

Mapping Global Joy: Descriptive Analytics of Subjective Well-Being from the World Happiness Report

Susan Brandy

Business & Informatics Department, Asia Metropolitan university, MALAYSIA

e-mail: susandybrandy@gmail.com

Publisher's Note: JPPM stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Corresponding Autor: Susan Brandy

Abstract

This article delves into the pursuit of happiness as a fundamental aspect of human existence, focusing on the exploration of factors contributing to subjective well-being (SWB). Drawing from the rich dataset obtained from the January 2019 release of the Gallup World Poll (GWP) and the World Happiness Report of 2019, spanning the years 2005 to 2018, our descriptive analytics offer a comprehensive analysis of global happiness. Through an examination of individuals' perceptions across diverse cultures and societies, this research elucidates key findings, revealing nuanced insights into the complex interplay of societal, economic, and personal elements that influence well-being on a global scale. This article contributes to a deeper understanding of the intricate fabric of happiness trends, patterns, and influencing factors, providing valuable insights for researchers and policymakers alike.

Keywords—Data analytics, Global trends, Descriptive analytics, Life satisfaction

1 Introduction

The World Happiness Report represents a pioneering examination of global well-being, categorizing 156 countries based on the perceived happiness of their residents [1]. In its 2019 edition, the report specifically delves into the intersection of happiness and community. This entails a comprehensive exploration of how happiness has evolved over the past decade, considering the impact of technological advancements, shifting social norms, conflicts, and governmental policies [1]. The focus of the World Happiness Report 2019 centers on three key elements: the relationship between government and happiness, the influence of prosocial behavior, and the evolution of information technology.

Utilizing life evaluations from 2016 to 2018, the World Happiness Report 2019 constructs annual country rankings. These rankings illustrate the shifts in happiness over time and emphasize the interplay of various factors. Notably, the report identifies six key variables, or predictors, crucial in explaining the variations in national annual average scores from 2005 to 2018. These variables encompass GDP per capita, social support, life expectancy, freedom to make life choices, generosity, and the perception of a country's corruption. Through this nuanced exploration, the World Happiness Report provides a multifaceted understanding of the dynamics shaping happiness on a global scale.

GDP per capita, contextualized within Purchasing Power Parity (PPP) and converted to constant 2011 international dollars, is referenced from the World Bank's World Development Indicators (WDI) issued on November 14, 2018. Given the unavailability of GDP data for 2018 when the World Happiness Report 2019 commenced, the authors relied on country-specific forecasts of real GDP growth from the OECD Economic Outlook No. 104 (issued in November 2018) and the World Bank's Global Economic Prospects (updated until July 6, 2018). These forecasts were adjusted for population growth to extend the GDP time series from 2017 to 2018. The natural logarithm of GDP per capita is utilized in the equation adjustments, as it better aligns with the data than GDP per capita [1].

©2024 Susan Brandy



Life Expectancy (L.E.) is gauged through the time series of healthy life expectancy at birth, relying on data from the World Health Organization's (WHO) Global Health Observatory data repository [1]. Interpolation and extrapolation techniques are applied to align the data with the sample period of the report, with interpolation determining intermediate values from known discrete values, and extrapolation generating statistical forecasts based on historical trends anticipated for future time periods [2].

Social Support (S.S.) is measured by the national average of binary answers (0 or 1) derived from the Gallup World Poll (GWP) question: "Do you have relatives or friends you can count on to aid you whenever you need them, or not?" [1]. Similarly, the variable measuring freedom to make life choices is determined by the national average of binary answers (0 or 1) from the GWP question: "Are you satisfied or dissatisfied with your freedom to choose what you do with your life?" [1]. Generosity (Gen.) is captured in the dataset by calculating the remainder after scaling back the national average of GWP answers to the question "Have you donated money to a charity in the past month on GDP per capita?" [1]. Lastly, the variable Perception of a Country's Corruption (P.O.C.) is assessed through the average of binary responses to two GWP questions: "Is corruption widespread across the government or not?" and "Is there a lot of corruption within businesses?" In cases where statistics on government corruption are unavailable, the perception of business corruption is employed as a proxy for the overall perception of corruption [1].

2 Descriptive Analytics

Figure 1 illustrates the top five happiest countries among a total of 156 nations, with Finland, Denmark, Norway, Iceland, and the Netherlands securing the highest positions. Finland claims the top spot with a happiness score of 7.7690, while the Netherlands, with a score of 7.4880, holds the fifth position. The countries are arranged in descending order based on their happiness scores [3]. Finland's distinction as the happiest country is attributed primarily to its free and relaxed lifestyle. Additionally, the country's culture fosters a welcoming atmosphere, emphasizing cooperation over competitiveness [4]. Despite minor variations in happiness scores among the top five countries, the citizens residing in these nations generally express high satisfaction across various dimensions, encompassing social, economic, and political aspects.

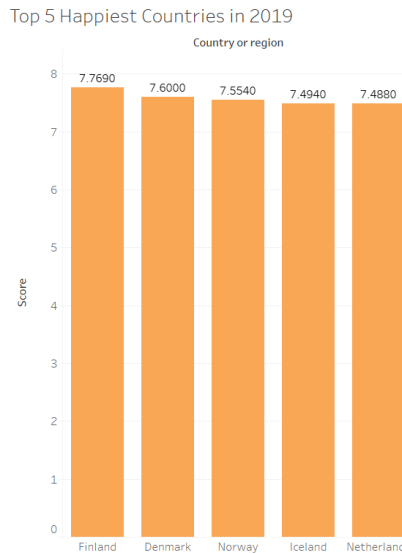


Figure 1. Top FIVE Happiest Countries in 2019

Figure 2 shows the Bottom Five Happiest Countries, which, in descending order, include Rwanda, Tanzania, Afghanistan, the Central African Republic, and South Sudan. These nations hold the lowest happiness scores among the 156 countries assessed in the year 2019. Rwanda, with a happiness score of only 3.3340, has the highest happiness score among the Bottom Five, while South Sudan, with a score of 2.8530, is the least happy country among the 156 nations and within the Bottom Five. South Sudan's ranking as the least happy country is attributed to significant challenges, including a high level of food insecurity affecting 60 percent of its citizens and a violent civil war that has claimed an estimated 400,000 lives [5], [6]. Additionally, Rwanda, led by authoritarian President Paul Kagame, faces happiness challenges associated with censorship and self-censorship. Press freedom is limited

in Rwanda, with local journalists risking severe consequences for disseminating information perceived as harmful to the government. Foreign journalists also encounter difficulties obtaining the necessary visas and accreditation to report in Rwanda [7], [8].

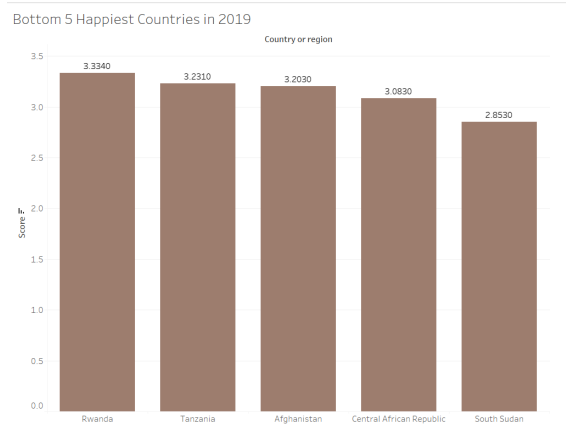


Figure 2. Bottom FIVE Happiest Countries in 2019

Figures 3, 4, and 5 provide insights into the correlation between a country's generosity and its happiness score. For instance, a generosity score of 0.0580 corresponds to a happiness score ranging approximately between 5.1 and 5.6, as illustrated in Figure 4 below. However, when examining Figure 13, it becomes evident that there are instances where countries exhibit high generosity but possess lower happiness scores compared to countries with lower generosity. This observation highlights the complexity of factors influencing a country's happiness score, emphasizing that higher generosity alone does not necessarily dictate a higher happiness score. Numerous variables contribute to a country's overall happiness, creating a nuanced interplay that extends beyond individual factors.

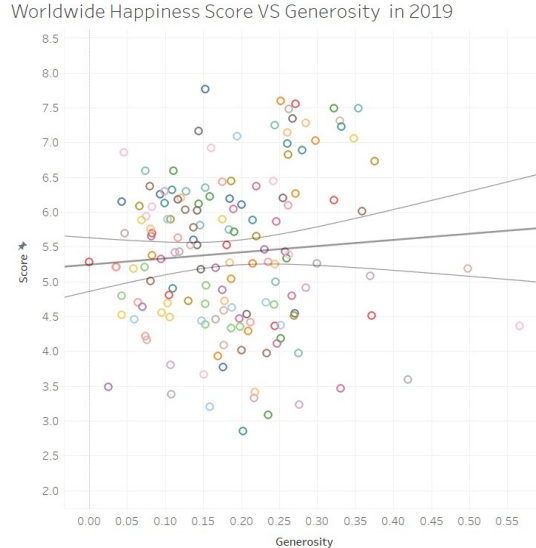


Figure 3. Worldwide Happiness Score

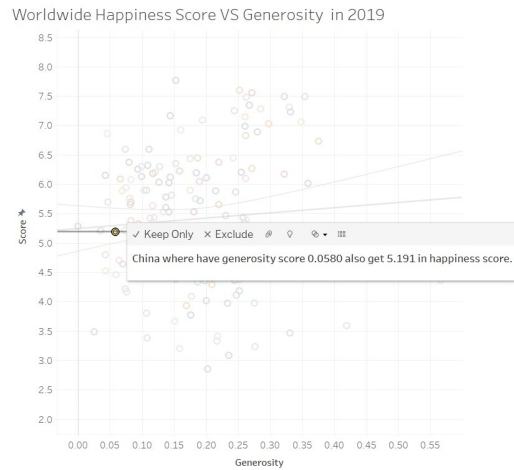


Figure 4. Happiness Score and Generosity score of China

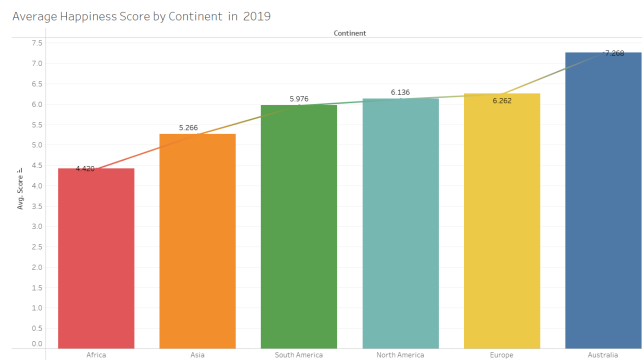


Figure 5. Average Happiness Score by Continent in 2019

This bar chart underscores a crucial point: Russia is categorized within the European continent. The Australia continent, encompassing Australia and New Zealand, boasts the highest average happiness score at 7.268. This elevated ranking may be attributed to the fact that the Australia continent comprises only two countries, in contrast to other continents with a larger number of countries. Conversely, the African continent exhibits the lowest average happiness score, standing at 4.420. This can be attributed to the presence of four of the bottom five happiest countries—Rwanda, Tanzania, Central African Republic, and South Sudan—within Africa [5], [6], [7], [8]. These specific nations significantly contribute to lowering the continent's average happiness score, as their citizens grapple with issues such as poverty, limited freedoms, and a pervasive climate of fear stemming from war and governmental regulations.

3 Predictive Analytics

The presented Figure 5 comprises a dashboard featuring six charts, each illustrating the correlation between a specific independent variable and the happiness score. These variables include GDP Per Capita, Social Support, Life Expectancy, Personal Freedom, Generosity, and Perception of Corruption. Notably, GDP per capita, Social Support, and Life Expectancy demonstrate a robust relationship with the happiness score. Conversely, Personal Freedom, Generosity, and Perception of Corruption exhibit a comparatively weaker association with happiness scores. We provide the R-squared value for each chart along the linear regression line [9], [10], spanning from Figure 6 to Figure 11.

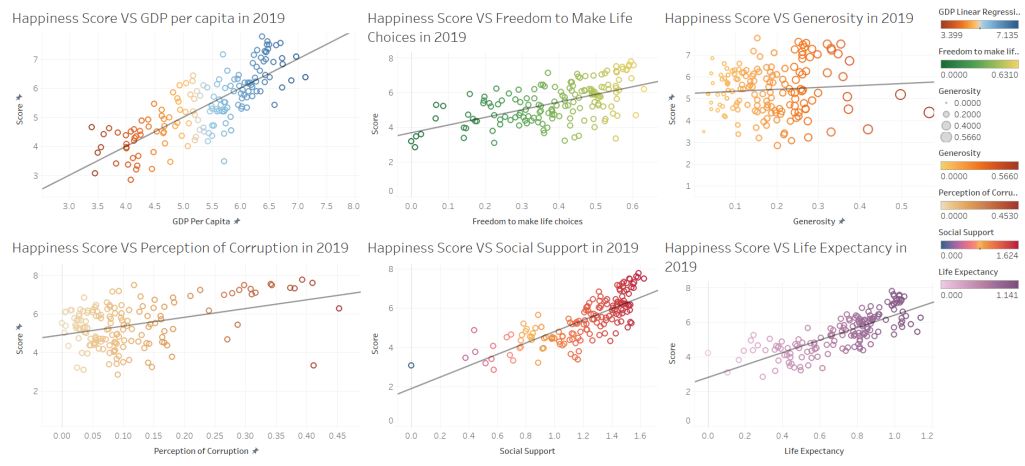


Figure 6. Simple Linear Regression of Each Independent Variable with Happiness Score

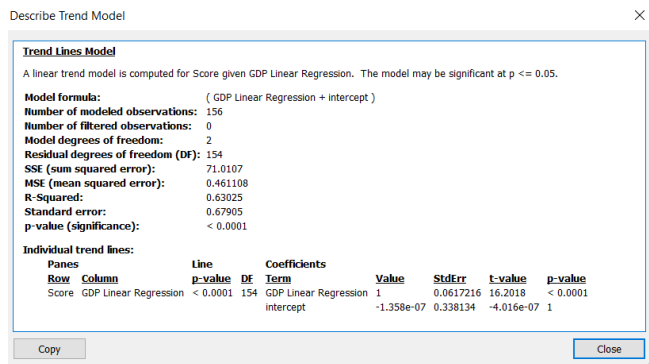


Figure 7. GDP Per Capita Trend Line Model Description

The correlation between GDP Per Capita with happiness score generate the R-squared value of 0.63025. Hence, R-value is the result of $\sqrt{0.63025}$, that is 0.79388. 0.79388 of R-value is close to 1, so it indicates that the relationship between GDP Per Capita and happiness score is strong and positive. The higher the GDP per capita of a country, the higher the country’s happiness. We can predict the happiness score from GDP per capita by using equation below.

$$\text{Score} = 1 * \text{GDP Linear Regression} + -1.35784e-07$$

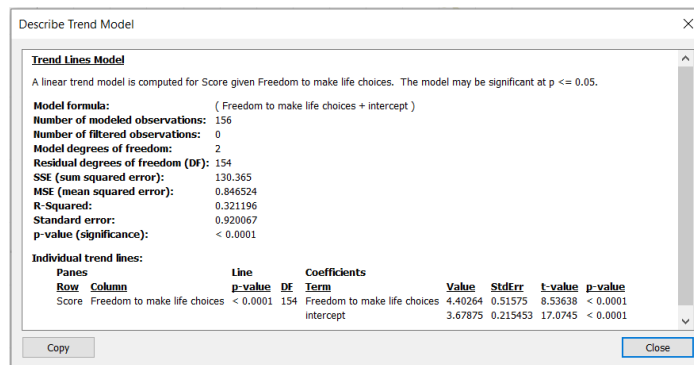


Figure 8. Personal Freedom Trend Line Model Description

The correlation between Personal Freedom with happiness score generate the R-squared value of 0.321196. Hence, R value is the result of $\sqrt{0.321196}$, that is 0.566741. 0.566741 of R-value is quite far from 1, so it

indicates that the relationship between personal freedom and happiness score is weak but positive. Most of the country that have high freedom to make life choices normally have more happiness. However, there are also some countries have low happiness although they have much personal freedom. We can predict the happiness score from personal freedom by using equation below.

$$\text{Equation: Score} = 4.40264 * \text{Freedom to make life choices} + 3.67875$$

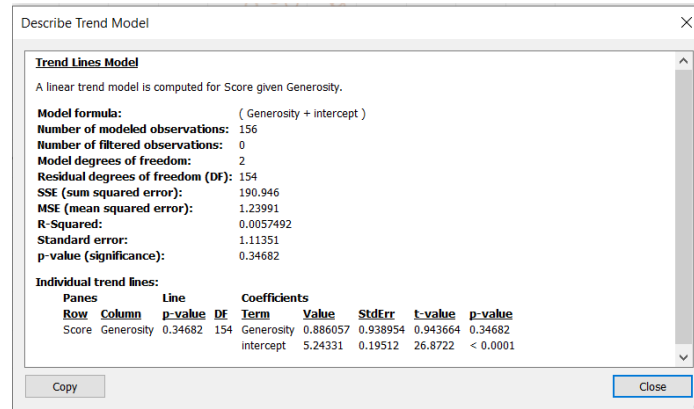


Figure 9. Generosity Trend Line Model Description

The correlation between Generosity with happiness score generate the R-squared value of 0.0057492. Hence, R value is the result of $\sqrt{0.0057492}$, that is 0.07582347. 0.07582347 of R-value is very far from 1, so it indicates that the relationship between generosity of a country and happiness score of a country is weak. In other words, generosity of a country does not affect the happiness of a country. We can predict the happiness score from generosity by using equation below.

$$\text{Score} = 0.886057 * \text{Generosity} + 5.24331$$

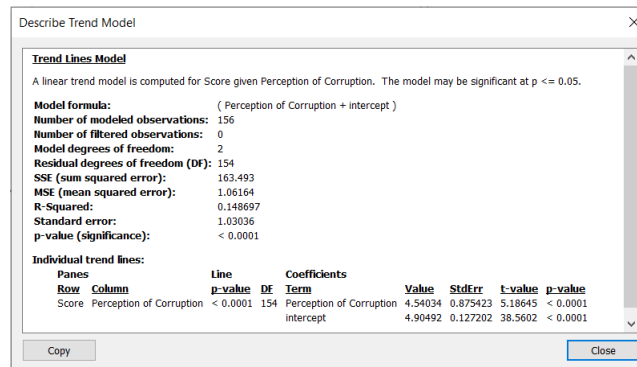


Figure 10. Perception of Corruption Trend Line Model Description

The correlation between Perception of Corruption with happiness score generate the R-squared value of 0.148697. Hence, R value is the result of $\sqrt{0.148697}$, that is 0.385612. 0.385612 of R-value is far away from 1, so it indicates that the relationship between country citizens' Perception of Corruption and country's happiness is weak but positive. The 'Happiness Score VS Perception of Corruption in 2019' chart shows the countries that have low perception of corruption have high happiness score, while there are some of them have low happiness score. However, many countries that have high perception of corruption have high happiness score. We can predict the happiness score from Perception of Corruption by using equation below.

$$\text{Score} = 4.54034 * \text{Perception of Corruption} + 4.90492$$

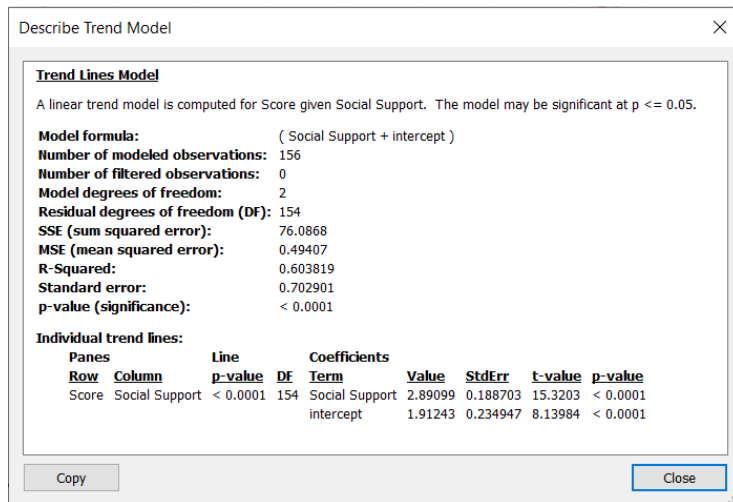


Figure 11. Social Support Trend Line Model Description

The correlation between Social Support with happiness score generate the R-squared value of 0.603819. Hence, R value is the result of $\sqrt{0.603819}$, that is 0.777058. 0.777058 of R-value is close to 1, so it indicates that the relationship between social support and happiness score is strong and positive. The higher the social support of a country, the higher the happiness score of the country. We can predict the happiness score from social support by using equation below.

$$\text{Score} = 2.89099 * \text{Social Support} + 1.91243$$

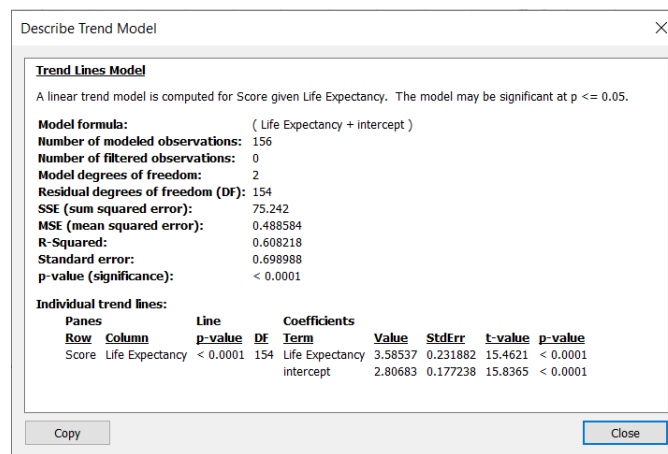


Figure 12. Life Expectancy Trend Line Model Description

The correlation between Life expectancy with happiness score generate the R-squared value of 0.608218. Hence, R value is the result of $\sqrt{0.608218}$, that is 0.779883. 0.779883 of R-value is close to 1, so it indicates that the relationship between life expectancy and happiness score is strong and positive. The higher the life expectancy, the happier the country. We can predict the happiness score from life expectancy by using equation below.

$$\text{Score} = 3.58537 * \text{Life Expectancy} + 2.80683$$

The simple linear regression analyses for each of the six charts in Figure 5 reveal distinct R-squared values, as evident in Figures 6 through 11. Consequently, it becomes apparent that utilizing simple linear regression alone may not be adequate for comprehensively determining the correlation of happiness with all independent variables. To address this, and to accurately gauge the correlation between the happiness score and the various predictor variables—namely, GDP Per Capita, Social Support, Life Expectancy, Personal Freedom, Generosity, and Perception of Corruption—employing multiple linear regression is more appropriate. Multiple linear regression

enables the estimation of the relationship between the dependent variable (happiness score) and all the independent variables collectively.



Figure 13. Multiple Linear Regression of Happiness Score and All independent variables

Figure 13 shows the multiple linear regression between happiness score and all independent variables, which are GDP Per Capita, Social Support, Life Expectancy, Personal Freedom, Generosity, and Perception of Corruption. The regression line shows the relationship between independent variables and happiness score is positive. This is because the happiness score of a country is determined by assessing the GDP Per Capita, Social Support, Life Expectancy, Personal Freedom, Generosity, and Perception of Corruption of the country. We can predict the happiness score from all 6 predictors by using equation below.

$$\text{Score} = 1 * \text{Multiple Regression} + -1.43814e-06$$

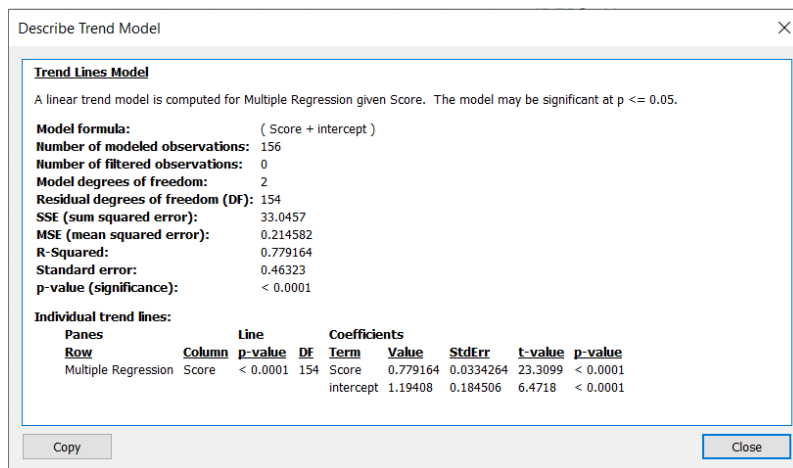


Figure 14. Trend Model Description of Multiple Linear Regression of Happiness Score and All Independent Variables

The ‘Multiple Regression’ in row is a calculation field that created for calculating the multiple linear regression between all independent variables with happiness score. The p-value of the multiple linear regression is less than 0.0001. So, we can conclude that there is a statistically significant association between all independent variables and happiness score. The correlation between all independent variables with happiness score generate the R-squared value of 0.779164. This shows that the relationship between independent variables and happiness score

accounts for 77.91% of the variation. In simple terms, the relationship is strong. In addition, the best predictor of happiness score is GDP per capita. This is because the correlation between GDP per capita and happiness score have generated the highest R-value among all independent variables. Hence, the independent variable of GDP per capita have the strongest relationship with happiness score among all independent variables.

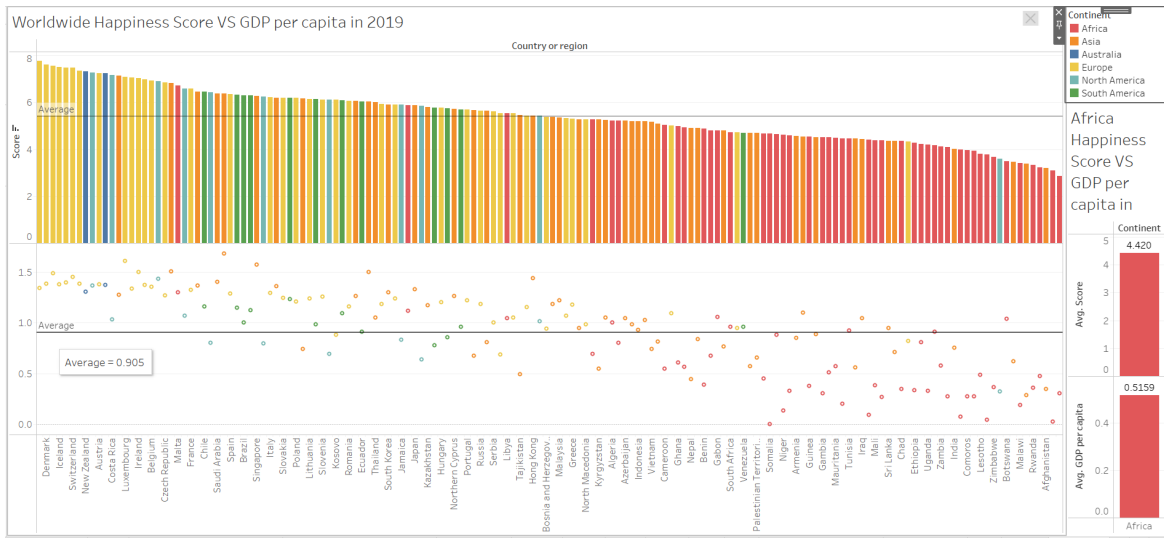


Figure 15. Comparison between Worldwide Happiness Score and GDP Per Capita and Happiness Score and GDP Per Capita of Africa

From Figure 15 we can know that the average happiness score of Africa continent is 4.420 and the average GDP per capita of Africa continent is 0.5159. The average happiness score from all countries is 5.407 and the average GDP per capita from all countries is 0.905. The average GDP per capita from all countries is higher than the average GDP per capita of Africa because the Africa continent frequently faces unstable and suffering situations such as war and poverty. The unstable and suffering situations have decreased the job opportunity and economy system. Also, the average happiness score from all countries in the world is lower than the average happiness score of Africa because the happiness score is affected by the low average GDP per capita of Africa resulted by the unstable and suffering situations that the Africans faced.

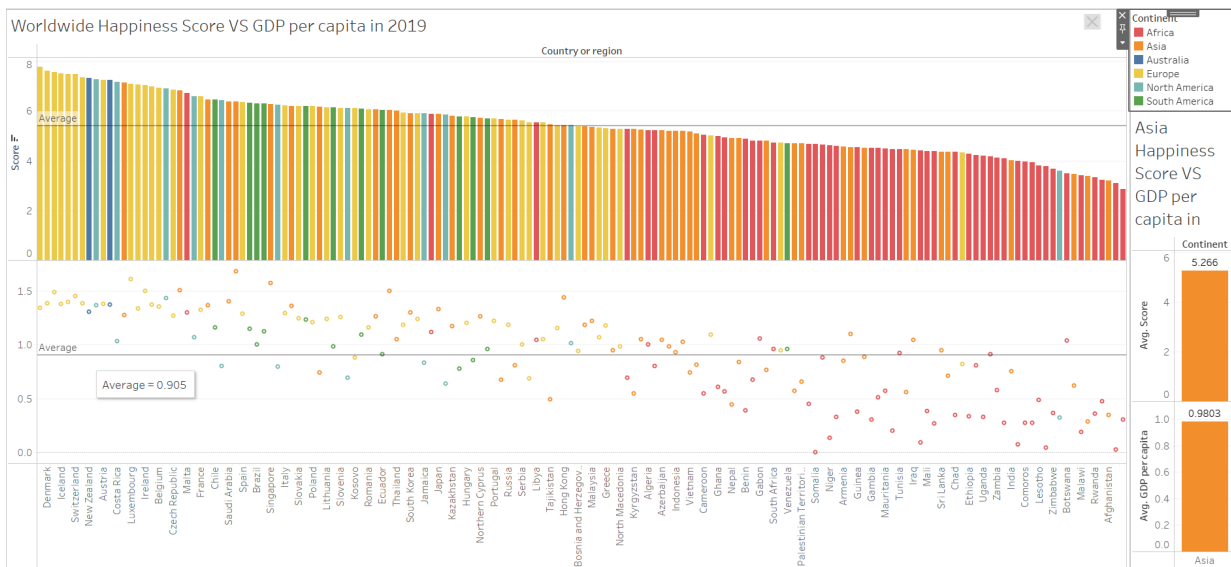


Figure 16. Comparison between Worldwide Happiness Score and GDP Per Capita and Happiness Score and GDP Per Capita of Asia

From Figure 16 we can know that the average happiness score of Asia continent is 5.266 and the average GDP per capita of Asia continent is 0.9803. The average happiness score from all countries is 5.407 and the average GDP per capita from all countries is 0.905. The average GDP per capita in Asia surpasses the global average due to the prevalence of robust economic systems in most Asian countries. For instance, China, a global economic powerhouse, has made substantial advancements in various sectors such as technology and business, contributing significantly to its economic prosperity. Despite the economic strength, the average happiness score in Asia is lower than the global average. Consequently, it can be inferred that the overall happiness level in Asia falls below the worldwide average. This discrepancy may be attributed to the cultural tendency in Asia, where individuals often prioritize their careers over achieving a work-life balance. The resulting emphasis on work can lead to heightened pressure, ultimately impacting the overall happiness of individuals in the region.

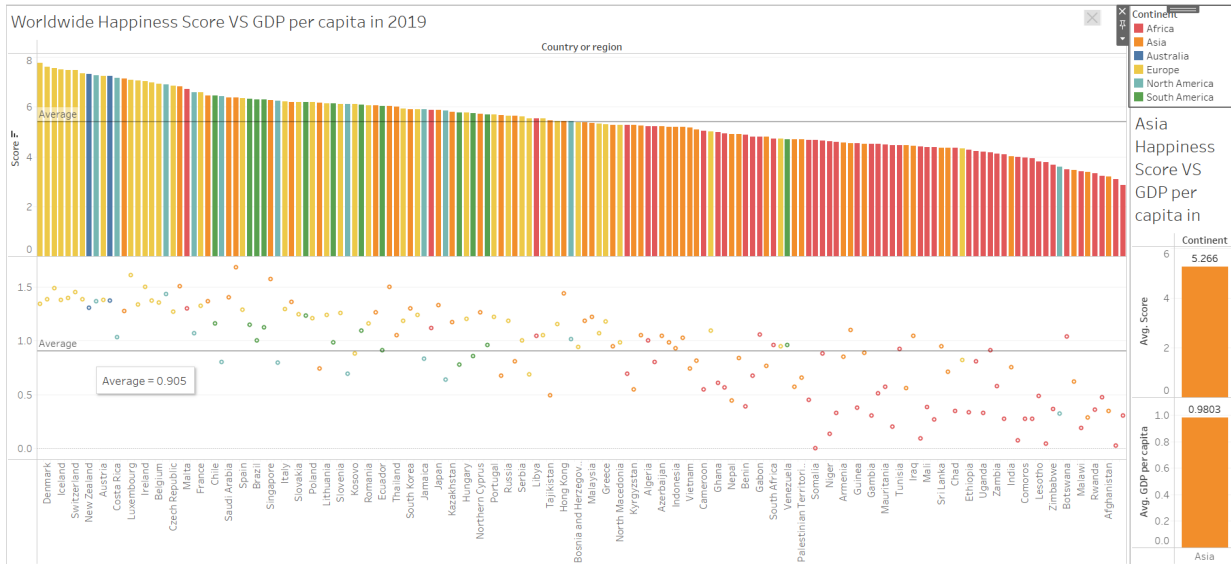


Figure 17. Comparison between Worldwide Happiness Score and GDP Per Capita and Happiness Score and GDP Per Capita of Australia

From Figure 17 we can know that the average happiness score of Australia continent is 7.268 and the average GDP per capita of Australia continent is 1.338. The average happiness score from all countries is 5.407 and the average GDP per capita from all countries is 0.905. The average GDP per capita of Australia is higher than the average GDP per capita from all countries because the Australia continent only have 2 countries and also the countries in Australia continent have well-structured economic system that has attracted a lot of outsiders invested the business in Australia continent. Also, the average happiness score of Australia is higher than the average happiness score from all countries in the world. This is because the beautiful and relax sceneries are normal to be seen in Australia continent. Also, the people who live in Australia continent have a lot of job opportunities since there are so many international companies make development in Australia continent.

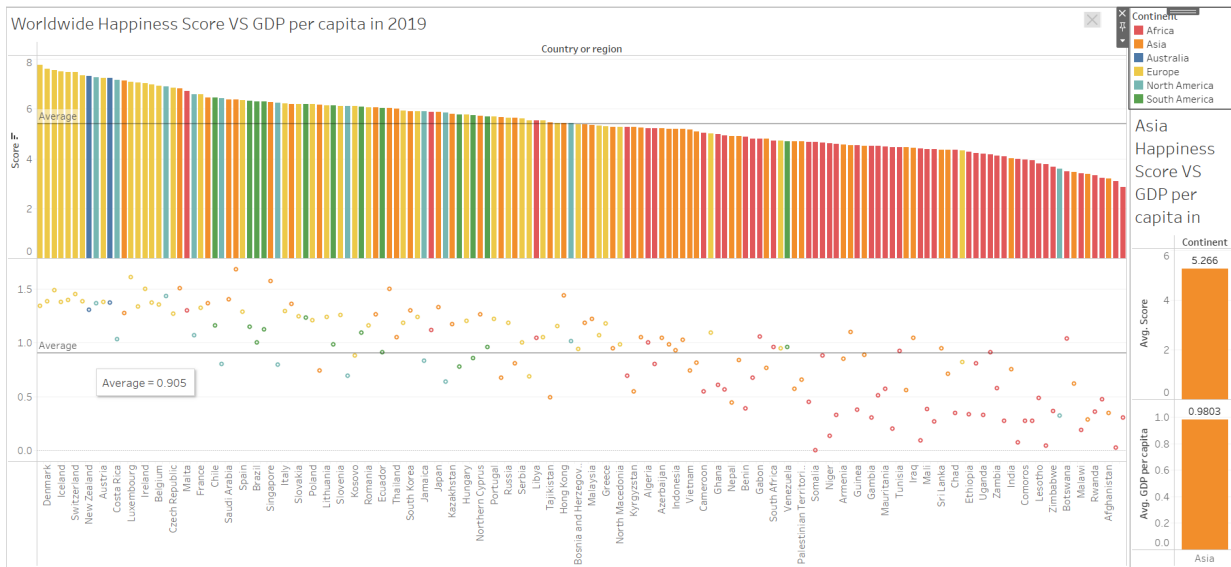


Figure 18. Comparison between Worldwide Happiness Score and GDP Per Capita and Happiness Score and GDP Per Capita of Europe

From Figure 18 we can know that the average happiness score of Europe continent is 6.262 and the average GDP per capita of Europe continent is 1.218. The average happiness score from all countries is 5.407 and the average GDP per capita from all countries is 0.905. The average GDP per capita of Europe is higher than the average GDP per capita from all countries because Europe have a lot of well-developed countries. Most of the Europe countries well-develop in technology sector and manufacturing sector. Also, the average happiness score of Europe higher than the average happiness score from all countries because the top 5 happiest countries in the world such as Finland, Denmark, Norway, Iceland, and Netherlands are under Europe continent. This had increased the average of happiness score of Europe. Hence, we can state that Europeans did understand how to enjoy their lives happily with high satisfaction and implement them within their lives.

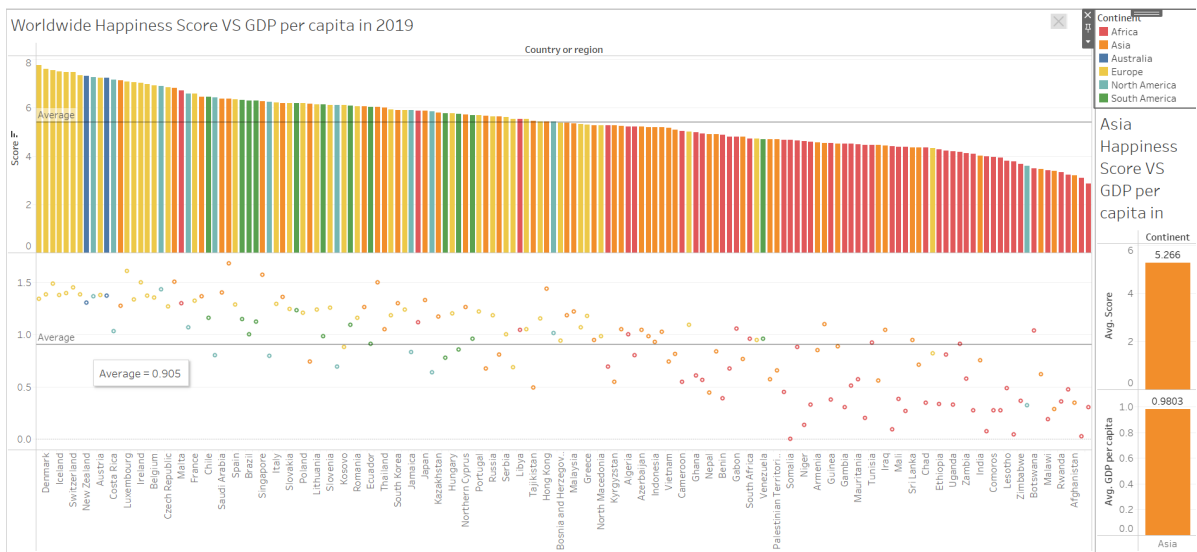


Figure 19. Comparison between Worldwide Happiness Score and GDP Per Capita and Happiness Score and GDP Per Capita of North America

From Figure 19 we can know that the average happiness score of North America continent is 6.136 and the average GDP per capita of North America continent is 0.9092. The average happiness score from all countries is 5.407 and the average GDP per capita from all countries is 0.905. The average GDP per capita of North America is higher than the average GDP per capita from all countries because most of the countries in North America is well-developed such as Canada and United States. They also have modern technologies and have large market potential that has attracted lot of outsiders invest in the North America continent. Also, the average happiness score of North

America continent is higher than the average happiness score from all countries. This is because North America normally have much personal freedom and care for human rights.

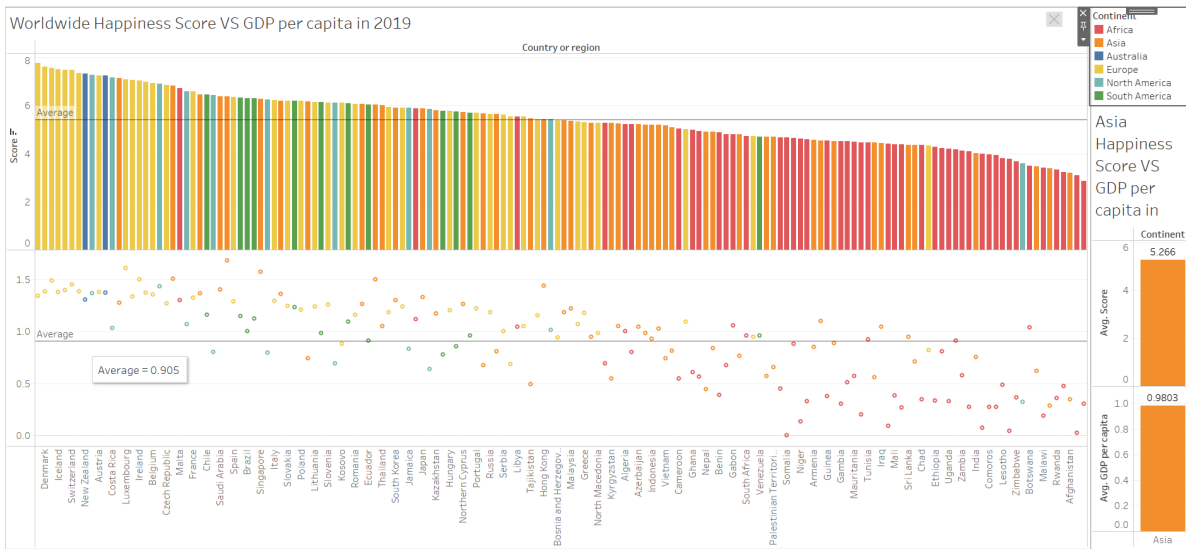


Figure 20. Comparison between Worldwide Happiness Score and GDP Per Capita and Happiness Score and GDP Per Capita of South America

From Figure 20 we can know that the average happiness score of South America continent is 5.976 and the average GDP per capita of South America continent is 1.017. The average happiness score from all countries is 5.407 and the average GDP per capita from all countries is 0.905. The average GDP per capita of South America is higher than the average GDP per capita from all countries because most of the South America countries have GDP per capita that above average. The primary economy contributor to South America is the production of private consumption [11]. Private consumption is a measure that represents the total amount of money spent by consumers in the country on products and services. It's also known as consumer spending [12]. Also, the average happiness score of South America continent is higher than the average happiness score from all countries because South Americans emphasize on personal satisfaction and personal happiness.

4 Conclusion

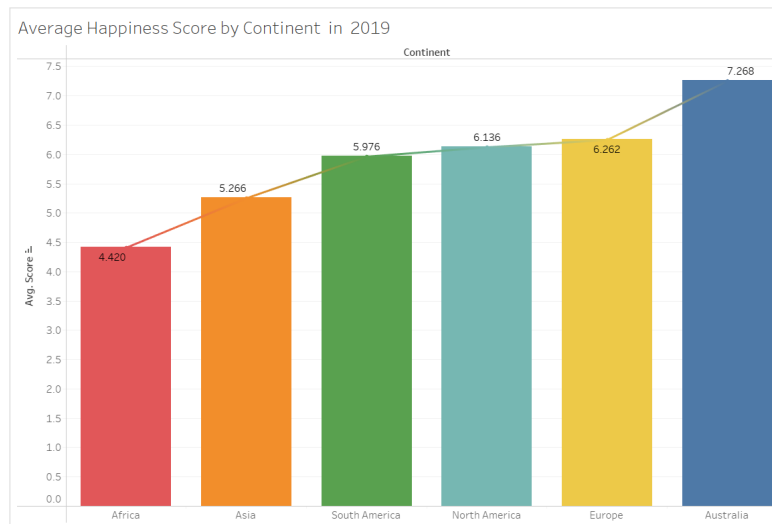


Figure 21. Happiness Score by Continent in 2019

In this analytical report, we can distill that the Top Five happiest countries in 2019 comprise Finland, Denmark, Norway, Iceland, and the Netherlands, as depicted in Figure 1. Residents of these nations generally express high satisfaction across diverse perspectives, including social, economic, and political aspects. Conversely, the Bottom Five happiest countries in 2019 include Rwanda, Tanzania, Afghanistan, the Central African Republic, and South Sudan, visually represented in Figure 2. Individuals in these nations often grapple with concerns stemming from unstable conditions, such as conflict and war. Both visualizations are generated using the variables of the sum of happiness scores and the country. Additionally, the visualization results are filtered using a calculation field to display the Top Five highest happiness scores or Bottom Five happiness scores. This filtering mechanism allows readers to readily identify the Top Five happiest countries and Bottom Five happiest countries in 2019.

Figure 3 in this analysis report examines the relationship between the happiness score and the generosity score of various countries. The chart utilizes happiness score and generosity as the variables, incorporating a regression line and confidence bands. These elements aim to illustrate how a country's level of generosity influences its happiness score. However, the results indicate that generosity and happiness are not closely correlated, as some countries with high generosity scores exhibit lower happiness scores than those with lower generosity. Moving on to Figure 4, the chart depicts Happiness Score by Continent in 2019. The happiness score is measured as an average since continents typically comprise more than one country, providing a more comprehensive assessment of a continent's happiness. The chart utilizes a continent variable created by grouping countries within each continent. The outcomes reveal that Australia is the happiest continent, while Africa ranks as the least happy. The Australia continent's high happiness score is attributed to its limited composition, consisting solely of Australia and New Zealand. Additionally, the chart underscores the notion that individuals in Australia and New Zealand tend to experience happiness due to the breathtaking scenery and laid-back lifestyle. Conversely, challenges such as poverty and difficult living conditions contribute to lower happiness levels in African countries.

Furthermore, this analytical report employs predictive analytics through a multiple regression model, as illustrated in Figure 13. The rationale for utilizing a multiple regression model is that it provides a more comprehensive understanding of the correlation between happiness and six independent variables compared to a simple regression model. These independent variables include GDP Per Capita, Social Support, Life Expectancy, Personal Freedom, Generosity, and Perception of Corruption, all of which influence the happiness score.

In Tableau, the multiple regression model is presented using a variable for happiness score and a calculated field designed to yield values within the potential range defined by the happiness score and the six independent variables. The R-squared value of the model is 0.779164, a figure approaching 1, indicating a robust relationship between happiness and the six independent variables. This outcome aligns with expectations, given that the happiness score is inherently dependent on these variables. Moreover, GDP per capita emerges as the optimal predictor for estimating a country's happiness score. This determination is supported by the highest R-value observed in the correlation between GDP per capita and happiness score when compared to the other five independent variables. Figures 6 and 7 provide visual representations of this strong correlation. Additionally, this analytical report conducts a comparative analysis of all countries included in the Worldwide Happiness Report 2019 across six continents: Africa, Asia, Australia, Europe, South America, and North America. The comparison relies on average happiness scores and average GDP per capita.

Firstly, when contrasting all countries with the African continent, both the average happiness score and average GDP per capita of all countries surpass those of the African continent. This discrepancy is attributed to the frequent challenges faced by Africans, including unstable situations like war, which contribute to lower happiness scores and GDP per capita. Refer to Figure 15 for a visual representation of this comparison. Moving on, the analysis compares all countries with the Asian continent, revealing that the average happiness score of all countries is higher than that of Asia. This difference can be attributed to the tendency of Asians to struggle with implementing a work-life balance, leading to increased job-related stress. However, the average GDP per capita of all countries is lower than that of the Asian continent. This can be explained by the robust development across many Asian countries in various sectors, such as technology, manufacturing, and communication, bolstering their economic systems and increasing GDP per capita. Figure 16 illustrates this comparison and the associated differences.

Moreover, when comparing all countries to the Australia continent, both the average happiness score and average GDP per capita of the Australia continent surpass those of all countries. This disparity is primarily due to the Australia continent comprising only two countries, resulting in a higher average happiness score and GDP per capita. Beyond the statistical aspects, the lifestyle in the Australia continent is recognized for its relaxation and joyfulness, complemented by a well-developed environment. Additionally, in the comparison between all countries and Europe, the average happiness score and average GDP per capita of the Europe continent are higher than those

of all countries. European countries exhibit comprehensive development across various sectors and embrace a work-life balance, contributing to increased average happiness scores and GDP per capita.

It's noteworthy to mention that in this report, Russia is categorized within the Europe continent. While Russia is transcontinental, with a presence in both Europe and Asia, the decision to place Russia solely in the Europe continent is justified by several factors. Despite the majority of Russia's land area lying in Asia (77%), nearly 77% of the Russian population resides in the European part, which accounts for 23% of the country's overall land area. Notably, Moscow, Russia's capital and most populous city with around 12 million inhabitants, is situated in the European part, further reinforcing the rationale for considering Russia within the Europe continent.

Continuing the comparison between all countries and individual continents, in the case of North America, both the average happiness score and average GDP per capita of the continent surpass those of all countries. North American countries are well-developed, engaging in numerous international transactions with other countries. Moreover, North Americans place emphasis on personal freedom and human rights. Similarly, in comparison with South America, the average happiness score and average GDP per capita of the continent are higher than those of all countries. The key contributor to South America's high average GDP per capita is the region's elevated private consumption. Additionally, South Americans tend to derive happiness from their ability to enjoy life.

In our perspective, considering that a country's happiness score is determined by six independent variables—GDP Per Capita, Social Support, Life Expectancy, Personal Freedom, Generosity, and Perception of Corruption—countries can take proactive measures to improve these variables. Notably, government self-reviewing and responsiveness to citizens' feedback are crucial. To boost GDP per capita, governments can increase taxes on imported products, encouraging citizens to support local industries and bolstering the domestic economy. To enhance social support and life expectancy, governments can establish fair healthcare and unbiased education systems, fostering a secure and trustworthy living environment. Campaigns promoting a consensus mindset can increase generosity by encouraging citizens to assist each other. Finally, to reduce the perception of corruption, governments should heed public voices and unite for national development, avoiding internal conflicts that hinder a country's progress.

We believe that the fundamental aspiration of the majority of people worldwide is to lead a life filled with happiness. Consequently, the annual establishment of the World Happiness Report since 2012 aims to empower individuals to make informed choices about where they can live comfortably and joyfully. Indeed, the place we reside does influence our happiness to a certain extent. While some individuals can afford the costs of immigration and choose to relocate to a country that aligns with their preferences, others find themselves living in a place that brings dissatisfaction, with immigration costs posing a financial barrier. However, it is essential to recognize the significance of changing our state of mind. For those who cannot alter their physical surroundings due to constraints, a transformative shift in mindset becomes crucial. Rather than harboring pessimism and placing blame on the environment, people, or government, individuals can actively shape their happiness by cultivating a positive outlook and taking charge of their own well-being.

5 Acknowledgments

World Happiness Report management by Sharon Paculor, copy edit by Sweta Gupta, Sybil Fares and Ismini Ethridge. Design by Stislow Design and Ryan Swaney. The support of the Ernesto Illy Foundation and illycaffè is gratefully acknowledged.

BIBLIOGRAPHY

- [1]. J. F. Helliwell, R. Layard, and J. D. Sachs, "World happiness report 2019," The World Happiness Report, <https://worldhappiness.report/ed/2019/> (accessed Oct. 6, 2023).
- [2]. J. P. Killingbeck, "Some interpolation and extrapolation methods," *Microcomputer Algorithms*, pp. 50–80, 2020. doi:10.1201/9781003071839-4.
- [3]. C. T. Gehring, "Why the Dutch?," *The Archaeology of New Netherland*, pp. 9–15, 2021. doi:10.5744/florida/9780813066882.003.0002.
- [4]. F. Martela, "Finland is the happiest country in the world, and Finns aren't happy about it," *Scientific American Mind*, vol. 29, no. 4, pp. 44–46, 2018. doi:10.1038/scientificamericanmind0718-44.
- [5]. M. R. El-Ghonemy, "Food insecurity in the Nile Valley: Egypt and Sudan," *Land, Food and Rural Development in North Africa*, pp. 82–117, 2019. doi:10.1201/9780429037856-6.

- [6]. “South sudan: Food insecurity,” *Africa Research Bulletin: Economic, Financial and Technical Series*, vol. 60, no. 1, 2023. doi:10.1111/j.1467-6346.2023.10971.x.
- [7]. “Rwanda is not hotel rwanda!!!,” *Rwanda Since 1994*, pp. 15–18, 2019. doi:10.3828/liverpool/9781786941992.003.0002.
- [8]. C. W. Sinalo, “Decolonizing trauma therapy in Rwanda,” *Rwanda Since 1994*, pp. 168–188, 2019. doi:10.3828/liverpool/9781786941992.003.0010.
- [9]. D. Gamarnik and I. Zadik, “Sparse high-dimensional linear regression. estimating squared error and a phase transition,” *The Annals of Statistics*, vol. 50, no. 2, 2022. doi:10.1214/21-aos2130.
- [10]. J. Sun and W. Liu, “Robust estimation for varying coefficient partially functional linear regression models based on exponential squared loss function,” *Open Mathematics*, vol. 20, no. 1, pp. 1112–1125, 2022. doi:10.1515/math-2022-0501.
- [11]. V. Filimonau and V. A. Ermolaev, “Mitigation of food loss and waste in primary production of a transition economy via stakeholder collaboration: A perspective of independent farmers in Russia,” *Sustainable Production and Consumption*, vol. 28, pp. 359–370, 2021. doi:10.1016/j.spc.2021.06.002.
- [12]. Private consumption has been subdued and public spending has expanded, 2021. doi:10.1787/2907d138-en.