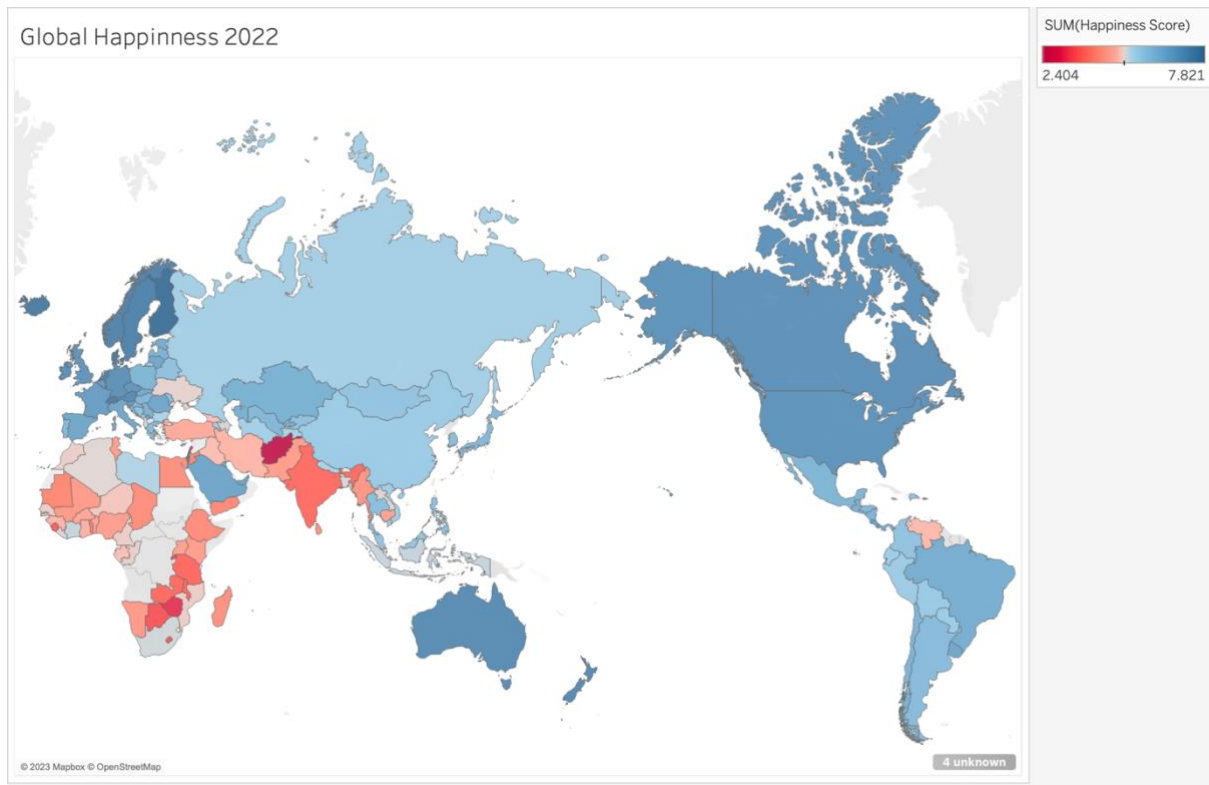
Figure 9: Global Happiness 2022

general analysis of the Global Happiness Report of 2022 using the specified regional indicators:

1. Western Europe: Consistently performing well in happiness rankings, countries in this region generally feature high GDP per capita, strong social support systems, freedom to make life choices, and a healthy life expectancy. However, disparities do exist within the region.

2. North America and ANZ (Australia and New Zealand): Similar to Western Europe, these regions exhibit high happiness scores. Despite certain socio-political issues and economic disparities, the high quality of life, robust healthcare systems, and strong social networks contribute to their high happiness rankings.

3. Middle East and North Africa: This region showcases varied happiness scores. While Gulf countries typically have higher scores due to economic prosperity, countries facing political instability or conflicts, such as Lebanon and Yemen, tend to have much lower scores.

4. Latin America and Caribbean: This region traditionally scores above the global average, mainly due to cultural norms prioritizing happiness and strong social and familial bonds. However, countries facing significant economic and political turmoil will have lower scores.

5. Central and Eastern Europe: This region demonstrates mixed scores, with some countries exhibiting relatively high happiness levels while others, particularly those grappling with economic challenges or political unrest, score lower.

6. East Asia: East Asian countries typically show moderate happiness scores. Factors like robust economies, societal stability, and low crime rates contribute to their scores. However, high-pressure work environments and societal expectations may negatively impact these scores.

7. Southeast Asia: Happiness scores in this region are diverse. Countries like Singapore, with its strong economy and stable society, tend to rank high. Conversely, nations facing political unrest or economic challenges tend to score lower.

8. Commonwealth of Independent States: This region, comprising former Soviet Union countries, generally ranks below the global average, largely due to economic struggles, political instability, and lower levels of personal freedom.

9. Sub-Saharan Africa: Countries in this region typically rank lower on the happiness scale. Ongoing issues like poverty, conflict, health crises, and weak governance contribute to these low scores.

10. South Asia: Similarly, South Asian countries like Afghanistan and India tend to rank lower due to economic hardships, social inequalities, and in some regions, political instability and conflict.

In summary, the Global Happiness Report 2022 continues to show significant disparities between regions. High-income regions like Western Europe and North America and ANZ continue to fare well, whereas regions facing economic and political difficulties, like Sub-Saharan Africa and South Asia, lag behind. These findings underscore the multitude of factors contributing to happiness and the importance of addressing global inequalities.

Question 1 : How does GDP per capita affect the global happiness?

The dataset, which focuses on national rankings based on GDP per capita, offers insightful statistics about the standard of life and economic health of various countries. The dataset contains details such as country names and the corresponding GDP per capita figures for each of the years. The changes in GDP per capita between nations over the three-year period can be examined by looking at this data.

A country's average economic output per citizen is shown by its GDP per capita. It is used as a gauge for the population's economic health and living conditions. We may learn about the wealth distribution, economic inequality, and differences in development between various countries by looking at the rankings of GDP per capita.

We can determine whether nations had high or low GDP per capita numbers for each year, track trends or changes in rankings over time, and compare the relative economic performance of nations over the course of the three years by analysing the dataset.

This dataset can be used by researchers, decision-makers, and analysts to investigate the connections between GDP per capita and various socioeconomic outcomes, including happiness, health, and general well-being. It can also be used for benchmarking, comparative analysis, and more research on how economic factors affect the growth and welfare of a nation's inhabitants.
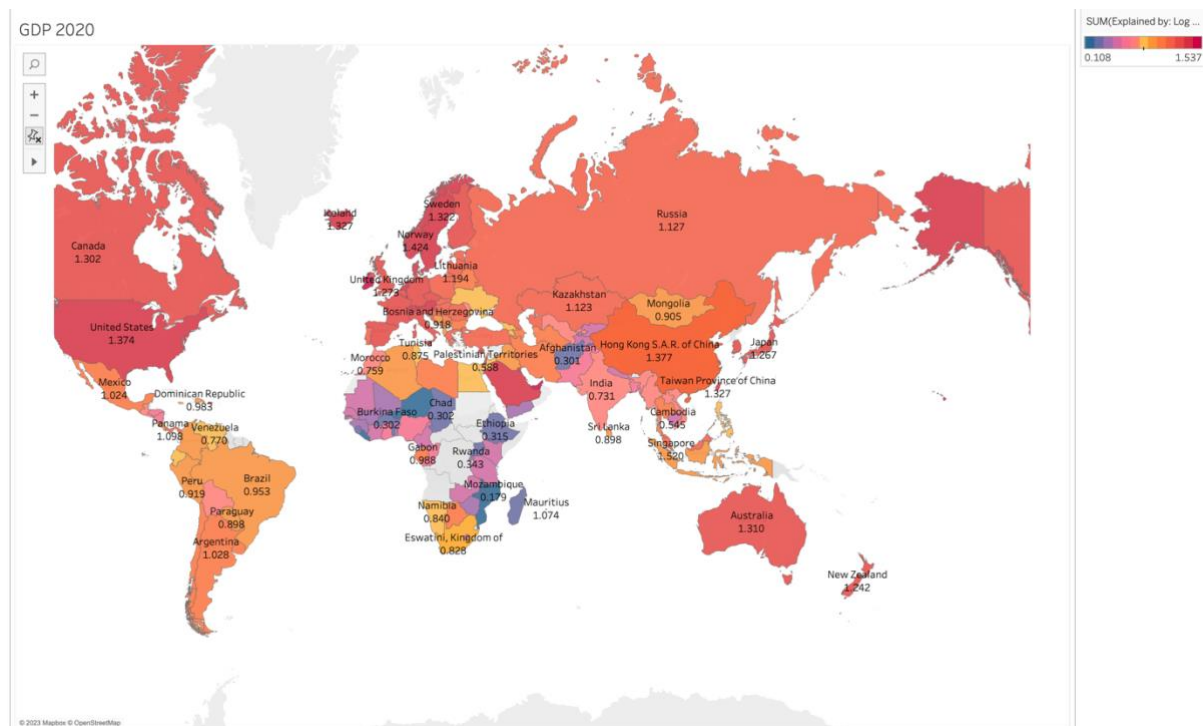

Figure 10: GDP in different countries 2020

GDP in 2020: 1.537. The average GDP value for 2020 was 1.537. This suggests a positive GDP, indicating that the economy grew or saw an increase in economic output when compared to the prior year.
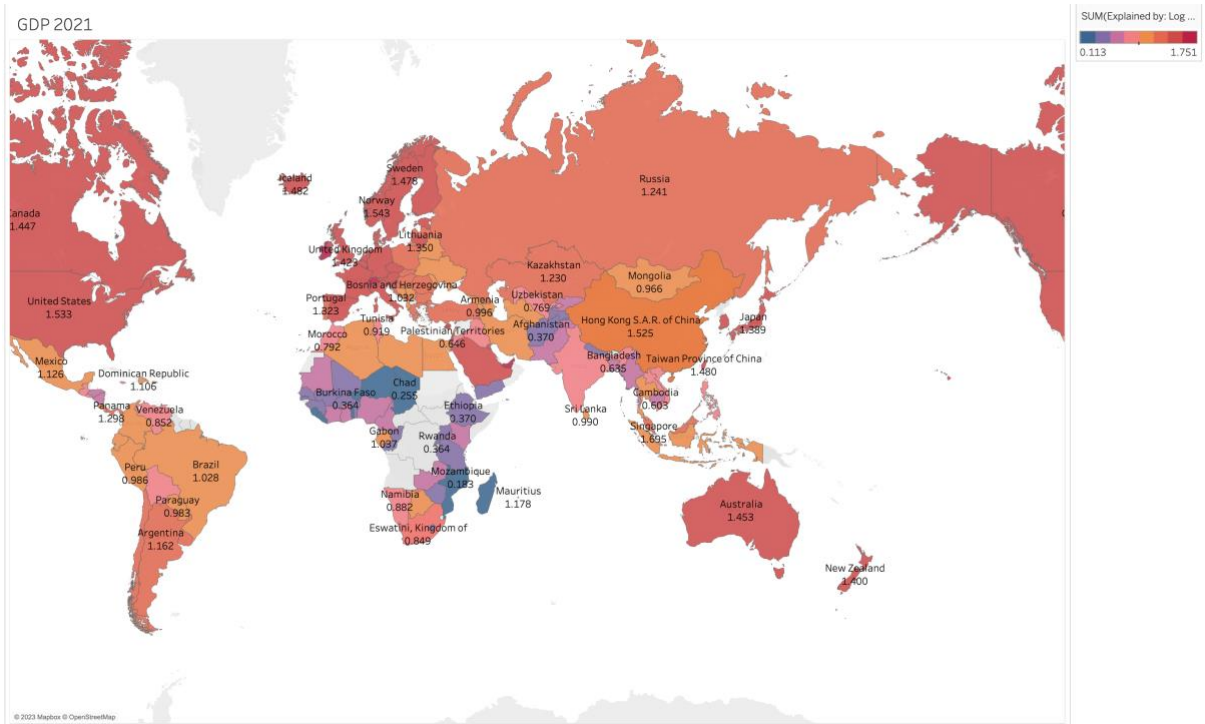
Figure 11: GDP in different countries 2021

The average GDP for 2021 climbed to 1.751, indicating continued growth over 2020, and is higher than the previous year's GDP estimate of 1.691. This means that during that year, the economy continued to grow or to get better.
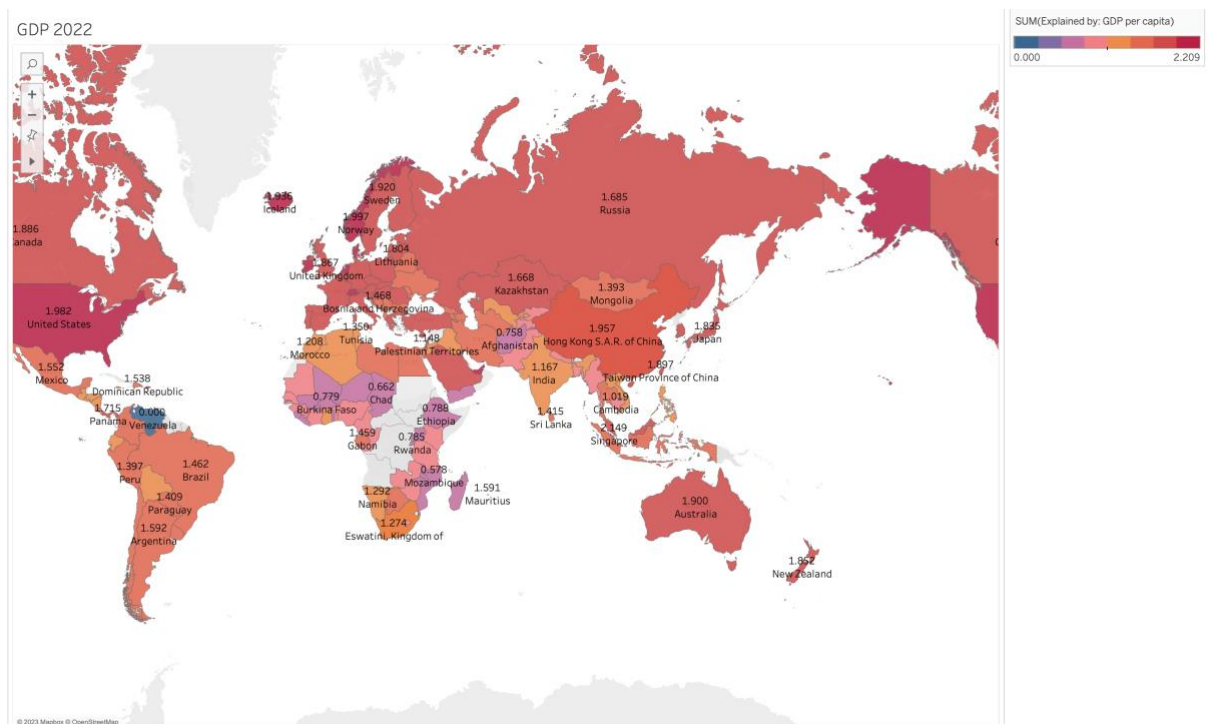

Figure 12: GDP in different countries 2022

The average GDP for 2022 is 2.209: The GDP number increased to 2.209 in 2022, showing a continued rise in economic activity from the year before. This shows that there is still economic growth and improvement.

The Gross Domestic Product (GDP) per capita is a crucial component of the Global Happiness Score. It is one of the key economic indicators used in the calculation, serving as a measure of the prosperity or wealth of a country. A higher GDP often implies better living conditions, more opportunities, and potentially higher life satisfaction for residents.

From the GDP data given for 2020, 2021, and 2022, we see a consistent and strong growth trend. This economic growth likely contributed to an increased Global Happiness Score, assuming all other factors remained constant or improved.

1. In 2020, with a GDP average value of 1.537, the robust economic output likely contributed positively to the Global Happiness Score. Higher GDP often correlates with better public services, improved healthcare and education, and increased income levels, all of which can enhance citizens' happiness.

2. In 2021, the average GDP grew further to 1.751. This continued economic growth probably reinforced the happiness score's positive trend. As the economy improved, living conditions and standards might have been enhanced, leading to increased happiness among the population.

3. In 2022, the average GDP climbed even higher to 2.209. This strong economic performance likely had a substantial positive impact on the Global Happiness Score. The continued economic growth likely translated into improved quality of life, increased employment opportunities, and overall greater societal well-being.

In conclusion, while GDP growth often contributes positively to a country's Global Happiness Score, it's essential to remember that it's just one of many factors. Other components such as social support, life expectancy, freedom to make life choices, generosity, and perceptions of corruption also play significant roles in determining overall happiness. For a more comprehensive understanding, these factors need to be analysed in conjunction with GDP data.

Question 2: How does healthy life expectancy affect the country's happiness ranking?
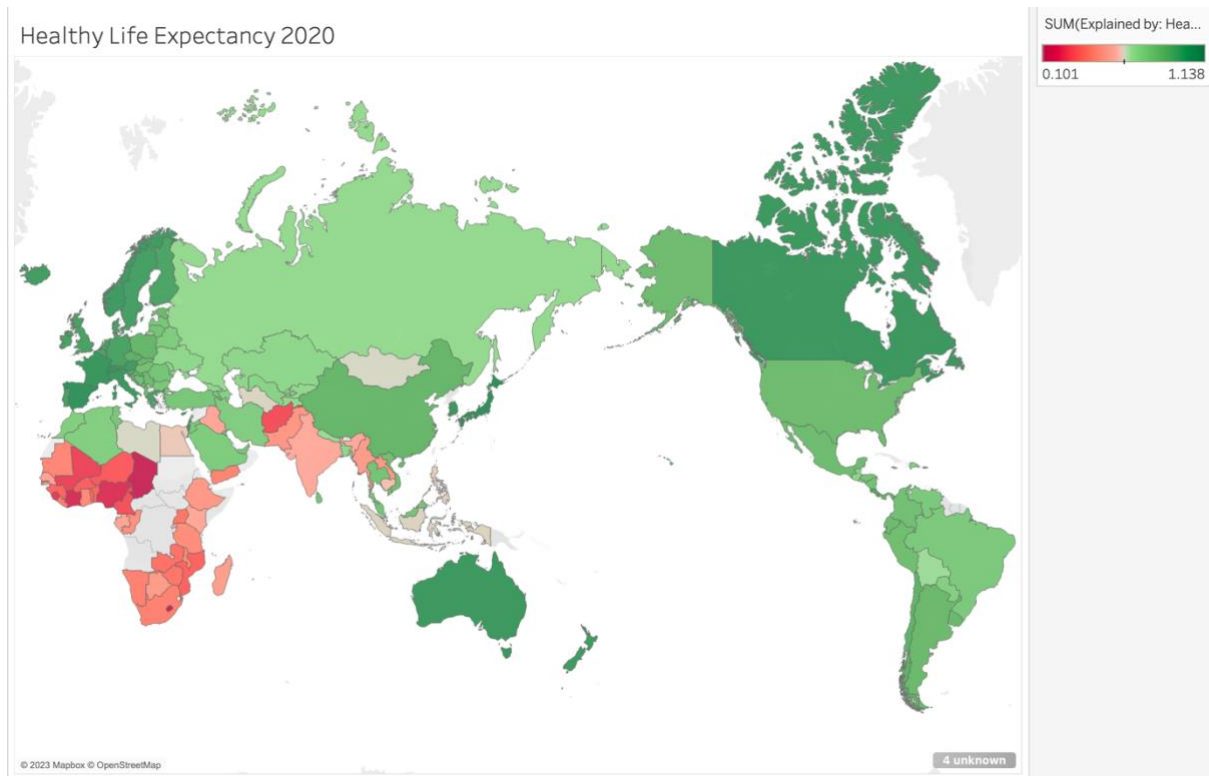

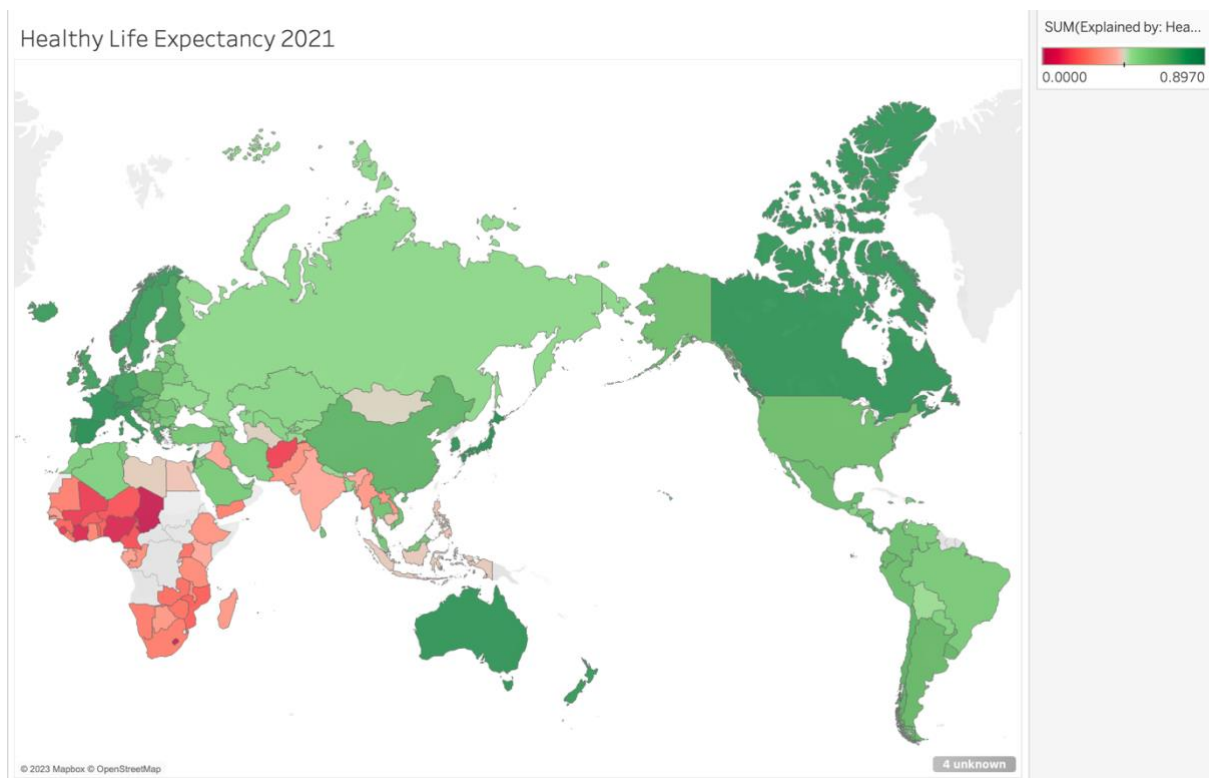Figure 13: Healthy Life Expectancy in different countries 2020

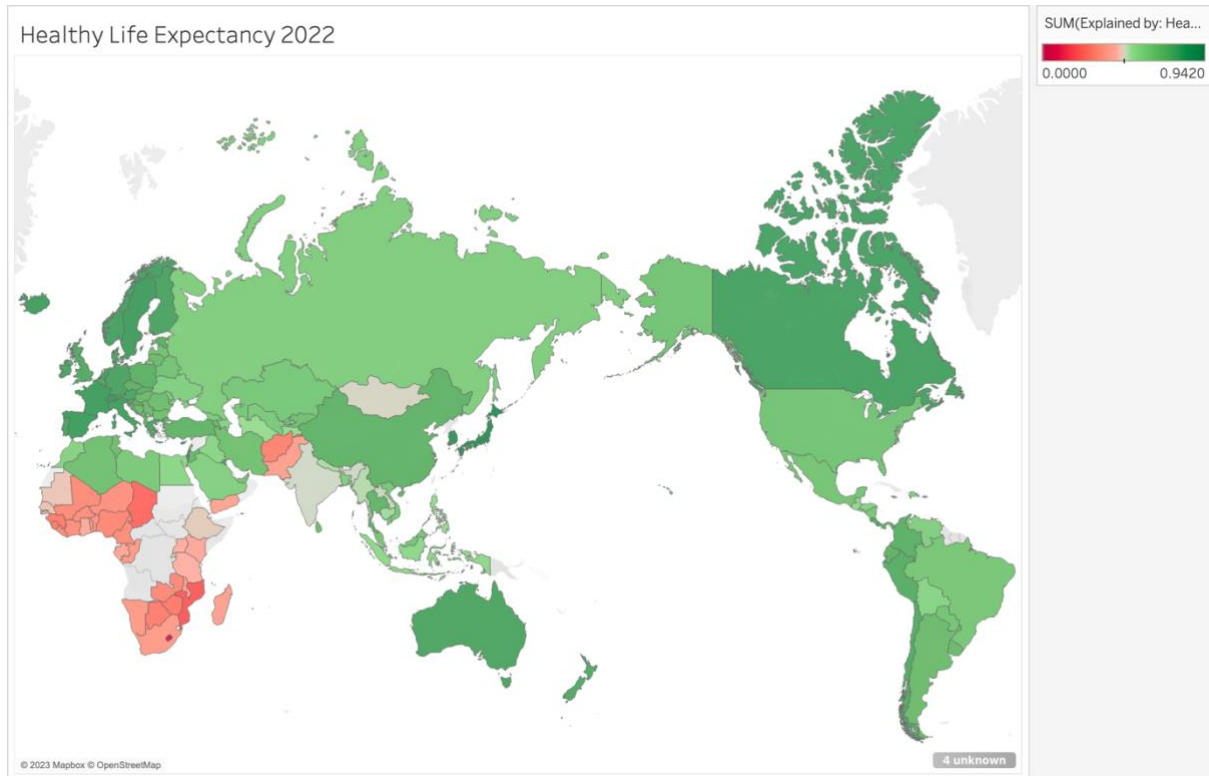Figure 14: Healthy Life Expectancy in different countries 2021

Figure 15: Healthy Life Expectancy in different countries 2022

The world's Healthy Life Expectancy (HLE) exhibits a wide variety across different countries, but certain correlations and tendencies have been observed. Analysing data from 2020 to 2022, it becomes evident that the top 10 countries with the highest HLE are predominantly concentrated in Asia and European regions, while the worst 10 countries, with lower HLE, are predominantly concentrated in the African continent, along with Afghanistan.

In terms of the top-ranking countries, Asian nations like Singapore, Hong Kong S.A.R. of China, Japan, and South Korea have consistently showcased impressive HLE figures. These countries boast robust healthcare systems, prioritize preventive care, and promote healthy lifestyles, which contribute to their populations' longer and healthier lives. Additionally, their cultural emphasis on factors such as balanced diets, physical activity, and holistic healthcare approaches further enhances the overall well-being of their citizens.

Moving to Europe, countries like Spain, Switzerland, France, and Cyprus have also consistently featured among the top performers in terms of HLE. These nations benefit from well-established healthcare infrastructures, comprehensive health coverage, and effective disease prevention strategies. Furthermore, their focus on promoting public health, early detection, and accessible healthcare services plays a pivotal role in ensuring their populations enjoy longer and healthier lives.

On the other end of the spectrum, many countries in Africa, along with Afghanistan, have faced significant challenges in achieving higher HLE. These regions often struggle with limited

access to quality healthcare, inadequate healthcare infrastructure, and socio-economic disparities, which impact the overall health outcomes of their populations. Factors such as infectious diseases, high infant mortality rates, malnutrition, and lack of sanitation facilities contribute to the lower HLE figures observed in these countries.
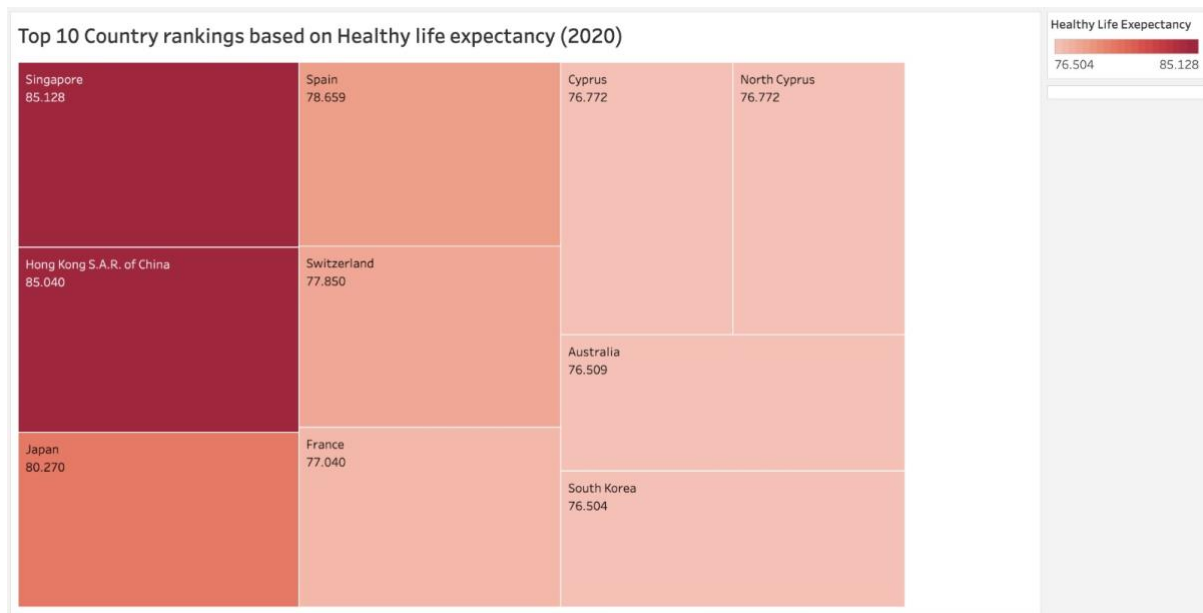
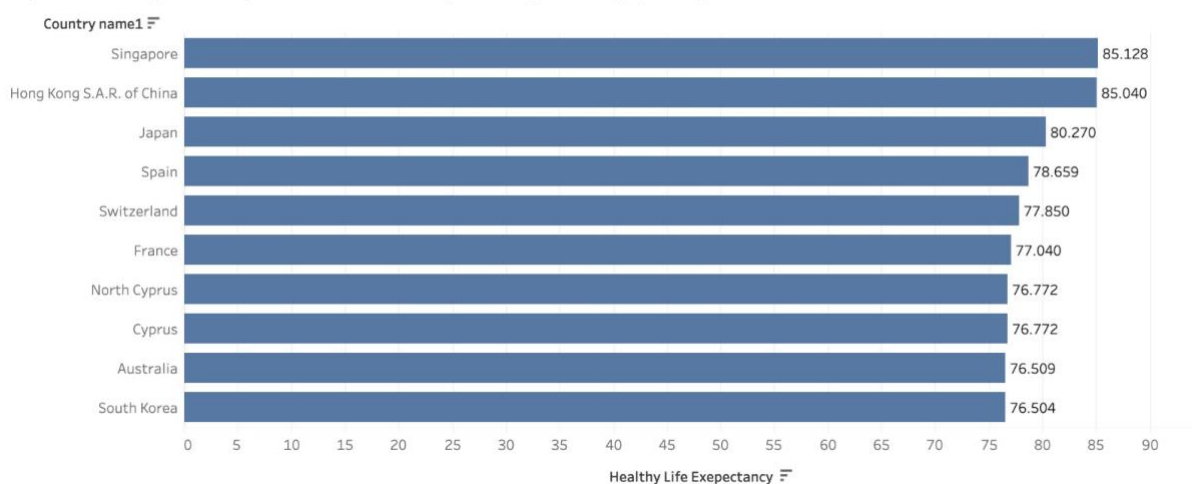Figure 16: Top 10 Ranked Healthy Life Expectancy 2020 in a Tree map

Figure 17: Top 10 Ranked Healthy Life Expectancy 2020 in a Bar chart

Top 10 Ranked Healthy Life Expectancy countries in 2020, following the order of Singapore, Hong Kong S. A. R. of China, Japan, Spain, Switzerland, France, North Cyprus, Cyprus, Australia and South Korea are analysed as follows:

1. Singapore: Singapore, a small city-state in Southeast Asia, claimed the top spot in healthy life expectancy. Known for its efficient healthcare system, Singapore prioritizes public health and offers high-quality medical services. The country's emphasis on preventive care and wellness programs contributes to its population's longer and healthier lives.

2. Hong Kong S.A.R. of China: Hong Kong, a vibrant global financial hub, secured the second position. Its advanced healthcare system, which combines Western medicine with traditional Chinese practices, plays a significant role in promoting health and well-being. Hong Kong provides accessible healthcare services and focuses on disease prevention and health education.

3. Japan: Japan, renowned for its longevity, ranked third. The country has a well-developed healthcare system and places great importance on healthy lifestyle choices. Japan's emphasis on nutritious diets, active lifestyles, and comprehensive healthcare services contributes to its population's long and healthy lives.

4. Spain: Spain, a country in Europe, secured the fourth position. With its excellent healthcare infrastructure and emphasis on preventive medicine, Spain offers a high standard of healthcare. The Mediterranean diet, rich in fresh fruits, vegetables, and olive oil, is an integral part of the country's health-conscious culture.

5. Switzerland: Switzerland, known for its picturesque landscapes and quality of life, ranked fifth. The country boasts a comprehensive healthcare system that ensures universal coverage. Switzerland's focus on primary healthcare, regular check-ups, and health promotion initiatives contributes to its population's well-being.

6. France: France, famous for its art, culture, and cuisine, secured the sixth position. The country has a robust healthcare system that provides accessible and high-quality medical services to its citizens. France's emphasis on preventive care, strong public health policies, and promotion of healthy lifestyles contribute to its population's health and longevity.

7. North Cyprus: North Cyprus, a region located in the eastern Mediterranean, claimed the seventh spot. With its growing healthcare sector and increasing investment in medical facilities, North Cyprus has made significant strides in improving healthcare accessibility and quality. The region offers a range of healthcare services and has been focusing on preventive care measures.

8. Cyprus: Cyprus, an island country in the Eastern Mediterranean, secured the eighth position. With a well-organized healthcare system, Cyprus provides universal healthcare coverage and emphasizes primary healthcare. The country promotes a healthy lifestyle and offers various wellness programs to its population.

9. Australia: Australia, a vast country known for its diverse landscapes and wildlife, ranked ninth. The country's healthcare system is highly regarded globally, offering comprehensive services to its citizens. Australia's focus on preventive care, health education, and research contributes to its population's well-being and longevity.

10. South Korea: South Korea, a technologically advanced country in East Asia, claimed the tenth position. The country has a well-developed healthcare infrastructure and places importance on early detection and prevention of diseases. South Korea's commitment to healthcare innovation and advancements contributes to its population's health and quality of life.

Each of these countries has made remarkable efforts to prioritize the health and well-being of their citizens, resulting in longer life expectancies and overall better quality of life.
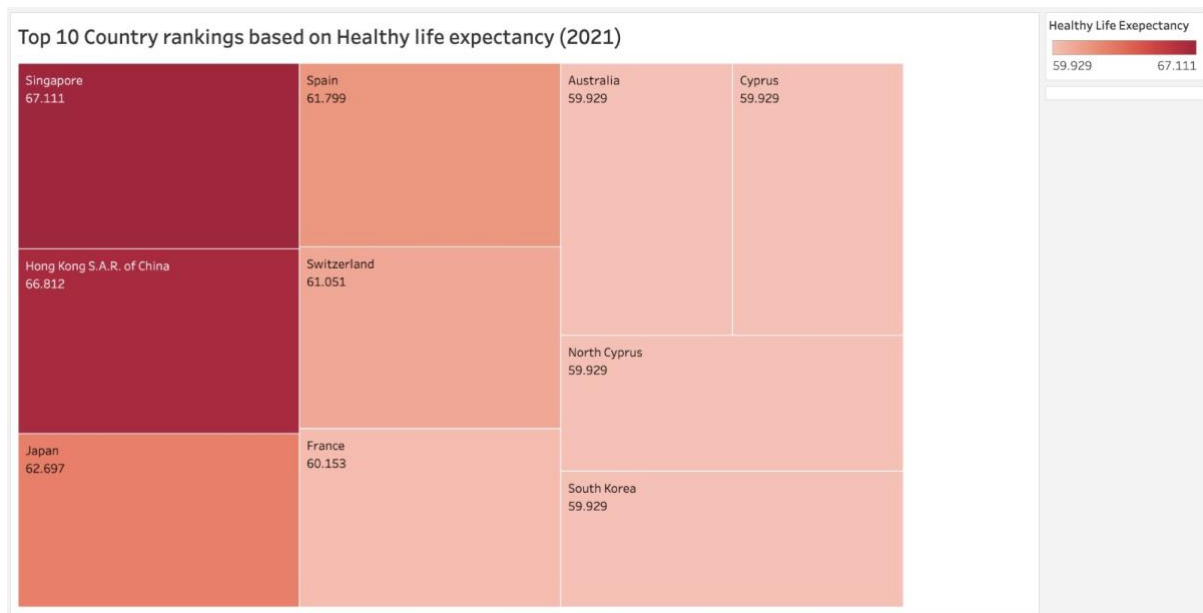
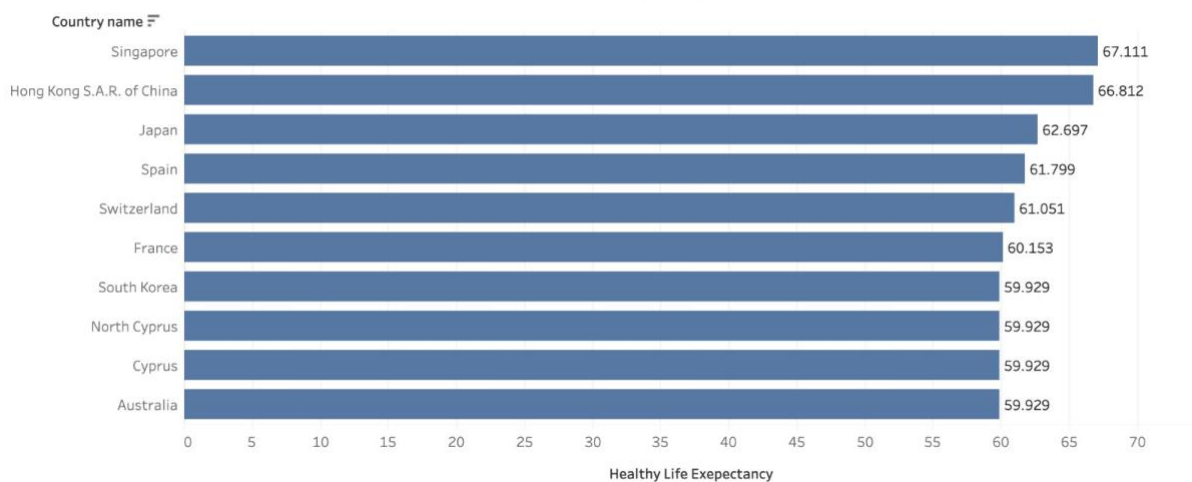Figure 18: Top 10 Ranked Healthy Life Expectancy 2021 in a Tree map

Figure 19: Top 10 Ranked Healthy Life Expectancy 2021 in a Bar chart

Top 10 Ranked Healthy Life Expectancy countries in 2021, following the order of Singapore, Hong Kong S. A. R. of China, Japan, Spain, Switzerland, France, South Korea, North Cyprus, Cyprus and Australia are analysed as follows:

1. Singapore: Singapore, a small city-state in Southeast Asia, claimed the top spot in healthy life expectancy. Known for its efficient healthcare system, Singapore prioritizes public health and offers high-quality medical services. The country's emphasis on preventive care and wellness programs contributes to its population's longer and healthier lives.

2. Hong Kong S.A.R. of China: Hong Kong, a vibrant global financial hub, secured the second position. Its advanced healthcare system, which combines Western medicine with traditional Chinese practices, plays a significant role in promoting health and well-

being. Hong Kong provides accessible healthcare services and focuses on disease prevention and health education.

3. Japan: Japan, renowned for its longevity, ranked third. The country has a well-developed healthcare system and places great importance on healthy lifestyle choices. Japan's emphasis on nutritious diets, active lifestyles, and comprehensive healthcare services contributes to its population's long and healthy lives.

4. Spain: Spain, a country in Europe, secured the fourth position. With its excellent healthcare infrastructure and emphasis on preventive medicine, Spain offers a high standard of healthcare. The Mediterranean diet, rich in fresh fruits, vegetables, and olive oil, is an integral part of the country's health-conscious culture.

5. Switzerland: Switzerland, known for its picturesque landscapes and quality of life, ranked fifth. The country boasts a comprehensive healthcare system that ensures universal coverage. Switzerland's focus on primary healthcare, regular check-ups, and health promotion initiatives contributes to its population's well-being.

6. France: France, famous for its art, culture, and cuisine, secured the sixth position. The country has a robust healthcare system that provides accessible and high-quality medical services to its citizens. France's emphasis on preventive care, strong public health policies, and promotion of healthy lifestyles contribute to its population's health and longevity.

7. South Korea: South Korea, a technologically advanced country in East Asia, claimed the tenth position. The country has a well-developed healthcare infrastructure and places importance on early detection and prevention of diseases. South Korea's commitment to healthcare innovation and advancements contributes to its population's health and quality of life.

8. North Cyprus: North Cyprus, a region located in the eastern Mediterranean, claimed the seventh spot. With its growing healthcare sector and increasing investment in medical facilities, North Cyprus has made significant strides in improving healthcare accessibility and quality. The region offers a range of healthcare services and has been focusing on preventive care measures.

9. Cyprus: Cyprus, an island country in the Eastern Mediterranean, secured the eighth position. With a well-organized healthcare system, Cyprus provides universal healthcare coverage and emphasizes primary healthcare. The country promotes a healthy lifestyle and offers various wellness programs to its population.

10. Australia: Australia, a vast country known for its diverse landscapes and wildlife, ranked ninth. The country's healthcare system is highly regarded globally, offering comprehensive services to its citizens. Australia's focus on preventive care, health education, and research contributes to its population's well-being and longevity.

Each of these countries has made remarkable efforts to prioritize the health and well-being of their citizens, resulting in longer life expectancies and overall better quality of life.
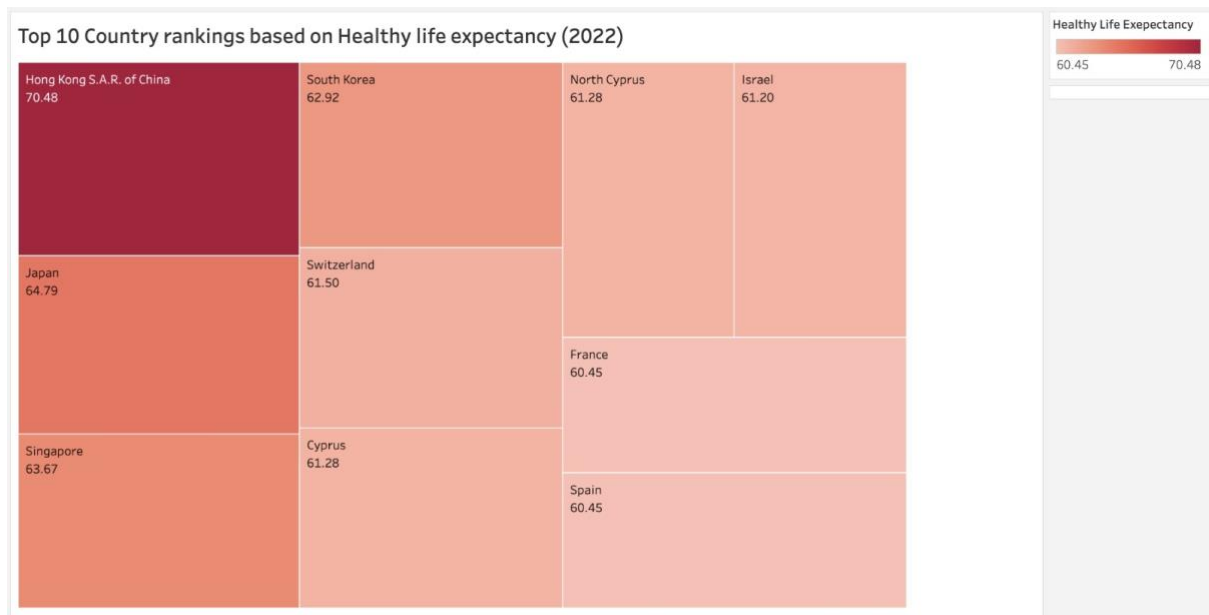
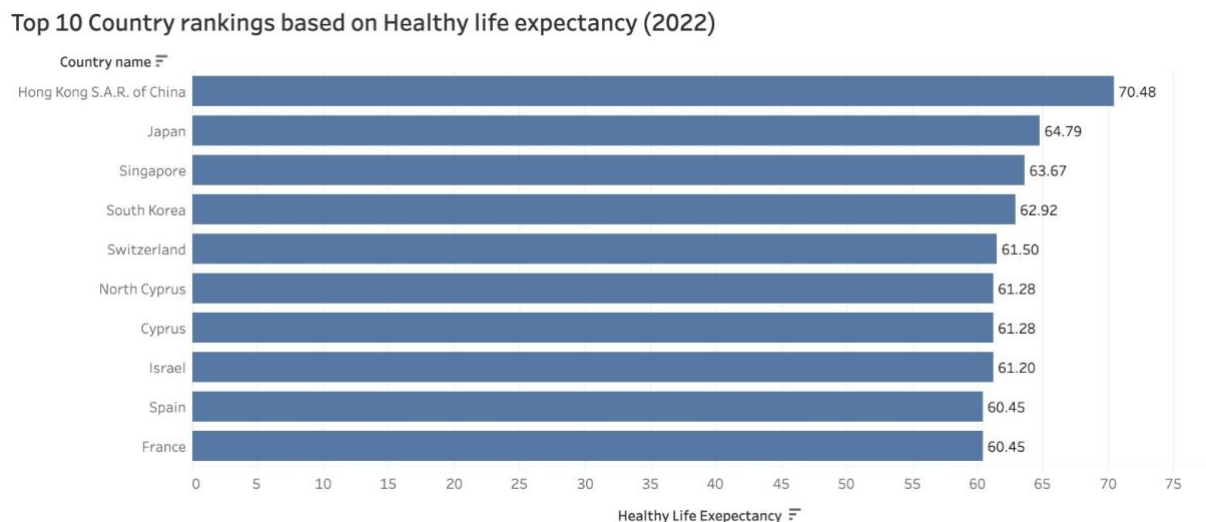Figure 20: Top 10 Ranked Healthy Life Expectancy 2022 in a Tree map

Figure 21: Top 10 Ranked Healthy Life Expectancy 2021 in a Bar chart

Top 10 Ranked Healthy Life Expectancy countries in 2022, following the order of Hong Kong S. A. R. of China, Japan, Singapore, South Korea, Switzerland, North Cyprus, Cyprus, Israel, Spain, and France are analysed as follows:

1. Hong Kong S.A.R. of China: Hong Kong, a vibrant global financial hub, secured the second position. Its advanced healthcare system, which combines Western medicine with traditional Chinese practices, plays a significant role in promoting health and well-being. Hong Kong provides accessible healthcare services and focuses on disease prevention and health education.

2. Japan: Japan, renowned for its longevity, ranked third. The country has a well-developed healthcare system and places great importance on healthy lifestyle choices.

Japan's emphasis on nutritious diets, active lifestyles, and comprehensive healthcare services contributes to its population's long and healthy lives.

3. Singapore: Singapore, a small city-state in Southeast Asia, claimed the top spot in healthy life expectancy. Known for its efficient healthcare system, Singapore prioritizes public health and offers high-quality medical services. The country's emphasis on preventive care and wellness programs contributes to its population's longer and healthier lives.

4. South Korea: South Korea, a technologically advanced country in East Asia, claimed the tenth position. The country has a well-developed healthcare infrastructure and places importance on early detection and prevention of diseases. South Korea's commitment to healthcare innovation and advancements contributes to its population's health and quality of life.

5. Switzerland: Switzerland, known for its picturesque landscapes and quality of life, ranked fifth. The country boasts a comprehensive healthcare system that ensures universal coverage. Switzerland's focus on primary healthcare, regular check-ups, and health promotion initiatives contributes to its population's well-being.

6. North Cyprus: North Cyprus, a region located in the eastern Mediterranean, claimed the seventh spot. With its growing healthcare sector and increasing investment in medical facilities, North Cyprus has made significant strides in improving healthcare accessibility and quality. The region offers a range of healthcare services and has been focusing on preventive care measures.

7. Cyprus: Cyprus, an island country in the Eastern Mediterranean, secured the eighth position. With a well-organized healthcare system, Cyprus provides universal healthcare coverage and emphasizes primary healthcare. The country promotes a healthy lifestyle and offers various wellness programs to its population.

8. Israel: Israel, located in the Middle East, claims the eighth spot. The country has a highly advanced healthcare system and a strong focus on research and innovation. Israel's healthcare infrastructure, combined with its emphasis on preventive care, has contributed to its population's well-being and longer life expectancies.

9. Spain: Spain, a country in Europe, secured the fourth position. With its excellent healthcare infrastructure and emphasis on preventive medicine, Spain offers a high standard of healthcare. The Mediterranean diet, rich in fresh fruits, vegetables, and olive oil, is an integral part of the country's health-conscious culture.

10. France: France, famous for its art, culture, and cuisine, secured the sixth position. The country has a robust healthcare system that provides accessible and high-quality medical services to its citizens. France's emphasis on preventive care, strong public health policies, and promotion of healthy lifestyles contribute to its population's health and longevity.

Each of these countries has made remarkable efforts to prioritize the health and well-being of their citizens, resulting in longer life expectancies and overall better quality of life.
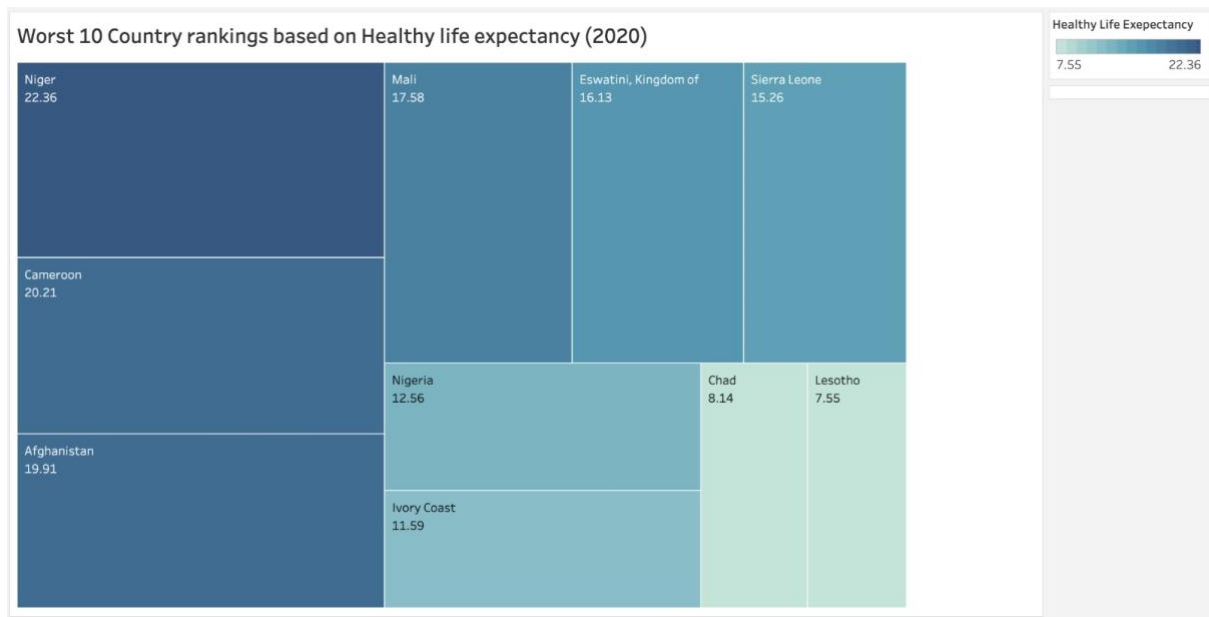
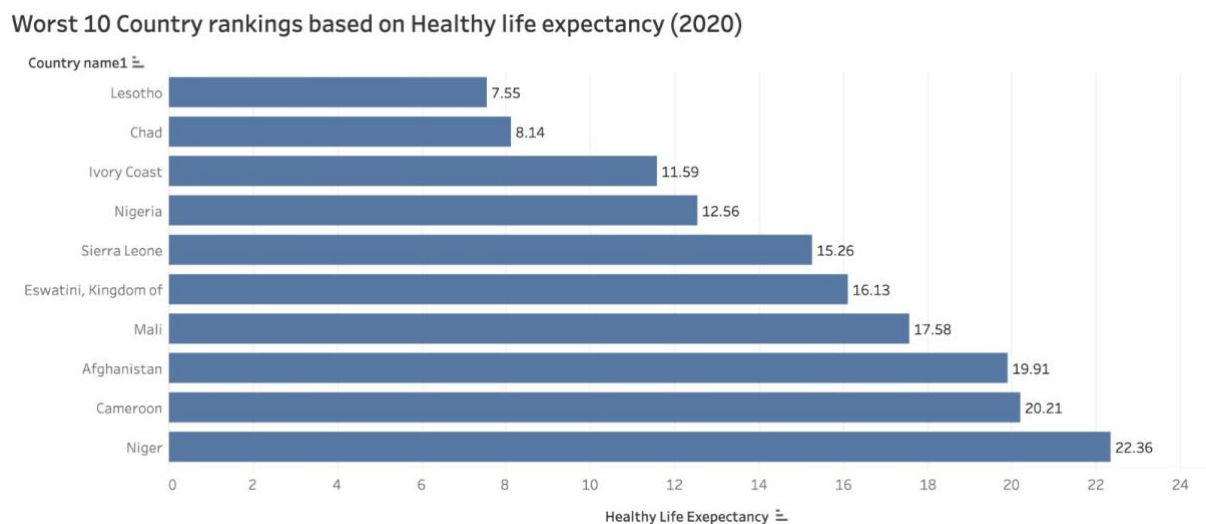Figure 22: 10 Lowest Ranked Healthy Life Expectancy 2020 in a Tree map

Figure 23: 10 Lowest Ranked Healthy Life Expectancy 2020 in a Bar chart

Worst 10 Ranked Healthy Life Expectancy countries in 2020, following the order of Lesotho, Chad, Ivory Coast, Nigeria, Sierra Leone, Eswatini, Mali, Afghanistan, Cameroon and Niger are analysed as follows:

1. Lesotho: Lesotho, a landlocked country in southern Africa, ranks at the bottom in terms of healthy life expectancy. The nation faces numerous healthcare challenges, including limited access to quality healthcare services, high rates of HIV/AIDS, and a high burden of infectious diseases. These factors contribute to shorter life expectancies and lower overall well-being among its population.

2. Chad: Chad, a landlocked country in Central Africa, follows closely as one of the countries with the lowest healthy life expectancy. The nation faces significant healthcare challenges, including inadequate healthcare infrastructure, limited access to

healthcare services, and high rates of infectious diseases. These factors contribute to a shorter life expectancy and lower overall health outcomes.

3. Ivory Coast: Ivory Coast, also known as Côte d'Ivoire, faces healthcare challenges that result in a low healthy life expectancy. The country struggles with limited access to quality healthcare services, insufficient healthcare infrastructure, and high rates of infectious diseases. Efforts to improve healthcare accessibility and quality are crucial to enhancing the well-being and life expectancy of the population.

4. Nigeria: Nigeria, the most populous country in Africa, experiences challenges in healthcare that impact its healthy life expectancy ranking. The nation faces inadequate healthcare infrastructure, limited access to quality healthcare services, and high rates of infectious diseases. Addressing these challenges is crucial to improving the health outcomes and well-being of the population.

5. Sierra Leone: Sierra Leone, a country in West Africa, ranks low in healthy life expectancy due to numerous healthcare challenges. The country faces inadequate healthcare infrastructure, limited access to quality healthcare services, and a high burden of infectious diseases. Efforts to improve healthcare accessibility and strengthen the healthcare system are vital to improving the well-being and life expectancy of the population.

6. Eswatini: Eswatini, a small landlocked country in southern Africa, struggles with healthcare challenges that contribute to its low healthy life expectancy ranking. Limited access to quality healthcare services, high rates of infectious diseases, and a high prevalence of HIV/AIDS are some of the factors affecting the population's well-being and life expectancy.

7. Mali: Mali, a landlocked country in West Africa, faces healthcare challenges that result in a low healthy life expectancy. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases impact the well-being and life expectancy of the population. Efforts to strengthen healthcare systems and improve healthcare accessibility are crucial to addressing these challenges.

8. Afghanistan: Afghanistan, a country in Central Asia, ranks low in healthy life expectancy due to significant healthcare challenges. The nation faces limited access to quality healthcare services, inadequate healthcare infrastructure, and ongoing conflict that impacts healthcare delivery. These factors contribute to lower life expectancies and poorer health outcomes among the population.

9. Cameroon: Cameroon, located in Central Africa, faces healthcare challenges that impact its healthy life expectancy ranking. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases are among the factors that affect the well-being and life expectancy of the population. Efforts to improve healthcare accessibility and quality are essential to address these challenges.

10. Niger: Niger, a landlocked country in West Africa, ranks low in healthy life expectancy due to numerous healthcare challenges. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases contribute to

lower life expectancies and overall health outcomes. Efforts to strengthen healthcare systems and improve healthcare access are crucial in improving the well-being of the population.

These countries face significant healthcare challenges, including limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases. Addressing these challenges requires a comprehensive approach that involves strengthening healthcare systems, improving healthcare accessibility, and implementing effective public health interventions. Efforts to improve healthcare infrastructure, enhance health education, and address social and economic factors can contribute to improving the well-being and life expectancy of the populations in these countries.
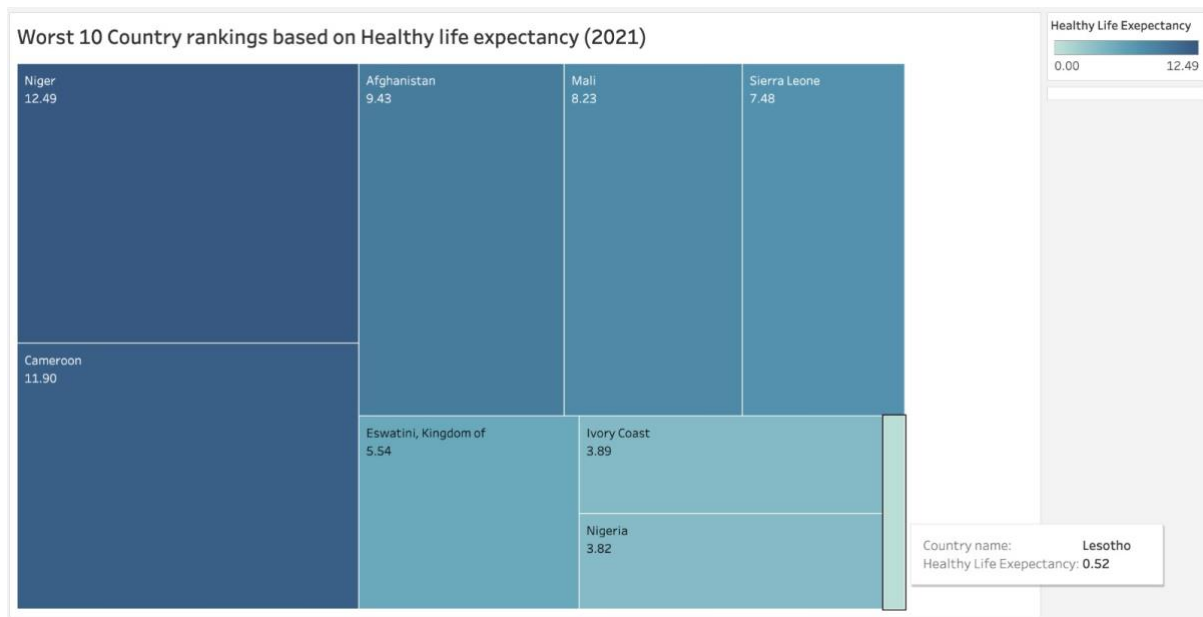
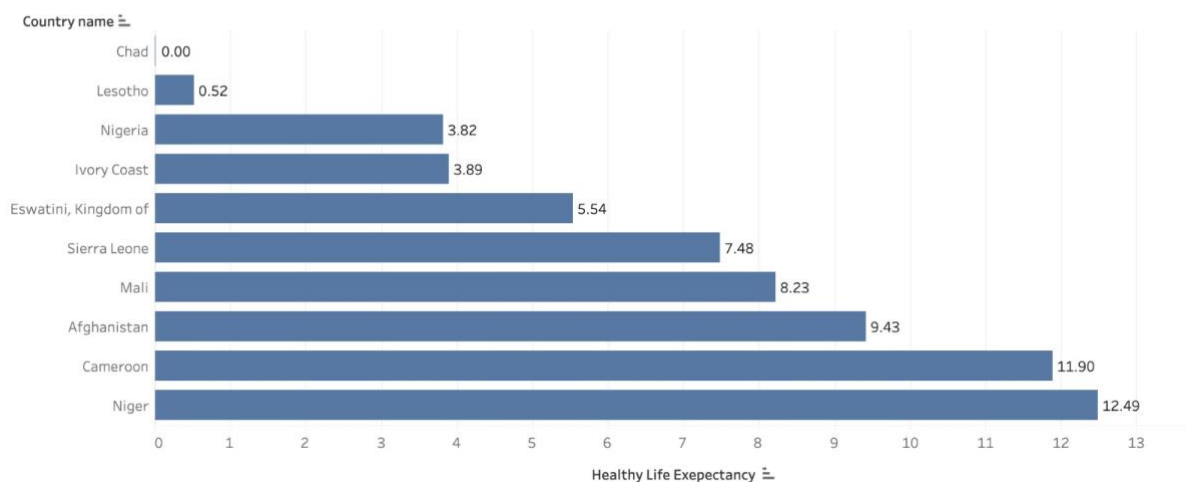Figure 24: 10 Lowest Ranked Healthy Life Expectancy 2021 in a Tree map

Figure 25: 10 Lowest Ranked Healthy Life Expectancy 2021 in a Bar chart

Worst 10 Ranked Healthy Life Expectancy countries in 2021, following the order of Chad, Lesotho, Nigeria, Ivory Coast, Eswatini, Sierra Leone, Mali, Afghanistan, Cameroon and Niger are analysed as follows:

1. Chad: Chad, a landlocked country in Central Africa, follows closely as one of the countries with the lowest healthy life expectancy. The nation faces significant healthcare challenges, including inadequate healthcare infrastructure, limited access to healthcare services, and high rates of infectious diseases. These factors contribute to a shorter life expectancy and lower overall health outcomes.

2. Lesotho: Lesotho, a landlocked country in southern Africa, ranks at the bottom in terms of healthy life expectancy. The nation faces numerous healthcare challenges, including limited access to quality healthcare services, high rates of HIV/AIDS, and a high burden

of infectious diseases. These factors contribute to shorter life expectancies and lower overall well-being among its population.

3. Nigeria: Nigeria, the most populous country in Africa, experiences challenges in healthcare that impact its healthy life expectancy ranking. The nation faces inadequate healthcare infrastructure, limited access to quality healthcare services, and high rates of infectious diseases. Addressing these challenges is crucial to improving the health outcomes and well-being of the population.

4. Ivory Coast: Ivory Coast, also known as Côte d'Ivoire, faces healthcare challenges that result in a low healthy life expectancy. The country struggles with limited access to quality healthcare services, insufficient healthcare infrastructure, and high rates of infectious diseases. Efforts to improve healthcare accessibility and quality are crucial to enhancing the well-being and life expectancy of the population.

5. Eswatini: Eswatini, a small landlocked country in southern Africa, struggles with healthcare challenges that contribute to its low healthy life expectancy ranking. Limited access to quality healthcare services, high rates of infectious diseases, and a high prevalence of HIV/AIDS are some of the factors affecting the population's well-being and life expectancy.

6. Sierra Leone: Sierra Leone, a country in West Africa, ranks low in healthy life expectancy due to numerous healthcare challenges. The country faces inadequate healthcare infrastructure, limited access to quality healthcare services, and a high burden of infectious diseases. Efforts to improve healthcare accessibility and strengthen the healthcare system are vital to improving the well-being and life expectancy of the population.

7. Mali: Mali, a landlocked country in West Africa, faces healthcare challenges that result in a low healthy life expectancy. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases impact the well-being and life expectancy of the population. Efforts to strengthen healthcare systems and improve healthcare accessibility are crucial to addressing these challenges.

8. Afghanistan: Afghanistan, a country in Central Asia, ranks low in healthy life expectancy due to significant healthcare challenges. The nation faces limited access to quality healthcare services, inadequate healthcare infrastructure, and ongoing conflict that impacts healthcare delivery. These factors contribute to lower life expectancies and poorer health outcomes among the population.

9. Cameroon: Cameroon, located in Central Africa, faces healthcare challenges that impact its healthy life expectancy ranking. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases are among the factors that affect the well-being and life expectancy of the population. Efforts to improve healthcare accessibility and quality are essential to address these challenges.

10. Niger: Niger, a landlocked country in West Africa, ranks low in healthy life expectancy due to numerous healthcare challenges. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases contribute to

lower life expectancies and overall health outcomes. Efforts to strengthen healthcare systems and improve healthcare access are crucial in improving the well-being of the population.

These countries face significant healthcare challenges, including limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases. Addressing these challenges requires a comprehensive approach that involves strengthening healthcare systems, improving healthcare accessibility, and implementing effective public health interventions. Efforts to improve healthcare infrastructure, enhance health education, and address social and economic factors can contribute to improving the well-being and life expectancy of the populations in these countries.
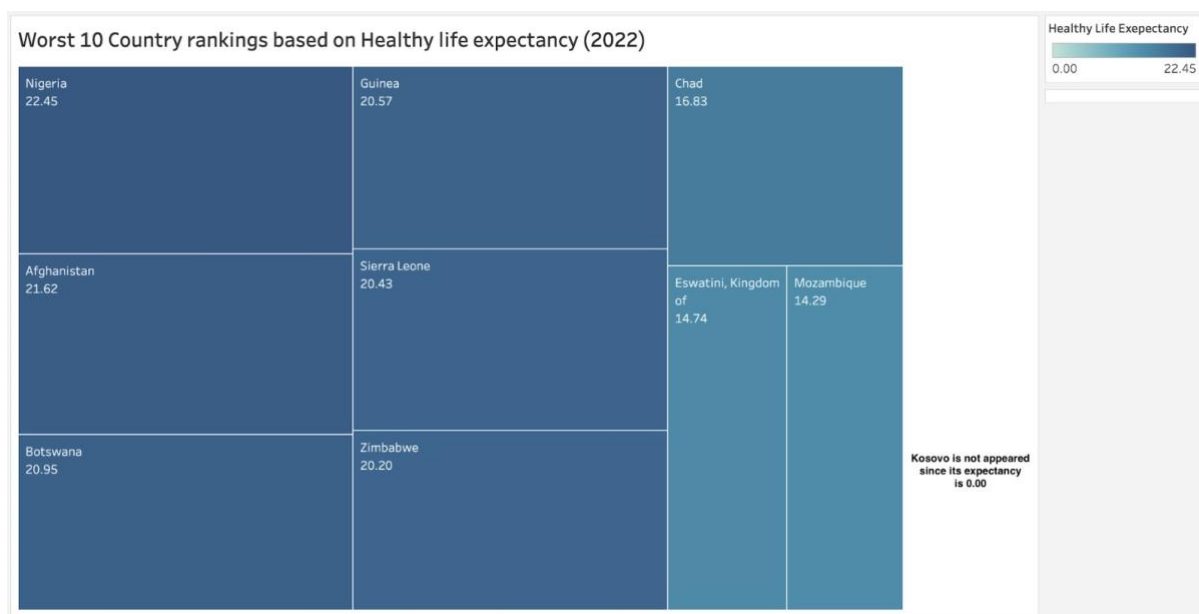
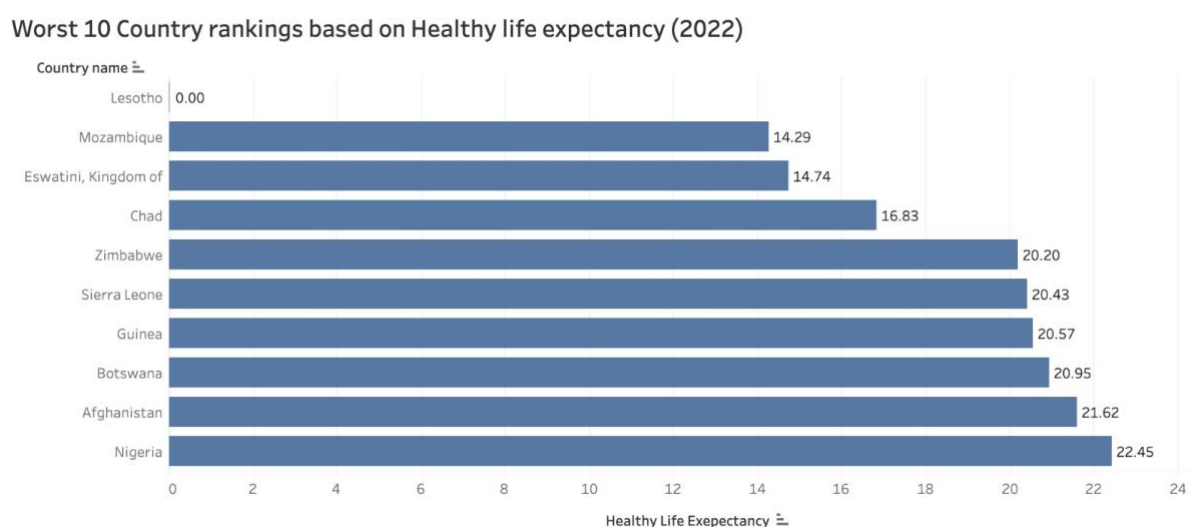Figure 26: 10 Lowest Ranked Healthy Life Expectancy 2022 in a Tree map

Figure 27: 10 Lowest Ranked Healthy Life Expectancy 2021 in a Bar chart

Worst 10 Ranked Healthy Life Expectancy countries in 2021, following the order of Lesotho, Mozambique, Eswatini, Chad, Zimbabwe, Sierra Leone, Guinea, Botswana, Afghanistan and Nigeria are analysed as follows:

1. Lesotho: Lesotho, a small landlocked country in southern Africa, ranks at the bottom in terms of healthy life expectancy. The nation faces numerous healthcare challenges, including high rates of HIV/AIDS, limited access to quality healthcare services, and a high burden of infectious diseases. These factors contribute to shorter life expectancies and lower overall well-being among its population.

2. Mozambique: Mozambique, a country in southeastern Africa, faces significant healthcare challenges that impact its healthy life expectancy. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious

diseases are among the factors affecting the well-being and life expectancy of the population. Efforts to improve healthcare accessibility and strengthen healthcare systems are crucial to address these challenges.

3. Eswatini: Eswatini, a small landlocked country in southern Africa, struggles with healthcare challenges that contribute to its low healthy life expectancy ranking. Limited access to quality healthcare services, high rates of infectious diseases, and a high prevalence of HIV/AIDS are some of the factors affecting the population's well-being and life expectancy.

4. Chad: Chad, a landlocked country in Central Africa, faces significant healthcare challenges that result in a low healthy life expectancy. The nation grapples with limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases. These factors contribute to shorter life expectancies and lower overall health outcomes.

5. Zimbabwe: Zimbabwe, a country in southern Africa, experiences healthcare challenges that impact its healthy life expectancy ranking. Limited access to quality healthcare services, inadequate healthcare infrastructure, and economic difficulties affect the well-being and life expectancy of the population. Efforts to improve healthcare accessibility and strengthen healthcare systems are vital to address these challenges.

6. Sierra Leone: Sierra Leone, a country in West Africa, ranks low in healthy life expectancy due to numerous healthcare challenges. The country faces inadequate healthcare infrastructure, limited access to quality healthcare services, and a high burden of infectious diseases. Efforts to improve healthcare accessibility and strengthen the healthcare system are crucial to improving the well-being and life expectancy of the population.

7. Guinea: Guinea, a country in West Africa, faces healthcare challenges that result in a low healthy life expectancy. Limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases impact the well-being and life expectancy of the population. Efforts to strengthen healthcare systems and improve healthcare accessibility are crucial to addressing these challenges.

8. Botswana: Botswana, a country in southern Africa, experiences challenges in healthcare that impact its healthy life expectancy ranking. The nation faces limited access to quality healthcare services, inadequate healthcare infrastructure, and high rates of infectious diseases. These factors contribute to shorter life expectancies and lower overall health outcomes.

9. Afghanistan: Afghanistan, a country in Central Asia, ranks low in healthy life expectancy due to significant healthcare challenges. The nation faces limited access to quality healthcare services, inadequate healthcare infrastructure, ongoing conflict, and political instability that impacts healthcare delivery. These factors contribute to lower life expectancies and poorer health outcomes among the population.

10. Nigeria: Nigeria, the most populous country in Africa, experiences challenges in healthcare that impact its healthy life expectancy ranking. The nation faces inadequate healthcare infrastructure, limited access to quality healthcare services, and high rates of

infectious diseases. These factors contribute to shorter life expectancies and lower overall health outcomes.

These countries face significant healthcare challenges, including limited access to quality healthcare services, inadequate healthcare infrastructure, high rates of infectious diseases, and socio-economic disparities. Addressing these challenges requires a comprehensive approach that involves strengthening healthcare systems, improving healthcare accessibility, implementing effective public health interventions, and addressing social and economic factors. Efforts from both local governments and international organizations are crucial in improving the health outcomes and overall well-being of the populations in these countries.

Question 3: What is the relationship between each happiness score determinant factor and the relationship against the happiness score?
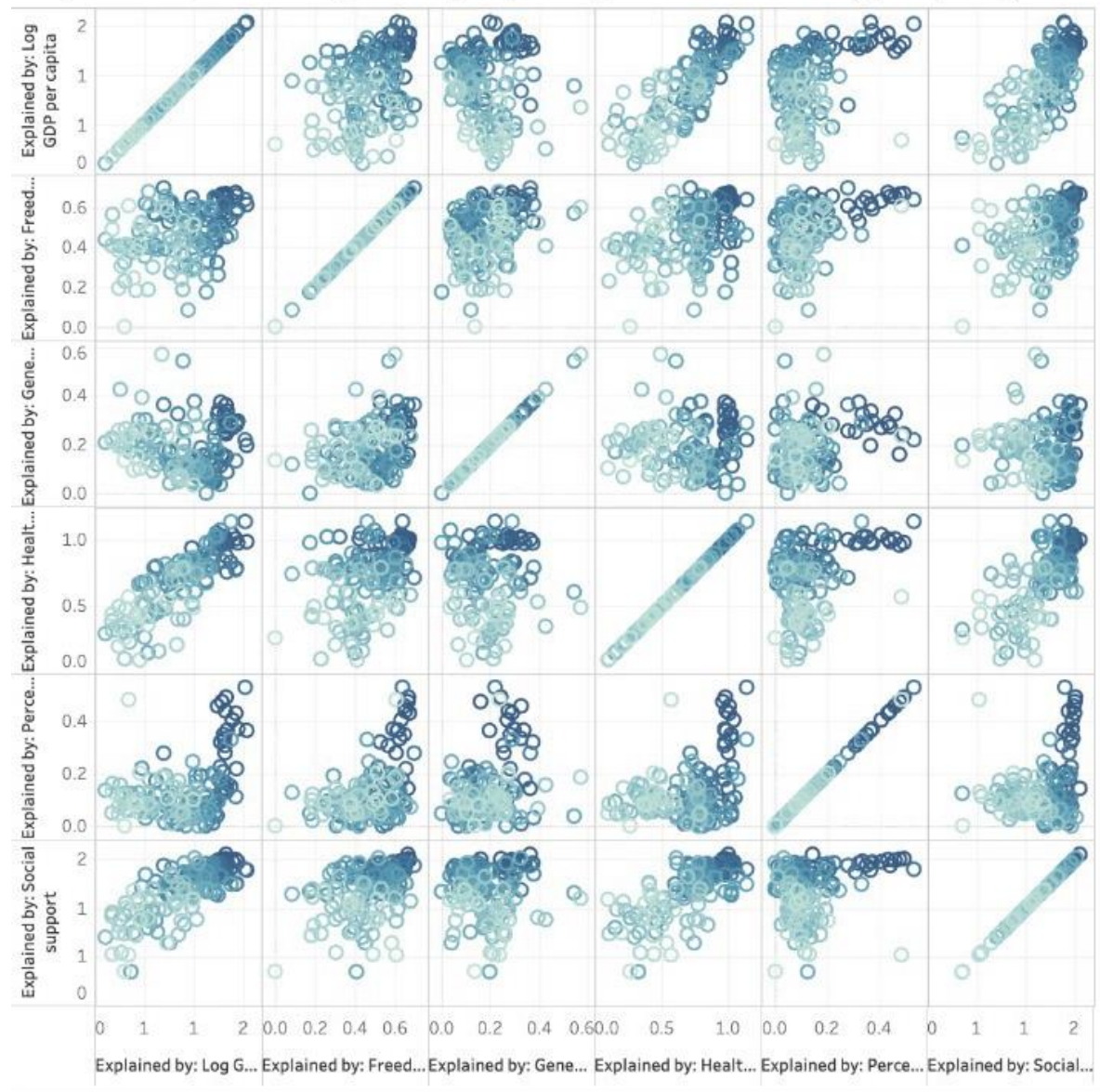
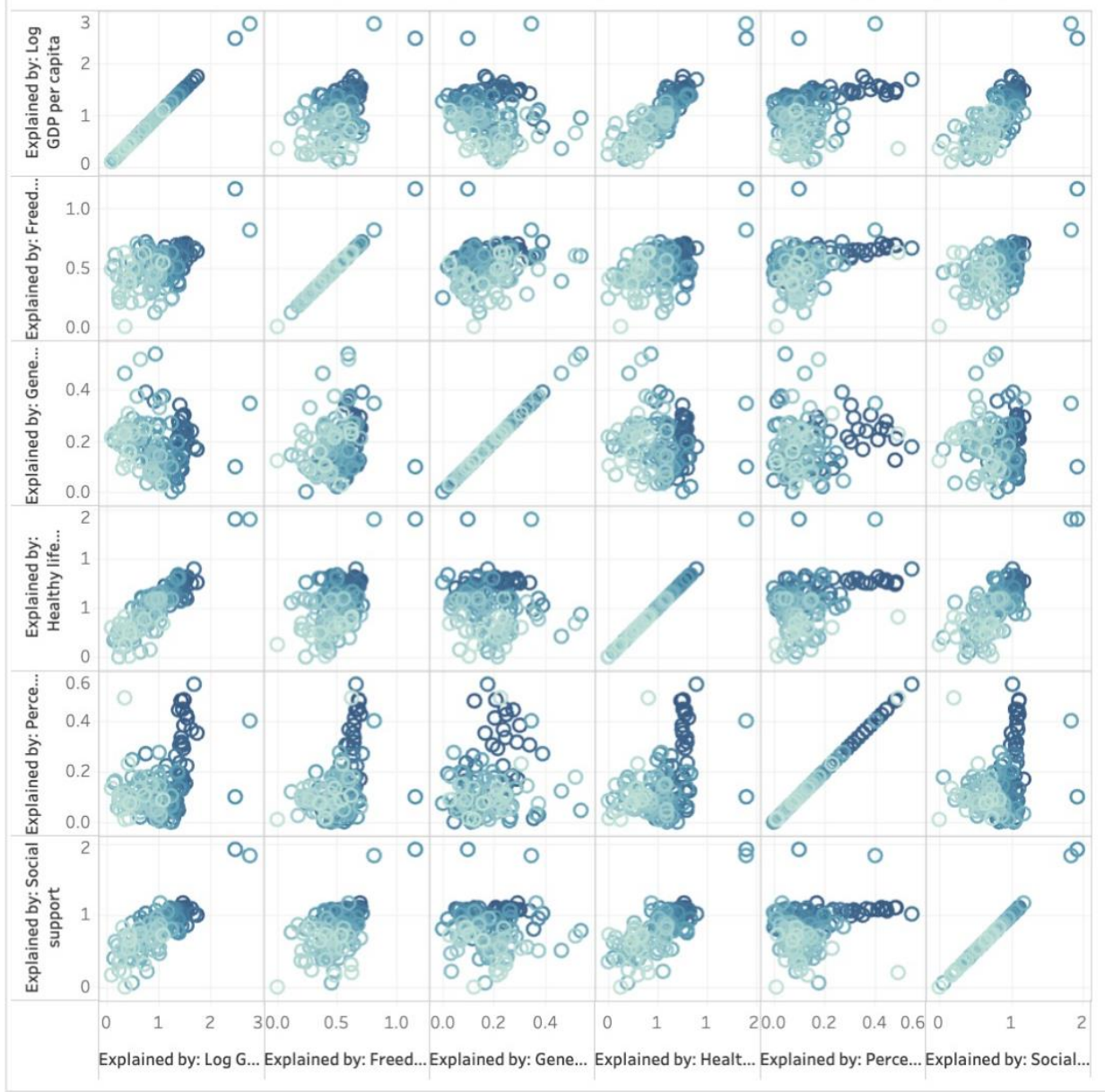Figure 28: The relationship between each happiness determinant factor 2020

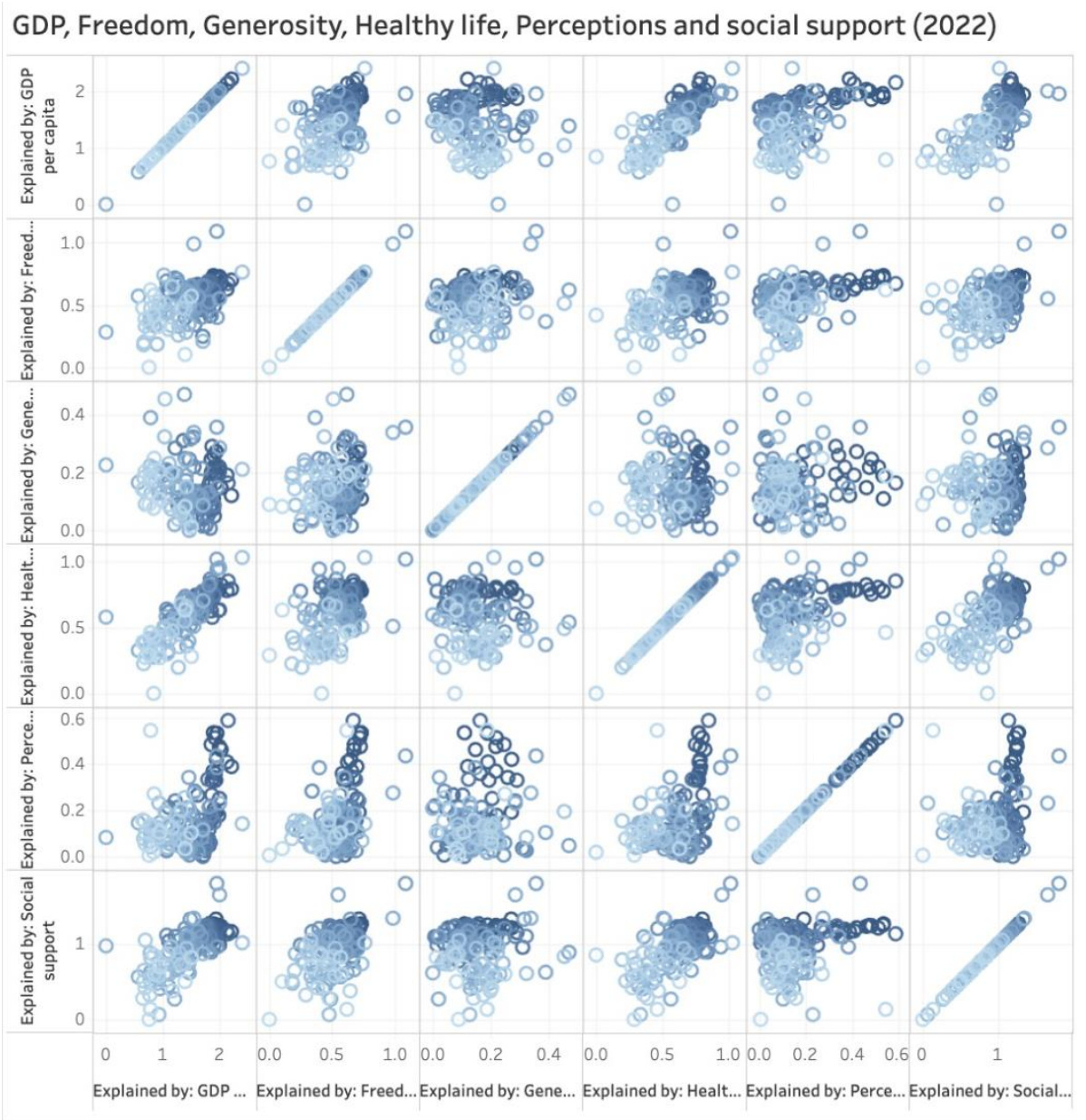Figure 29: The relationship between each happiness determinant factor 2021

Figure 30: The relationship between happiness determinant each factor 2022

The Global Happiness Score is determined by six main factors: Logged GDP per capita, Social Support, Healthy Life Expectancy, Freedom to make life choices, Generosity, and Perception of Corruption. Each of these plays a significant role in shaping the happiness of individuals and societies. Here's an analysis of the relationships between each of these factors:

1. Logged GDP per capita: This economic measure is a key determinant of happiness. Generally, wealthier countries tend to have higher happiness scores. A higher GDP per capita typically suggests a higher standard of living, with greater access to goods and services, which can contribute to an overall sense of well-being. Moreover, wealthier countries usually have more resources to invest in healthcare, education, and social safety nets, all of which can contribute to happiness.

2. Social Support: This factor pertains to the feeling of being able to rely on someone in times of trouble. Countries with stronger social networks and community ties tend to have higher happiness scores. Social support can act as a buffer against psychological stress, improve mental health, and contribute to a sense of belonging, all of which can increase happiness.

3. Healthy Life Expectancy: This indicator measures the average number of years a person is expected to live in "good health". Countries with higher healthy life expectancies tend to have higher happiness scores. Good health enables individuals to fully participate in life and enjoy its experiences, contributing to a higher sense of happiness.

4. Freedom to Make Life Choices: This factor refers to the extent to which individuals feel they have the freedom to make key decisions about their lives. Countries where people feel they have more personal freedom tend to have higher happiness scores. The ability to choose one's path in life contributes to a sense of autonomy and self-determination, key components of happiness.

5. Generosity: This factor gauges the extent to which people are willing to donate their time or resources to others. Countries with higher levels of generosity tend to have higher happiness scores. Generous behaviour can enhance social relationships, foster a sense of community, and boost self-esteem, all of which can increase happiness.

6. Perception of Corruption: This factor measures the perceived level of corruption within a country. Countries with lower levels of perceived corruption tend to have higher happiness scores. Low corruption indicates a higher level of trust in institutions and a sense of fairness in society, contributing to happiness.

In summary, while each of these factors individually contributes to happiness, they also interact in complex ways. For example, a high GDP per capita might enable better healthcare, contributing to a higher Healthy Life Expectancy. Similarly, high Social Support might encourage Generosity. Thus, the synergy between these factors is essential for achieving a high Global Happiness Score.
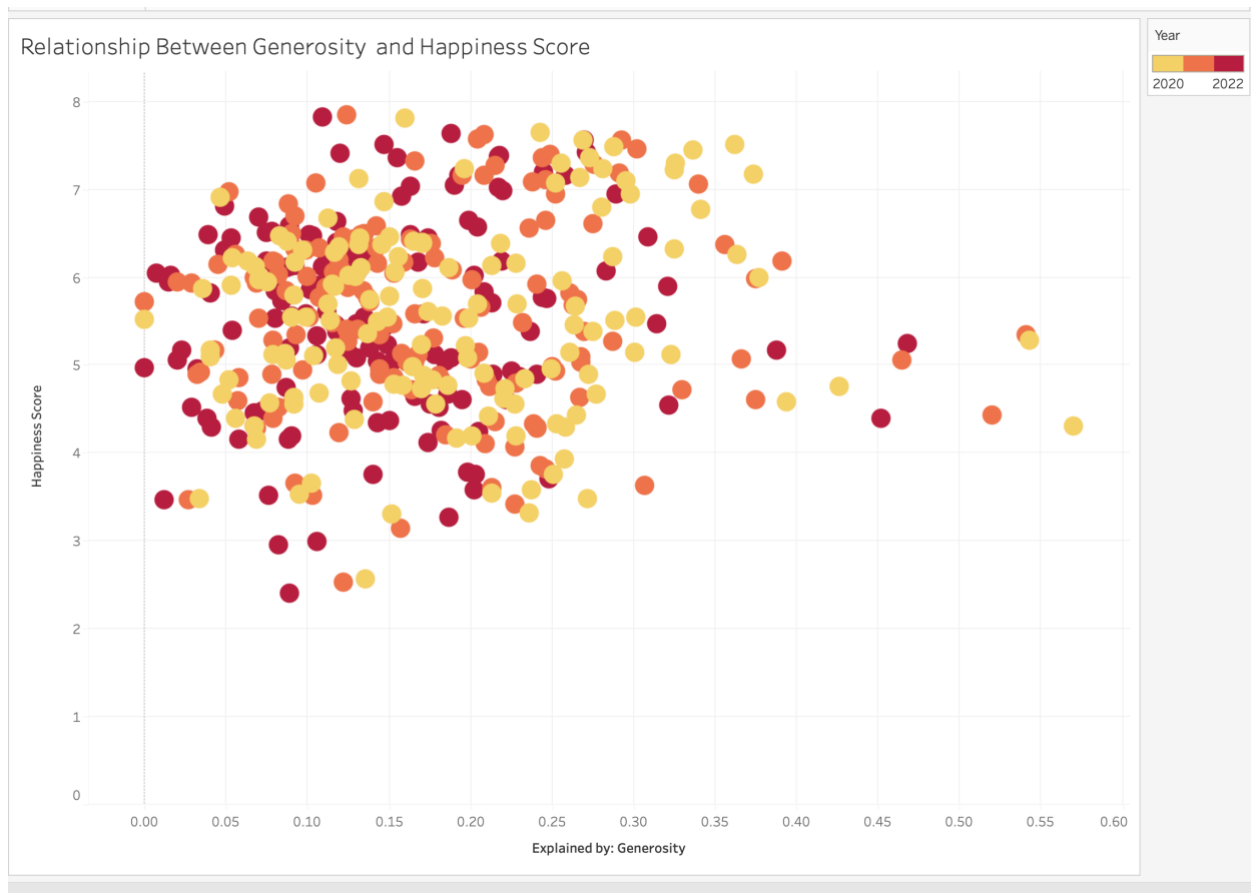
Figure 31: Relationship between Generosity and Happiness Score

The relationship between Generosity and Happiness Score can be complex and may not always follow a straightforward linear pattern. While one might initially expect that higher levels of generosity would correlate directly with higher levels of happiness, the data indicating that moderately generous and less generous countries have higher happiness scores than very generous countries suggests a nuanced relationship.

Several factors could explain this intriguing pattern:

1. Economic Considerations: In countries with higher GDP per capita (which often correlates with higher happiness scores), individuals may have more resources to meet their needs and wants, leaving less necessity for generosity as a form of social support. In contrast, in lower-income countries (where happiness scores may be lower), there might be a greater need for generosity to help meet basic needs, resulting in higher levels of reported generosity.

2. Cultural Factors: Cultural norms and expectations could also play a role. In some societies, less emphasis might be placed on generosity, but other factors contributing to happiness (such as strong social connections, low corruption, or high life expectancy) may be present, leading to high happiness scores despite lower generosity.

3. Perception and Expectations: The way generosity is perceived and valued can vary from one society to another. In some societies, extreme generosity may be seen as a

necessity due to societal issues rather than a voluntary act of kindness, which might not contribute as much to happiness.

4. Resource Distribution: In some societies, resources might be distributed in such a way that many people's basic needs are met, reducing the perceived need for personal generosity. These societies might score higher on happiness measures due to this widespread provision of resources.

5. Role of Other Variables: The Happiness Score is a composite measure, including variables like GDP per capita, social support, healthy life expectancy, freedom to make life choices, and perception of corruption. These factors might be contributing more to the Happiness Score in less generous countries, offsetting the lower generosity score.

In conclusion, while generosity often contributes to happiness, it's not the only factor. It's also possible for countries to achieve high happiness scores through a combination of other strong, positive social, economic, and health factors. Therefore, a comprehensive understanding requires looking at generosity in the context of other determinants of happiness.
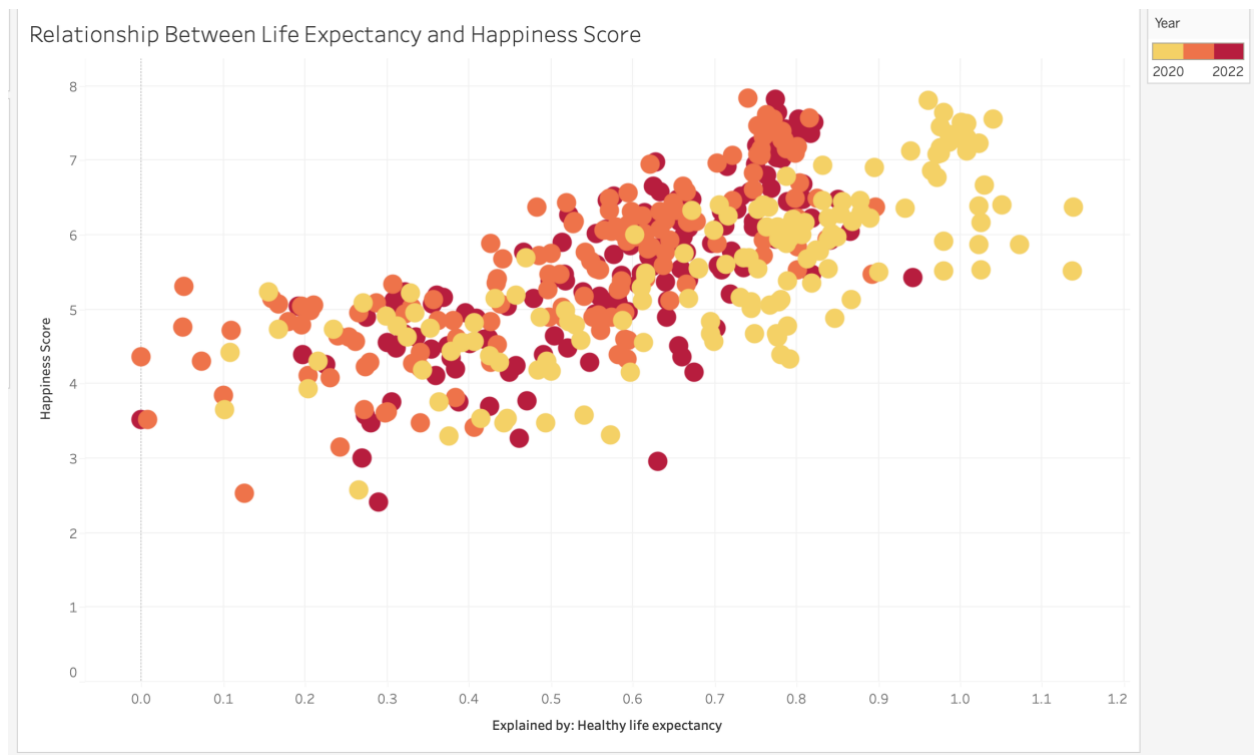

Figure 32: Relationship between Healthy life expectancy and Happiness Score

Healthy Life Expectancy is one of the significant components of the Global Happiness Score. It refers to the average number of years a person is expected to live in good health, free from serious or debilitating illness or disability. The correlation you've mentioned - that countries with higher Healthy Life Expectancy tend to have higher Happiness Scores - can be analysed in the following way:

1. Health and Well-being: Good health is a fundamental aspect of quality of life and happiness. A high Healthy Life Expectancy means that people can expect to live not

just longer, but healthier lives. This can enhance individuals' ability to engage fully in life and enjoy its experiences, increasing the overall Happiness Score.

2. Resource Availability: High Healthy Life Expectancy often indicates a country's successful investment in healthcare and preventive measures, which usually requires significant resources. Countries able to make these investments typically have higher GDPs and better access to quality food, housing, and living conditions, all of which can contribute to overall happiness.

3. Security and Peace of Mind: Knowing that one is likely to live a long, healthy life can provide a sense of security and peace of mind, reducing stress and anxiety about health issues, and therefore contribute to higher levels of happiness.

4. Societal Impact: A population with a high Healthy Life Expectancy tends to be more productive and active, contributing positively to the economy and society. This can lead to more cohesive, safer, and happier communities, further boosting the Happiness Score.

5. Indicator of Other Positive Factors: Healthy Life Expectancy often correlates with other positive societal conditions such as education, good governance, and strong social support, all of which can contribute to higher levels of happiness.

In conclusion, the relationship between Healthy Life Expectancy and the Happiness Score is multifaceted. As a person's health is fundamental to their personal well-being, it stands to reason that countries able to ensure longer, healthier lives for their citizens would have higher overall happiness levels. However, it's important to remember that Healthy Life Expectancy is just one component of happiness and must be viewed alongside other factors such as economic stability, social support, freedom, and trust.

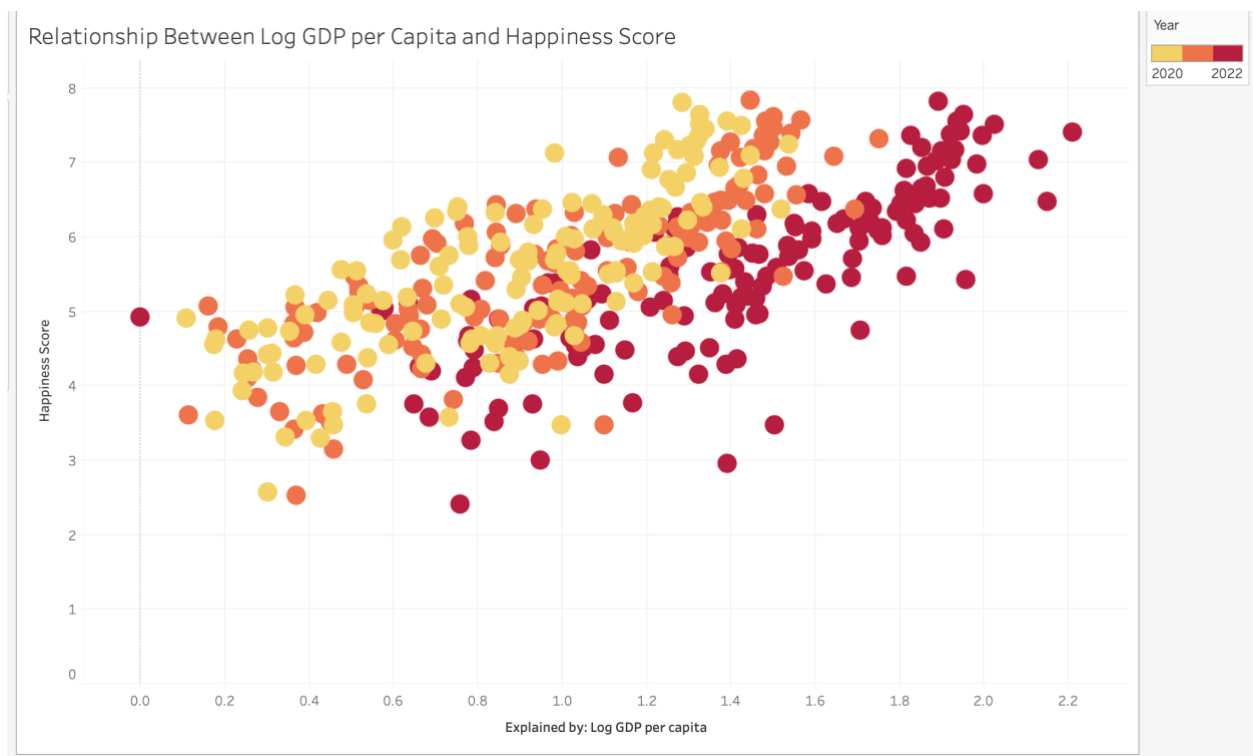Relationship Between Log GDP per Capita and Happiness Score

Figure 33: Relationship between Log GDP per Capita and Happiness Score

The relationship between Log GDP per Capita and Happiness Score is a widely studied aspect of the economics of well-being. GDP per Capita represents the average economic output per person, providing an approximation of the average wealth of each resident within a country. When we look at the logarithm of GDP per Capita (Log GDP per Capita), we are examining relative economic differences on a percentage basis rather than an absolute dollar amount.

An upward trend in the graph, where a higher GDP per Capita correlates with a higher Happiness Score, can be analyzed as follows:

1. Economic Stability: Higher GDP per Capita generally indicates greater economic stability, which can provide a sense of security and contribute to a higher Happiness Score. Financial stability can reduce stress related to basic survival and provide individuals with more opportunities to engage in activities that contribute to happiness.

2. Quality of Life: A higher GDP per Capita often allows for better access to quality healthcare, education, and infrastructure. These improved public goods and services can contribute to an increased standard of living, leading to a higher Happiness Score.

3. Increased Opportunities: In countries with a higher GDP per Capita, residents often have more job opportunities, better salaries, and the ability to invest in themselves and their futures, which can increase life satisfaction and, therefore, the Happiness Score.

4. Consumption Possibilities: A higher GDP per Capita usually correlates with higher individual income, which expands the range of goods and services that people can afford. Greater consumption can improve quality of life and contribute to higher levels of happiness.

5. Indicator of Other Positive Conditions: High GDP per Capita can be a proxy for other societal conditions that contribute to happiness, such as strong governance, low levels of corruption, and efficient public services.

However, while there is a positive correlation between Log GDP per Capita and Happiness Score, it's important to note that money isn't the only determinant of happiness. Other factors, such as social support, health, freedom, and generosity, also play crucial roles in determining a country's overall Happiness Score. Therefore, a comprehensive understanding requires examining GDP per Capita in the context of these other factors.
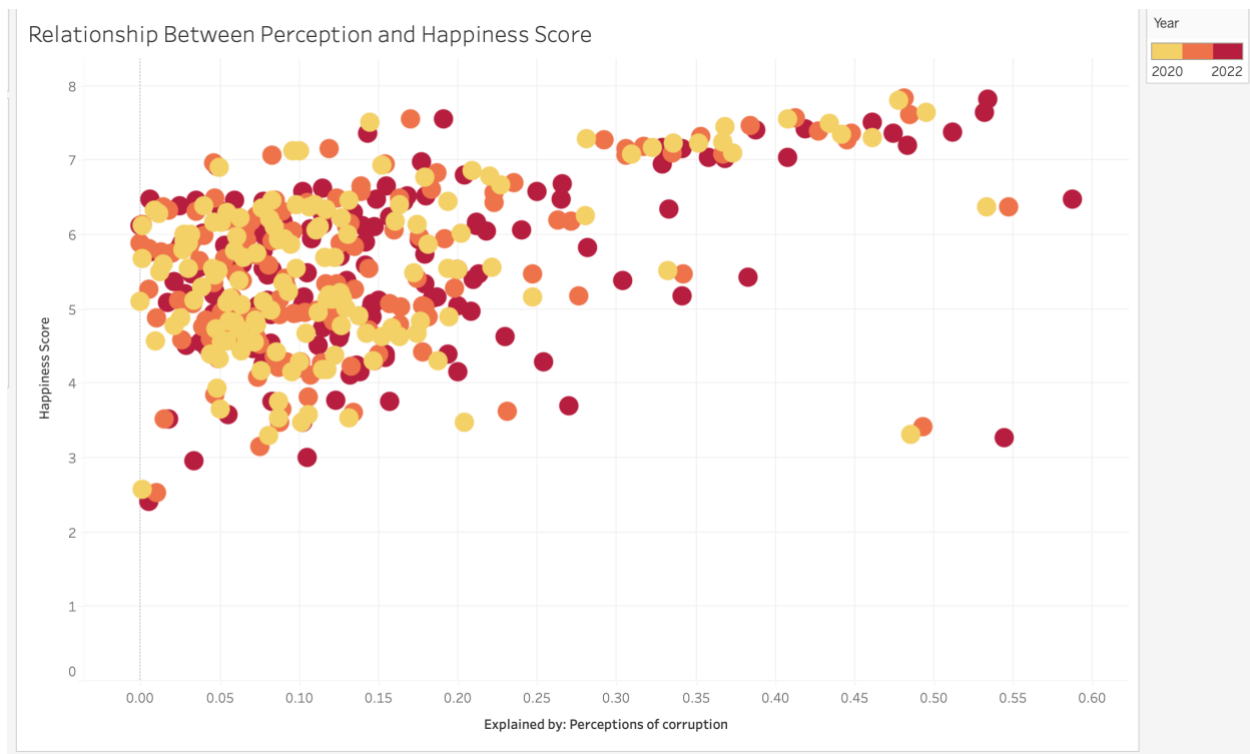
Figure 34: Relationship between Perception of Corruption and Happiness Score

The relationship between Perception of Corruption and Happiness Score can be quite complex. Typically, one would assume that a higher Perception of Corruption would lead to lower Happiness Scores, as corruption is often associated with a lack of trust in institutions, economic inequality, and social instability. However, your observation from the graph suggesting a higher Perception of Corruption correlating with a higher Happiness Score in some cases, particularly in less developed countries, calls for a more nuanced analysis.

1. Low Expectations: In some less developed countries, corruption may be perceived as a norm or an unavoidable part of life. In such cases, the impact of the Perception of Corruption on happiness might be less pronounced because people have lower expectations of institutional integrity.

2. Resilience and Adaptation: People are remarkably adaptable and can find happiness even under less ideal circumstances. In environments where corruption is prevalent, individuals and communities might develop coping mechanisms that allow them to maintain a certain level of happiness.

3. Relative Perceptions: Happiness is a relative and subjective measure. People's assessment of their happiness might be based more on their immediate social and economic conditions rather than on abstract notions of institutional integrity.

4. Economic Conditions: Despite high Perception of Corruption, some less developed countries might have other factors that contribute positively to happiness, such as strong social bonds, cultural factors, or recent improvements in economic conditions.

5. Misinterpretation of Corruption Perception: The perceived level of corruption might sometimes be inflated by a free press and transparent institutions that report

corruption incidents diligently. Conversely, in more repressive societies, corruption might be underreported, leading to a lower perceived level.

Nevertheless, it's worth noting that this observed pattern is somewhat unusual, and a comprehensive understanding of it would require more in-depth, country-specific analysis. Additionally, the presence of corruption can be a significant impediment to long-term development and prosperity, which are key to sustainable happiness. It's important to continue advocating for good governance and low corruption levels, even if their impact on happiness isn't always straightforward.
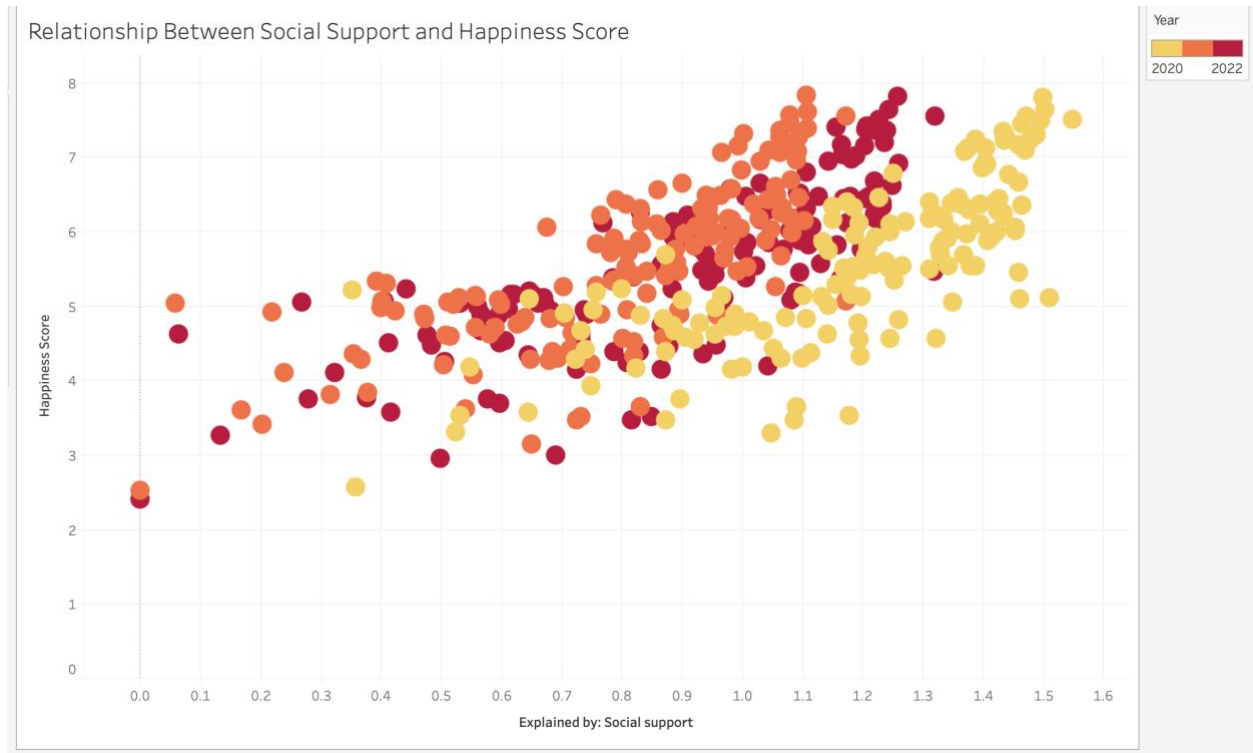

Figure 35: Relationship between Social Support and Happiness Score

The relationship between Social Support and Happiness Score is a key aspect of understanding societal happiness. Social support refers to the psychological and material resources provided by a social network, which are used to help individuals cope with stress and adversity. The correlation you've mentioned, where countries with higher levels of social support tend to have higher Happiness Scores, can be analyzed as follows:

1. Emotional Well-being: High social support contributes to emotional well-being by providing individuals with a sense of belonging, acceptance, and security. This increases resilience to stressful situations, reducing anxiety and depression rates and, therefore, increasing overall happiness.

2. Resource Sharing: Social support networks can provide resources such as advice, assistance, and material goods, which can help individuals navigate through life challenges. This not only provides practical help but also contributes to a sense of societal cohesion and mutual aid, enhancing the overall Happiness Score.

3. Sense of Value and Self-worth: Being part of a supportive social network can give individuals a sense of value and self-worth, enhancing self-esteem and life satisfaction. This sense of being valued can significantly contribute to individual and societal happiness.

4. Healthier Lifestyle: Social support can promote healthier behaviours and lifestyle choices. People who feel well-supported are more likely to engage in regular exercise, maintain a balanced diet, and seek medical care when needed. These healthy behaviours contribute to better physical health and, in turn, to a higher Happiness Score.

5. Reduced Social Isolation: A strong social support system reduces feelings of isolation and loneliness, factors that can significantly lower happiness levels. By fostering a sense of community, social support can promote higher levels of happiness.

In conclusion, the relationship between Social Support and the Happiness Score is both direct and multifaceted. By providing emotional support, sharing resources, promoting a sense of self-worth, encouraging healthier lifestyles, and reducing social isolation, social support can significantly enhance both individual and societal happiness. Hence, it is not surprising to see a higher level of social support correlating with a higher Happiness Score.
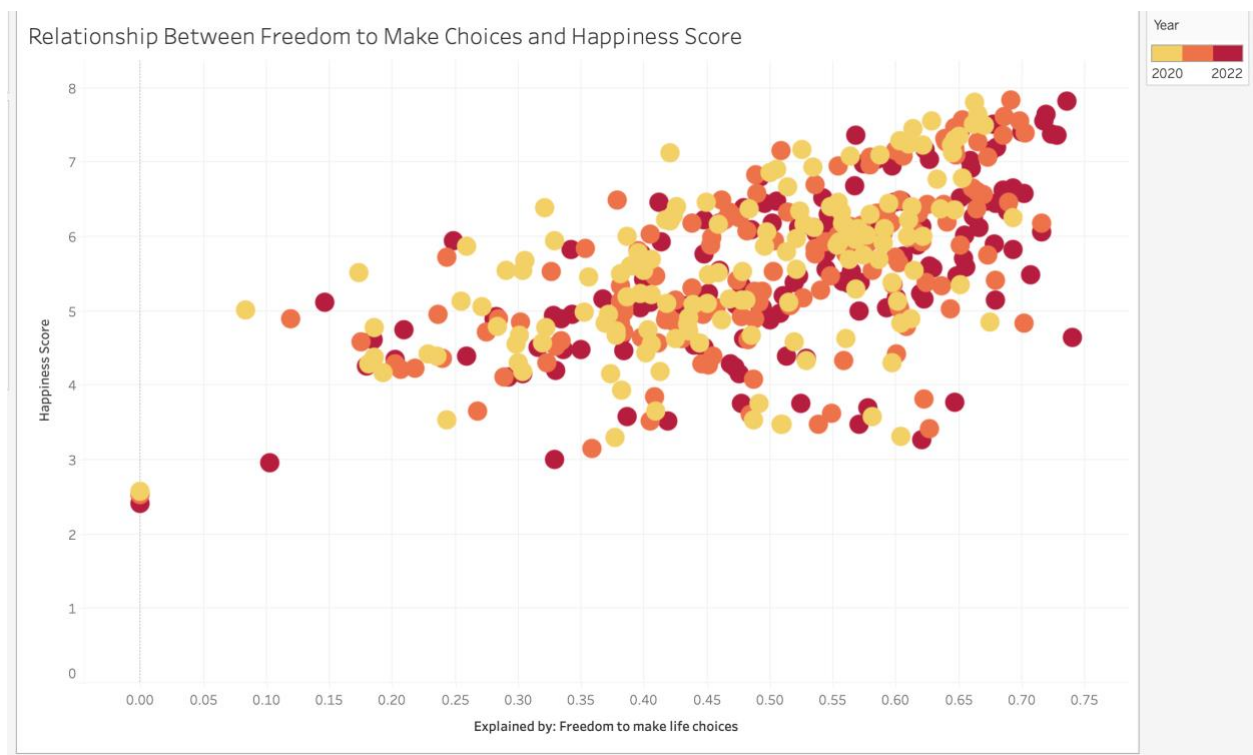

Figure 36: Relationship between Freedom to make life choices and Happiness Score

The relationship between Freedom to Make Life Choices and the Happiness Score is an important determinant of societal happiness. Freedom to Make Life Choices represents the degree to which individuals feel they have the autonomy to make personal decisions about their lives. When a positive correlation is observed, such as the higher the freedom, the higher the Happiness Score, the following points can help explain this relationship:

1. Autonomy and Control: Having the freedom to make life choices gives individuals a sense of autonomy and control over their own lives. This empowerment not only brings satisfaction but also aids in stress management, as individuals feel they have a degree of influence over situations that affect them.

2. Pursuit of Personal Goals: Freedom to make life choices allows individuals to pursue their personal goals, ambitions, and interests, which directly contribute to their life satisfaction. Whether it's choosing a career, where to live, or personal lifestyle choices, having the freedom to make these decisions can significantly boost happiness levels.

3. Expression of Identity: Having the freedom to make life choices also allows for the expression of personal identity and values, reinforcing a sense of self-worth and personal fulfillment, which are crucial components of happiness.

4. Innovation and Creativity: Societies where individuals have the freedom to make life choices often see higher levels of innovation and creativity, as individuals feel free to explore, experiment, and take risks. These activities not only bring personal satisfaction but can also contribute to economic prosperity and societal progress, thereby increasing the overall Happiness Score.

5. Democratic Values: The freedom to make life choices often correlates with democratic values and human rights, such as freedom of speech, assembly, and association. These values contribute to societal cohesion, trust in institutions, and a sense of fairness, which are all important determinants of societal happiness.

In conclusion, Freedom to Make Life Choices is a fundamental human right and a crucial determinant of individual and societal happiness. By providing individuals with autonomy, enabling the pursuit of personal goals, allowing the expression of identity, fostering innovation, and promoting democratic values, it contributes significantly to overall life satisfaction and, therefore, the Happiness Score. Thus, it is not surprising to see a positive correlation between Freedom to Make Life Choices and the Happiness Score.
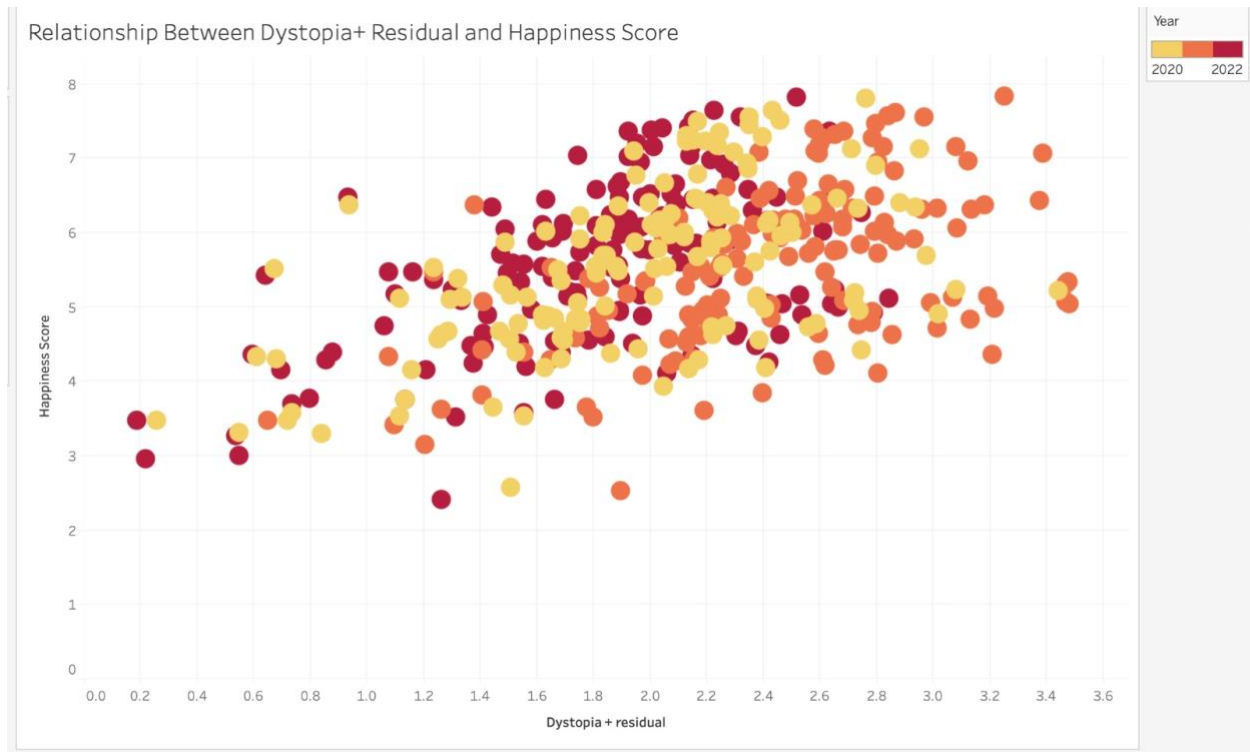
Figure 37: Relationship between Dystopia + Residual and Happiness Score

Dystopia and Residual is a somewhat complex factor within the World Happiness Report. Dystopia represents a hypothetical country that has values equal to the world's lowest national averages for each of the six key variables: GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity, and perceptions of corruption. The 'Residual' part represents the unexplained components of happiness – the discrepancy between a country's predicted happiness score (based on the six key variables) and its actual happiness score.

Analysing this relationship with the Happiness Score, where the graph indicates that the average level of dystopia and residual has the highest amount of countries with high happiness scores, could be seen as follows:

1. Identifying the Benchmark: Dystopia acts as a benchmark against which the happiness of a country is compared. Countries that score higher than the dystopian benchmark on the key factors contributing to happiness will naturally have a higher Happiness Score.

2. Highlighting the Unaccounted Factors: The residual element signifies those aspects of happiness not accounted for by the six key variables. When a country has a high residual score, it means there are other unmeasured factors positively contributing to its happiness. These might include cultural aspects, historical context, individual mindsets, societal values, or other environmental factors that enhance happiness but are not captured in the standard metrics.

3. Interpreting the Paradox: The high number of countries with high Happiness Scores at the average level of dystopia and residual may seem paradoxical but may be understood as the resilience or adaptability of human happiness. It implies that,

despite challenging circumstances (i.e., average or low scores on the six key metrics), people find sources of happiness and satisfaction in other, less tangible aspects of life.

4. Recognizing the Multidimensional Nature of Happiness: Happiness is a complex and multifaceted construct that cannot be wholly defined by objective measures. The high level of happiness scores at the average level of dystopia and residual may represent the influence of subjective experiences and individual interpretations of happiness.

In conclusion, the Dystopia and Residual element, while complex, provides important insights into the multifaceted nature of happiness. It highlights the limitations of solely relying on objective measures to assess societal happiness, emphasizing the importance of unaccounted factors and subjective experiences in contributing to overall happiness.

Summary

This assignment sought to analyze various aspects of the Global Happiness Score, including ranking, determinant factors, and their relationships to happiness. The analysis was undertaken for multiple years and involved both the top ten and bottom ten countries according to their happiness ranking. The regional happiness analysis was also conducted, which provided a comprehensive overview of global happiness trends.

Key findings include the consistent high performance of certain nations such as Finland, Denmark, and Switzerland in the top ten ranks across the years, which illustrates the effectiveness of their social and economic policies in fostering happiness. Similarly, nations such as Afghanistan and Rwanda consistently found themselves in the bottom ten, indicating persistent challenges that negatively impact their happiness scores.

Analysis of the determinant factors for the Global Happiness Score demonstrated that higher levels of GDP per capita, social support, healthy life expectancy, and freedom to make life choices typically correspond to higher happiness scores. Interestingly, nations with moderate generosity levels also tend to have higher happiness scores. A possible explanation for this could be that these nations maintain a balanced approach to generosity, which ensures both internal wellbeing and external aid.

On the other hand, countries with a high perception of corruption also had high happiness scores. However, this was mainly seen in less developed nations, suggesting other underlying factors at play.

The residual analysis demonstrated that while the measured factors are significant determinants of happiness, unmeasured factors, such as cultural aspects, historical context, and individual mindsets, also play a significant role in determining a nation's happiness.

The regional analysis demonstrated varying levels of happiness across different regions. Western Europe, North America and ANZ typically had higher happiness scores, likely due to their higher GDP per capita, social support, and freedom to make life choices. On the other hand, regions such as Sub-Saharan Africa and South Asia had lower happiness scores, largely due to economic and social challenges.

Overall, the analysis emphasizes the multidimensional nature of happiness and the need for a balanced approach in policy-making that considers economic, social, and subjective aspects of happiness.

Lesson Learnt

The lessons learned from this assignment based on these questions are:

1. Interconnectedness of Economic and Social Aspects: GDP per capita, as an economic indicator, has a significant impact on a nation's happiness. Higher GDP per capita is often associated with better public services, more job opportunities, and higher living standards, which all contribute to higher levels of happiness. This shows the interconnectedness of economic and social aspects in determining a nation's happiness.

2. Significance of Health: The importance of healthy life expectancy as a determinant of happiness cannot be overstated. Countries with higher healthy life expectancy tend to have higher happiness scores. This reinforces that health, both physical and mental, is a vital component of happiness and well-being.

3. Multidimensional Nature of Happiness: The analysis of the relationship between each determinant factor and the happiness score highlights the multidimensional nature of happiness. It is influenced by a multitude of factors - economic (like GDP per capita), social (like social support), and personal (like freedom to make life choices, and perceptions of corruption). These factors are interconnected and play a collective role in influencing the overall happiness of a nation.

4. Contextual Interpretation of Happiness: The perception of corruption and its positive correlation with happiness in some less developed countries underscores the importance of contextual interpretation of happiness. It shows that each determinant factor might not have the same impact on happiness in all contexts.

5. Need for Comprehensive Policies: To enhance a nation's happiness, policies should be comprehensive and balanced, addressing not only economic factors but also health, social support, freedom, and integrity in governance. It is critical to ensure these factors complement and reinforce each other to create an environment conducive to happiness.

6. Happiness as a Valuable Policy Goal: The assignment illustrates that happiness can be a valuable policy goal. By understanding the factors that contribute to happiness, governments can develop and implement policies that enhance these factors and thus improve the well-being of their citizens.

In summary, the lessons learned underline the complex nature of happiness and the need for holistic, balanced, and context-specific approaches in happiness research and policy-making.

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