



An Analytical Study of Google-Doodle in Relation to Happiness Index and Recognition Index.

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Abstract:

In this paper, we studied the effectiveness of Google Doodle in relation to Recognition Index and Happiness Index of the world published by standard organization. Our result established the intrinsic relationship among Google Doodle, Recognition Index and Happiness Index.

Keyword: Google Doodle, Recognition Index, Happiness Index, Rank and Co-relation Co-efficient.

Introduction:

In 2022, world scenario has been changed due to pandemic hit of covid-19. Our thought process towards life, goal, decrements, happiness, act of fulfillments slightly bent and new aspects bloomed horizontally. Human beings became more dependent on online platforms to communicate to collect information, to accomplish their works. Including our day to day life pattern. Our established institutions become more user friendly on online platforms. That is why we intend for online options are available, in which google is also one of them. Current

Era by which one can ask anything to quench their thirst of information without their time. Hence Google is our study area; all know the full form of Google i.e. Global Organization of oriented Group language of Earth. Acting as their name, which is very near to word “Google” representing a number 1 followed by 100 zeroes.

Google use doodle (A drawing made by a person without attention on it) first time 1998 and after 2010 with increased frequency and complexity.

Hence we choose Doodle as study corner. Next in Covid-19 period happiness of human being become key factor to understand it more and more. Along with this we have define “Doodle” as **“Drawing Orientate Ordered Depiction of Landmark Event”**.

There exist so many web browsers available on web, Google search engine or simply “Google” is one of them. Google is crazily used search engine across the world which is available in 149 languages. It was developed by Google, LLC an American Multinational Technology company, dealing with internet-based services and products. Google was founded by Larry Page and Sergey Brin, at Stanford University California in 1998. With reference to the latest report of the Stat Counter Global Stats, Google grasp 92.71% Market Share on worldwide web as of October 2020. Every day millions of people use Google search engine for many of reasons. Scholars uses for research, students use it for education; business people use it for marketing and many more. Google collect data from all over the internet, looks for meaningful information, stores the information in its data centers and make it available to use in seconds.

“Google Doodle is an interactive tool on the Google homepage that are frequently used to explore about the historic event, celebrations, achievements and notable historical information of particular countries around the world”. As earlier said Google is crazily used search engine across the world as it strength billions of searches at per day. As we view the web page of Google just right above the search box, Google logo appears, usually we see the logo of Google but in many occasion it will add something interactive and dynamic logo which called a Doodle. These Doodles are completely redesigned by their artistic creations and it absolutely differs with traditional logo of the Google creation. Google server was crashed once in 1998, then Larry & Brin created doodle to inform users about the annual Burning Man event in Black Rock City, Nevada as an effective

option[3]. That was the first event where the idea of decorating the company logo to point out the prominent events was born. In year 2000, Larry and Sergey asked to Dennis Hwang, working as public relation officer (an intern at that time) to produce a doodle for Bastille Day. It was so appreciated by the users that Dennis was appointed as Chief Doodler for Google. Since then doodles started showing up more regularly on the homepage of Google[4]. This was the first time the idea was born to organize a complete team of employees called “Doodlers” have been organized to create and manage the doodles. During the beginning, doodles mostly celebrated familiar holidays only; but nowadays the entire team of doodlers celebrating wide range of events and anniversaries from the birthday of John James Audubon to Ice Cream Sundae⁴.

From the beginning, Doodles were simply images with hover text which described the content of the subject or expressing the greeting of holiday- these doodles were neither animated nor hyperlinked[1]. From the year 2010 Doodles increased their frequency and intricacy, very first animated Doodle honored to Sir Isaac Newton in this year. Beside with first interactive Doodle appeared with celebrating Pac-Man[8], Shortly in 2014 hyperlinks also began to be added to Doodles, which usually linked to the search result page of the subject to the concern Doodle.

World Happiness Report

The United Nations Sustainable Development Solutions Network published world Happiness Report since 2012, which contains rankings of country happiness based on the respondent ratings of their own lives along with detail article. The report correlates with a range of factors of quality of lives[12]. In a year 2011, July the UN General Assembly adopt an resolution towards a holistic definition of development namely 65/309 Happiness, for measuring the national happiness by inviting their member countries to determine the happiness of their people and use these data to help preparing the public policy. After that first UN high level meeting was held in a year 2012. April which call Wellbeing and Happiness: Defining a New Economic Paradigm⁸, this meeting was chaired by UN Secretary General Ban Ki-moon and Prime Minister of Bhutan Jigme Thinley. The highlight of the meeting was to discuss about those nation that adopted gross national happiness instead of gross domestic product as their main indicator of the development. The phrase “Gross National Happiness” was first coined by the fourth king of the Bhutan, Jigme Singye Wangchuck in a year 1972[2].

In year 2012 first World Happiness Report was published as a groundwork text of the UN High Level Meeting: “Well-being and Happiness: Defining the New Economic Paradigm”, this report drawn the international attention towards the Happiness Report. In its first report, United Nations Sustainable Development Solutions Network outlined the state of world happiness, beside with this the case study also highlighted the causes of happiness and sadness and policy implication. In year 2013 second World Happiness Report was published and in 2015 the third. Since 2016 the report has been regularly published on an annual basis on the 20th March, to highlight the importance of happiness in the diurnal lives of people. In 2013 United Nations Officially started to celebrate the International Day of Happiness, but the resolution for the subject was earlier passed in July, 2012. The resolution for the same was first initiated by Bhutan, which emphasized the important of the national happiness over national income, since the early 1970s, thereby adopting the Gross National Happiness over the Gross National Product.

For evaluating the global happiness, World happiness Report is a one of the best tools which is base on how ecstatic people perceive themselves to be happy. The report considers six characteristics to rank countries on overall happiness are given below [12]:

- 1: GDP Per Capta
- 2: Social Support
- 3: Life Expectancy
- 4: Freedom to make choices
- 5: Generosity
- 6: Perception of Corruption

Recognition Index:

U.S News & World Report is a media company of America, which publishes news, consumer advice, ranking and analysis. The headquarters of the company are situated at Washington, D.C 120 Fifth Avenue, New York City. It was launched in the year 1948 as the fusion of domestic-focused weekly newspaper U.S News and international-focused weekly magazine World report. From 1983, it has been well known for its prominent ranking and annual report of colleges and graduate schools, spanning across almost fields and subjects. U.S

News & World report is one of the oldest best-known ranker of academic institutions of America[9]. Its covers the fields like Law, Business, Medicine, Engineering, Social Sciences and Public Affairs, in addition to many other areas. In year 1995 the company launched own website www.usnews.com , and in 2010 the company ceased printing of the magazine. The ranking of American colleges and universities are popular with the public and influence application pattern¹².

U.S News & World Report present 2021 best countries report and rankings which are based on how global perceptions defines countries in terms of a number of qualitative characteristics, impressions that have the power to drive trade, travel, investment and directly affect national economies. Because globalization has expanded a nation presence beyond its boundaries, and the U.S News best countries rankings –now in their sixth year- seek to examine nations worth hard metrics[11]. This report covers perceptions of 78 nations across the world. The best countries was first launched in year 2016 based on a model of nation,s brand evaluation created by BAV consulting former CEO John Gerzema and Professor David Reibstein, tested by former BAV Group Senior Vice President Anna Blender and validated by WPP Senior Advisor David Sable¹³.

The model for the study to use score and ranks of the countries were developed by BAV group and the Wharton School of the University of Pennsylvania, beside the consultation of Professor David Reibstein with U.S News & World Report. A set of 76 country attributes were identified that can be used to describe a country and that are also relevant to the success of a modern nation. To make the ranking comprehensive, perception data (attributes) were presented in a survey of more than 17,000.00 people from across the world – including the general population, informed elites and business decision makers. The data of 2021 best countries include an overall list of 78 nations ranked as well as 10 sub rankings namely Agility, Social Purpose, Cultural Influence, Quality of Life, Entrepreneurship, Power, Heritage, Open for Business, Movers and Adventure. The philosophy behind the project is to help citizens, business leaders and policymakers to better understand how their country and others are professed on a world scale. As growing the number of business across the world and the people have the ability to choose where in the world to invest their time and money, because it's increasingly valuable to understand that how a nation's policies, politics and products affect its perceived

standing in the world[11]. This rankings can help to determine the current and future possibilities of economic, political and cultural success in a nation and can be very useful for strategic and decision making.

The explanation behind the selection of 78 countries for best countries rankings account for nearly 94% of global gross domestic product (GDP) and also represent about three-quarters of the world population. All these 78 countries were selected based on their performance in key business, economic and quality of life. All these best countries rankings had to meet basically four criteria within the recent year for which data are available, specific to each benchmark to be included for the study[10].

Top 100 countries in terms of gross domestic product in 2018 or 2019, based on World Bank data

- Top 100 countries in terms of foreign direct investment inflows in 2018 or 2019, based on World Bank data
- Top 100 countries in terms of international tourism receipts in 2018 or 2019, based on World Bank data
- Top 150 countries in the U.N.'s Human Development Index, based on the 2018 or 2019 report

The best countries was first launched in year 2016 based on a model of nation's brand evaluation created by BAV consulting former CEO John Gerzema and Professor David Reibstein, tested by former BAV Group Senior Vice President Anna Blender and validated by WPP Senior Advisor David Sable.

The details about the Best Countries Rankings 2021 measure global performance on variety of metrics are given below[10]:

US News & World Report Best Country Rankings: 2021

| Country Name | Rank | % Value | Country Name | Rank | % Value |
|--------------|------|---------|--------------|------|---------|
| Canada | 1 | 100 | South Africa | 41 | 24.2 |
| Japan | 2 | 99.1 | Argentina | 42 | 24 |
| Germany | 3 | 98 | Poland | 43 | 23.9 |
| Switzerland | 4 | 97.3 | Philippines | 44 | 22.4 |
| Australia | 5 | 96.6 | Czechia | 45 | 21.3 |
| US | 6 | 93.3 | Croatia | 46 | 18 |
| New Zealand | 7 | 92.6 | Sri Lanka | 47 | 17.9 |
| UK | 8 | 92.3 | Hungary | 48 | 17.9 |
| Sweden | 9 | 90.6 | Chile | 49 | 17.7 |
| Netherlands | 10 | 83.3 | Peru | 50 | 16.3 |

| | | | | | |
|--------------|----|------|--------------------|----|------|
| France | 11 | 87.1 | Panama | 51 | 16.2 |
| Denmark | 12 | 83.5 | Dominican Republic | 52 | 15.4 |
| Norway | 13 | 83.3 | Kenya | 53 | 13.8 |
| Singapore | 14 | 83 | Colombia | 54 | 12.3 |
| South Korea | 15 | 81.4 | Cambodia | 55 | 11.8 |
| Italy | 16 | 78.7 | Jordan | 56 | 10.6 |
| China | 17 | 78 | Estonia | 57 | 9.8 |
| Finland | 18 | 76.1 | Myanmar | 58 | 9.4 |
| Spain | 19 | 69.3 | Uruguay | 59 | 9.1 |
| Belgium | 20 | 68.1 | Slovenia | 60 | 8.9 |
| Austria | 21 | 67.5 | Bulgaria | 61 | 8.7 |
| UAE | 22 | 66.9 | Slovakia | 62 | 8.3 |
| Ireland | 23 | 65.3 | Romania | 63 | 8.3 |
| Russia | 24 | 48.7 | Latvia | 64 | 7.2 |
| India | 25 | 48.4 | Tunisia | 65 | 7.1 |
| Brazil | 26 | 46.9 | Azerbaijan | 66 | 7.1 |
| Greece | 27 | 46.8 | Lithuania | 67 | 6.4 |
| Thailand | 28 | 46.3 | Ecuador | 68 | 6.1 |
| Portugal | 29 | 46.1 | Guatemala | 69 | 5.9 |
| Israel | 30 | 42.4 | Oman | 70 | 5.5 |
| Mexico | 31 | 38.1 | Ukraine | 71 | 4.9 |
| Qatar | 32 | 35.6 | Kazakhstan | 72 | 4.6 |
| Egypt | 33 | 34 | Uzbekistan | 73 | 3.4 |
| Turkey | 34 | 33.9 | Lebanon | 74 | 2.6 |
| Saudi Arabia | 35 | 33.8 | Belarus | 75 | 2.5 |
| Malaysia | 36 | 33.4 | Serbia | 76 | 1.7 |
| Indonesia | 37 | 26.7 | El Salvador | 77 | 1.4 |
| Morocco | 38 | 25.1 | Iraq | 78 | 0 |
| Costa Rica | 39 | 24.7 | | | |
| Vietnam | 40 | 24.5 | | | |
| | | | | | |

Objective of the Study:

- To study the relation of Recognition Index 2021 and Google Doodle Country Ranking.
- To study the relation of Happiness Index 2021 and Google Doodle Country Ranking.
- To examine relationship if any exists.

Methodology:

With the successful implementation of the study qualitative and quantitative methods of research has been obtain. The following methods for the study are given below.

1. Collected data of Recognition Index of world from U.S News Based Country ranking 2021.
2. Collected data of Happiness Index from UNO Ranking 2021.
3. Collected data of Google-Doodle from its website.
4. Since Recognition Index ranking given for 78 countries that in why we have collected the some countries data of Happiness Index and Google-Doodle.
5. Among this 78 countries we have taken 29 countries including India where as Indonesia is taken from R.I due to its high ranking in Google-Doodle.
6. Selected these 29 countries for making usable for analysis.
7. First of all ranking of these data for chosen countries, than taken percentile value of their contribution.
8. Then try to fit curve between R.I & G.D, H.I & G.D and H.I & R.I by curve fitting process as per our data allowed to analysis the chance.
9. On the basis of obtained result, conclusions have been drawn.
10. After fitting the curve in various settings, then we find general curve of obtained equation by taking X-area randomly the scale 0-10.
11. Beside this taken graph of combined curve of same setting for R.I & G.D, H.I & G.D and H.I & R.I.
12. After this find the meeting points of these curve (all three categories in the same setting) to get optimum value.

Data Interpretation:

Total Number of Google Doodles Published in 2020:

| S. No | Number of Days | Total Number of Doodles (2017 to 19) |
|-------|----------------|--------------------------------------|
| 1 | 365 | 402 |

Number of Event Celebrated by Doodles: 2020

| Year | No. of Doodles:2020 (100%) | S.No | No. of Event, | Number of Doodles | | |
|------|----------------------------|------|---------------------------|-------------------|--------------------|----|
| 2020 | 402 | 1 | Birthday | 80 | | |
| | | 2 | Celebrating Events | 53 | | |
| | | 3 | Independence Day | 40 | | |
| | | 4 | National Day | 32 | | |
| | | 5 | Teachers Day | 29 | | |
| | | 6 | Mother's Day | 20 | | |
| | | 7 | Father's Day | 18 | | |
| | | 8 | Children's Day | 15 | | |
| | | 9 | Election Events | 12 | | |
| | | 10 | Thank You Events Covid-19 | 12 | | |
| | | 11 | Stay and Play at home | 11 | | |
| | | 12 | Grandparents Day | 7 | | |
| | | 13 | Republic Day | 6 | | |
| | | 14 | Festival celebration | 6 | | |
| | | 15 | Special personalities | 6 | | |
| | | 16 | First Day of School | 5 | | |
| | | 17 | New Year | 5 | | |
| | | 18 | Anniversary | 4 | | |
| | | | | 19 | Summer | 3 |
| | | | | 20 | Holidays | 2 |
| | | | | 21 | Winter Celebration | 2 |
| | | | | 22 | Democracy | 2 |
| | | | | 23 | Constitution | 2 |
| | | | | 24 | Miscellaneous 'Day | 30 |
| | | | Total | 402 | | |

Country wise Number of Event Celebrated by Doodles: 2020

| Name of Country | No of Doodle Count | Ran k | Country 2020 (GD) | No of Doodle Count | Ran k | Name of Country | No of Doodle Count | Ran k |
|------------------|--------------------|-------|-------------------|--------------------|-------|---------------------|--------------------|-------|
| Multiple Country | 54 | 1 | Latvia | 3 | 47 | Serbia | 1 | 93 |
| USA | 23 | 2 | Lithuania | 3 | 48 | Slovenia | 1 | 94 |
| UK | 14 | 3 | New Zealand | 3 | 49 | Sri Lanka | 1 | 95 |
| France | 11 | 4 | Nigeria | 3 | 50 | Syria | 1 | 96 |
| Indonesia | 9 | 5 | Paraguay | 3 | 51 | Texas | 1 | 97 |
| Poland | 9 | 6 | Slovakia | 3 | 52 | Trinidad and Tobago | 1 | 98 |
| Russia | 9 | 7 | South Africa | 3 | 53 | Tunisia | 1 | 99 |
| Brazil | 8 | 8 | Venezuela | 3 | 54 | UAE | 1 | 100 |
| India | 8 | 9 | Armenia | 2 | 55 | Uganda | 1 | 101 |
| Japan | 8 | 10 | Bolivia | 2 | 56 | Afghanistan | | |
| South Korea | 8 | 11 | China | 2 | 57 | Azarbazan | | |
| Thailand | 8 | 12 | Czech Republic | 2 | 58 | Bangkok | | |
| Turkey | 8 | 13 | Ecuador | 2 | 59 | Cabo Verde | | |
| Australia | 7 | 14 | Georgia | 2 | 60 | Croatia | | |
| Mexico | 7 | 15 | Ghana | 2 | 61 | Iran | | |
| Taiwan | 7 | 16 | Guatemala | 2 | 62 | Iraq | | |
| Egypt | 6 | 17 | Ireland | 2 | 63 | Jakarta | | |

| | | | | | | | | |
|--------------------|---|----|--------------|---|----|-------------|-----|--|
| Vietnam | 6 | 18 | Jamaica | 2 | 64 | North Korea | | |
| Argentina | 5 | 19 | Kenya | 2 | 65 | Tunisia | | |
| Austria | 5 | 20 | Netherlands | 2 | 66 | Virginia | | |
| Bulgaria | 5 | 21 | Scotland | 2 | 67 | | 407 | |
| Germany | 5 | 22 | Sweden | 2 | 68 | | | |
| Italy | 5 | 23 | Switzerland | 2 | 69 | | | |
| Ukraine | 5 | 24 | Bahrain | 1 | 70 | | | |
| Chile | 4 | 25 | Belarus | 1 | 71 | | | |
| Colombia | 4 | 26 | Cuba | 1 | 72 | | | |
| Costa Rica | 4 | 27 | Czechia | 1 | 73 | | | |
| Dominican Republic | 4 | 28 | Denmark | 1 | 74 | | | |
| Israel | 4 | 29 | Finland | 1 | 75 | | | |
| Malaysia | 4 | 30 | Greece | 1 | 76 | | | |
| Nicaragua | 4 | 31 | Hungary | 1 | 77 | | | |
| Pakistan | 4 | 32 | Iceland | 1 | 78 | | | |
| Panama | 4 | 33 | Jordan | 1 | 79 | | | |
| Peru | 4 | 34 | Kuwait | 1 | 80 | | | |
| Philippines | 4 | 35 | Lebanon | 1 | 81 | | | |
| Romania | 4 | 36 | Manila | 1 | 82 | | | |
| Singapore | 4 | 37 | Moldova | 1 | 83 | | | |
| Spain | 4 | 38 | Morocco | 1 | 84 | | | |
| Uruguay | 4 | 39 | Norway | 1 | 85 | | | |
| Algeria | 3 | 40 | Oman | 1 | 86 | | | |
| Bangladesh | 3 | 41 | Persia | 1 | 87 | | | |
| Belgium | 3 | 42 | Portugal | 1 | 88 | | | |
| Canada | 3 | 43 | Qatar | 1 | 89 | | | |
| El Salvador | 3 | 44 | Saint Lucia | 1 | 90 | | | |
| Estonia | 3 | 45 | Saudi Arabia | 1 | 91 | | | |
| Honduras | 3 | 46 | Senegal | 1 | 92 | | | |

Established Relation between Best Country Ranking 2021 U.S News & World Report and Google Doodle (2020):

| Country Name | Best Country Rank | % (Round No.) | No of Doodle Count | Doodle Rank | % (Round No.) |
|--------------|-------------------|---------------|--------------------|-------------|---------------|
| Canada | 1 | 100 | 3 | 46 | 0.9 |
| Japan | 2 | 99.1 | 8 | 9.5 | 2.3 |
| Germany | 3 | 98 | 5 | 20.5 | 1.5 |
| Switzerland | 4 | 97.3 | 2 | 61 | 0.6 |
| Australia | 5 | 96.6 | 7 | 14 | 2 |
| US | 6 | 93.3 | 23 | 1 | 6.6 |
| New Zealand | 7 | 92.6 | 3 | 46 | 0.9 |
| UK | 8 | 92.3 | 14 | 2 | 4 |
| Sweden | 9 | 90.6 | 2 | 61 | 0.6 |
| Netherland | 10 | 83.3 | 2 | 61 | 0.6 |
| France | 11 | 87.1 | 11 | 3 | 3.2 |
| Denmark | 12 | 83.5 | 1 | 84.5 | 0.3 |
| Norway | 13 | 83.3 | 1 | 84.5 | 0.3 |
| Singapore | 14 | 83 | 4 | 31 | 1.2 |
| South Korea | 15 | 81.4 | 8 | 9.5 | 2.3 |
| Italy | 16 | 78.7 | 5 | 20.5 | 1.5 |

| | | | | | |
|-----------|----|------|---|------|-----|
| China | 17 | 78 | 2 | 61 | 0.6 |
| Finland | 18 | 76.1 | 1 | 84.5 | 0.3 |
| Spain | 19 | 69.3 | 4 | 31 | 1.2 |
| Belgium | 20 | 68.1 | 3 | 46 | 0.9 |
| Austria | 21 | 67.5 | 5 | 20.5 | 1.5 |
| UAE | 22 | 66.9 | 1 | 84.5 | 0.3 |
| Ireland | 23 | 65.3 | 2 | 61 | 0.6 |
| Russia | 24 | 48.7 | 9 | 5 | 2.6 |
| India | 25 | 48.4 | 8 | 9.5 | 2.3 |
| Brazil | 26 | 46.9 | 8 | 9.5 | 2.3 |
| Thailand | 27 | 46.3 | 8 | 9.5 | 2.3 |
| Argentina | 28 | 24 | 5 | 20.5 | 1.5 |
| Indonesia | 29 | 26.7 | 9 | 5 | 2.6 |
| | | | | | |
| | | | | | |

Relationship between Best Country Ranking Vs Google Doodle Country Ranking:

Equation:

➤ $y = 1.7994 - 0.002x$ (Linear Equation):

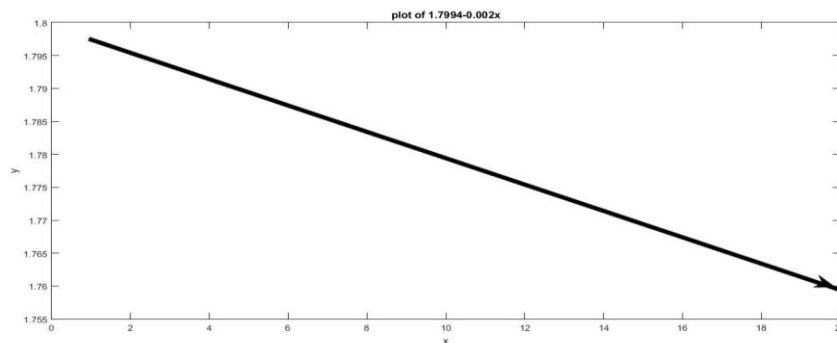


Figure 1

➤ $y = 4.5384 - 0.0974x + 0.0007x^2$ (Quadratic Equation):

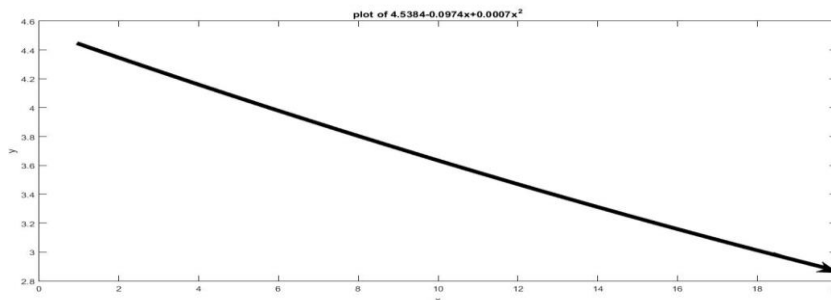


Figure 2

➤ $y = -0.1516 + 0.1784x - 0.004x^2 + 0.x^3$ (Cubic Equation)

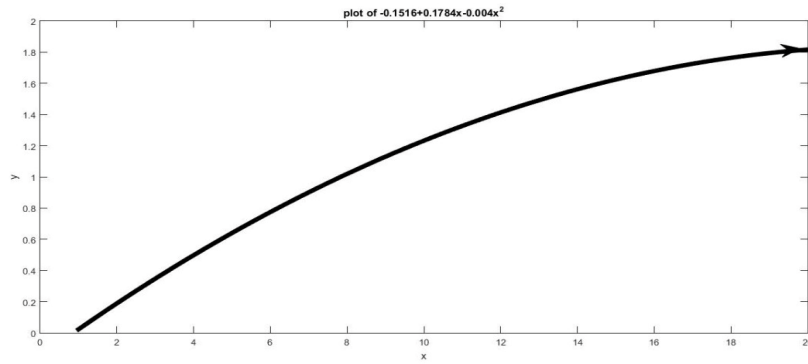


Figure 3

➤ $y = 1.8929e^{-0.006x}$ (Exponential Equation)

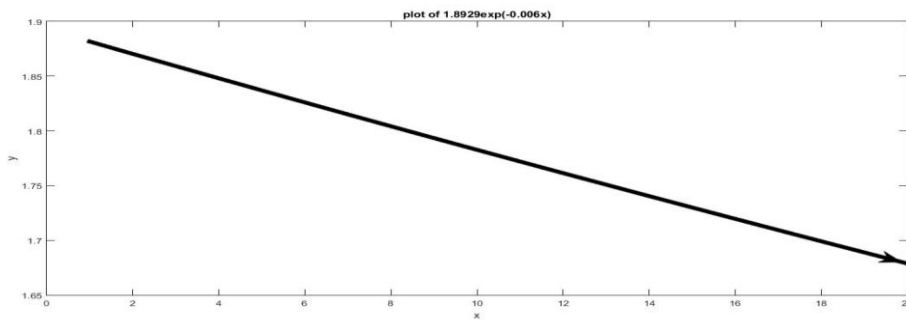


Figure 4

➤ $y = 1.8929.(0.994)^x$ (Power Equation)

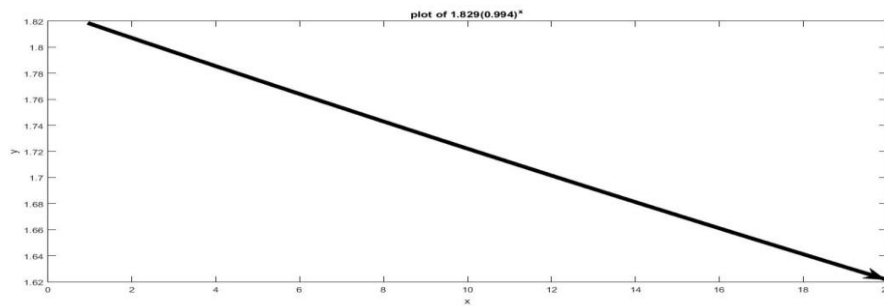


Figure 5

➤ $y=8.1044.x^{-0.4464}$ (Algebraic Equation)

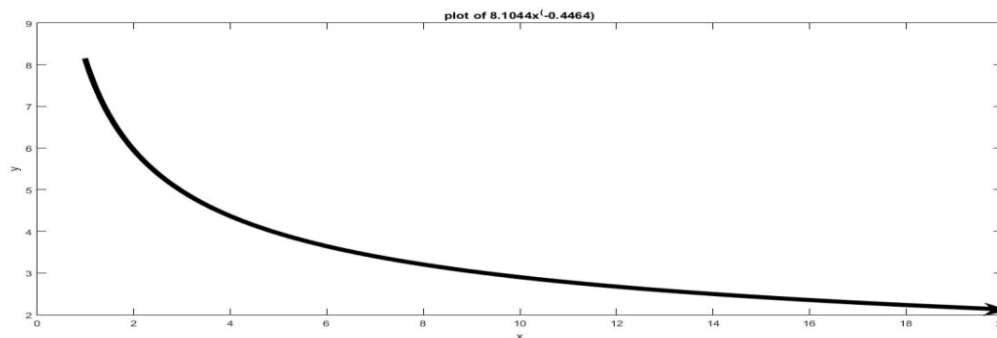
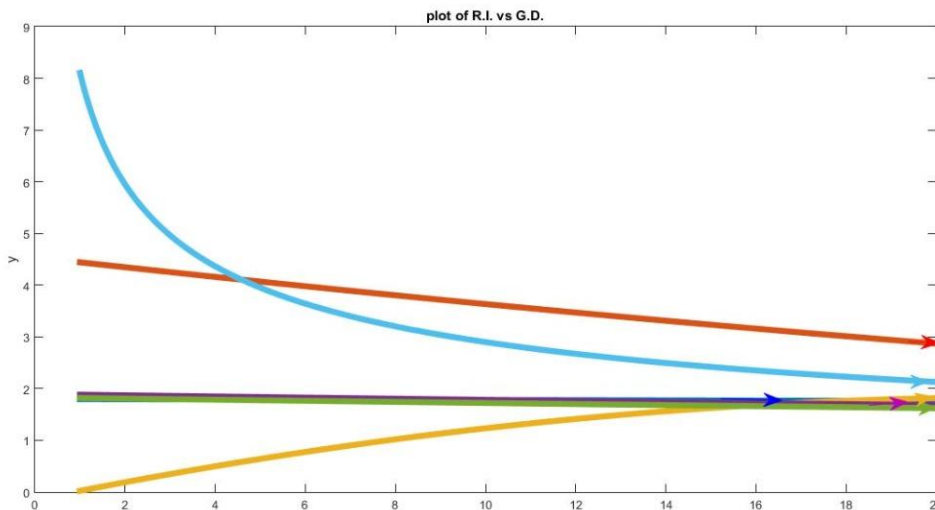


Figure 6

Relationship between Best Country Ranking Vs Google Doodle Country Ranking:



Established Relation between Happy Index 2021 and Google Doodle (2020):

| Country Name | Happy Index Rank | % (Round No.) | No of Doodle Count | Doodle Rank | % (Round No.) |
|--------------|------------------|---------------|--------------------|-------------|---------------|
| Canada | 14 | | 3 | 46 | 0.9 |
| Japan | 56 | | 8 | 9.5 | 2.3 |
| Germany | 13 | | 5 | 20.5 | 1.5 |
| Switzerland | 3 | | 2 | 61 | 0.6 |
| Australia | 11 | | 7 | 14 | 2 |
| US | 19 | | 23 | 1 | 6.6 |
| New Zealand | 9 | | 3 | 46 | 0.9 |
| UK | 17 | | 14 | 2 | 4 |
| Sweden | 7 | | 2 | 61 | 0.6 |
| Netherland | 5 | | 2 | 61 | 0.6 |

| | | | | | |
|-------------|-----|--|----|------|-----|
| France | 21 | | 11 | 3 | 3.2 |
| Denmark | 2 | | 1 | 84.5 | 0.3 |
| Norway | 6 | | 1 | 84.5 | 0.3 |
| Singapore | 32 | | 4 | 31 | 1.2 |
| South Korea | 62 | | 8 | 9.5 | 2.3 |
| Italy | 28 | | 5 | 20.5 | 1.5 |
| China | 84 | | 2 | 61 | 0.6 |
| Finland | 1 | | 1 | 84.5 | 0.3 |
| Spain | 27 | | 4 | 31 | 1.2 |
| Belgium | 20 | | 3 | 46 | 0.9 |
| Austria | 10 | | 5 | 20.5 | 1.5 |
| UAE | 25 | | 1 | 84.5 | 0.3 |
| Ireland | 15 | | 2 | 61 | 0.6 |
| Russia | 76 | | 9 | 5 | 2.6 |
| India | 139 | | 8 | 9.5 | 2.3 |
| Brazil | 35 | | 8 | 9.5 | 2.3 |
| Thailand | 54 | | 8 | 9.5 | 2.3 |
| Argentina | 57 | | 5 | 20.5 | 1.5 |
| Indonesia | 82 | | 9 | 5 | 2.6 |
| | | | | | |
| | | | | | |

Relation between Happy Index 2021 and Google Doodle (2020):

Equation:

➤ $y = 1.3105 + 0.0105x$ (Linear Equation)

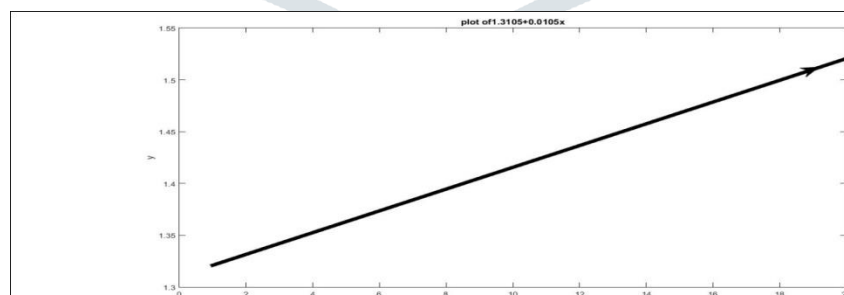


Figure 7

$$\triangleright y = 0.9959 + 0.0327x - 0.0002x^2$$

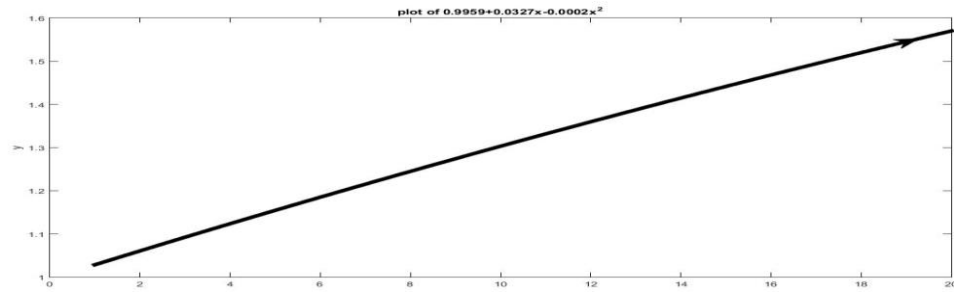


Figure 8

$$\triangleright y = 0.3346 + 0.1115x - 0.0018x^2 + 0x^3$$

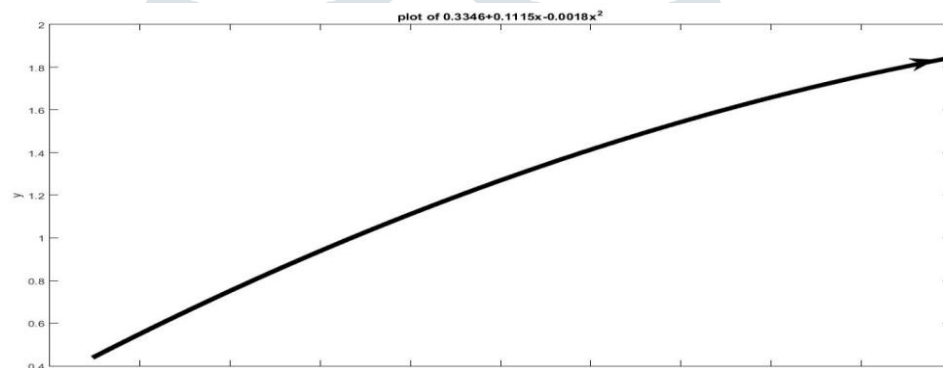


Figure 9

$$\triangleright y = 0.8639e^{0.0105x}$$

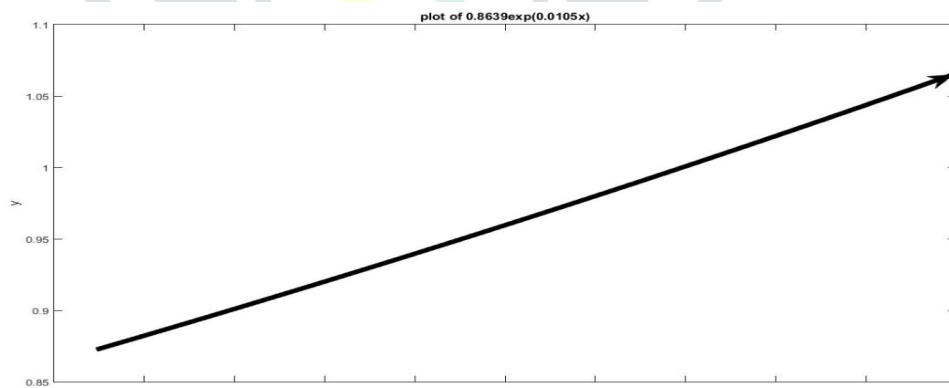


Figure 10

➤ $Y = 0.8639(1.0105)^x$

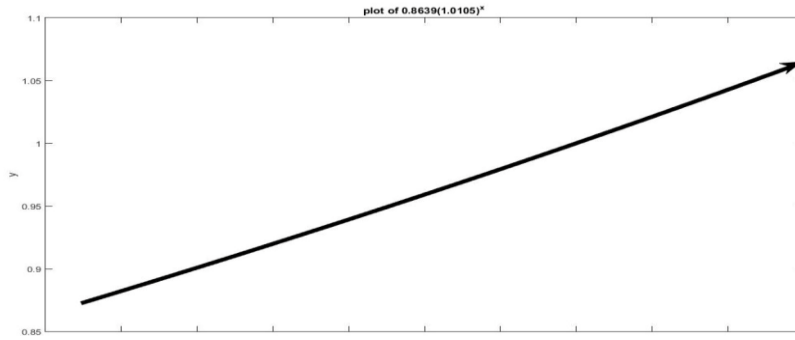


Figure 11

➤ $Y = 0.3473 \cdot x^{0.4259}$

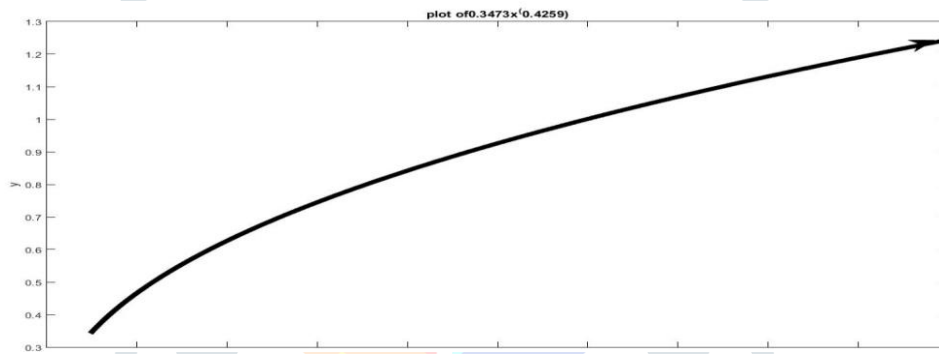
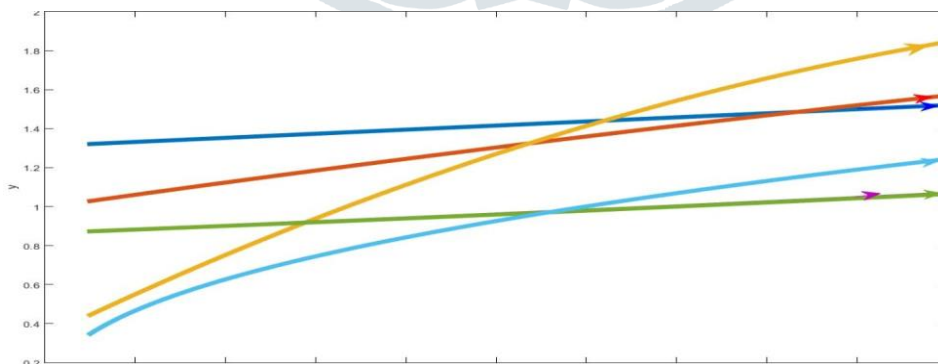


Figure 12

Relation between Happy Index 2021 and Google Doodle (2020):



Established Relation between Best Country Ranking 2021^{U.S News & World Report} and Happy Index (2021):

| Country Name | Best Country Rank | % (Round No.) | Happy Index Rank | % (Round No.) |
|--------------|-------------------|---------------|------------------|---------------|
| Canada | 1 | 100 | 14 | |
| Japan | 2 | 99.1 | 56 | |
| Germany | 3 | 98 | 13 | |
| Switzerland | 4 | 97.3 | 3 | |
| Australia | 5 | 96.6 | 11 | |
| US | 6 | 93.3 | 19 | |
| New Zealand | 7 | 92.6 | 9 | |
| UK | 8 | 92.3 | 17 | |
| Sweden | 9 | 90.6 | 7 | |
| Netherland | 10 | 83.3 | 5 | |
| France | 11 | 87.1 | 21 | |
| Denmark | 12 | 83.5 | 2 | |
| Norway | 13 | 83.3 | 6 | |
| Singapore | 14 | 83 | 32 | |
| South Korea | 15 | 81.4 | 62 | |
| Italy | 16 | 78.7 | 28 | |
| China | 17 | 78 | 84 | |
| Finland | 18 | 76.1 | 1 | |
| Spain | 19 | 69.3 | 27 | |
| Belgium | 20 | 68.1 | 20 | |
| Austria | 21 | 67.5 | 10 | |
| UAE | 22 | 66.9 | 25 | |
| Ireland | 23 | 65.3 | 15 | |
| Russia | 24 | 48.7 | 76 | |
| India | 25 | 48.4 | 139 | |
| Brazil | 26 | 46.9 | 35 | |
| Thailand | 27 | 46.3 | 54 | |
| Argentina | 28 | 24 | 57 | |
| Indonesia | 29 | 26.7 | 82 | |
| | | | | |
| | | | | |

Established Relation between Best Country Ranking 2021^{U.S News & World Report} and Happy Index (2021):

Equation:

$$\triangleright y = 2.7192 + 1.9567x$$

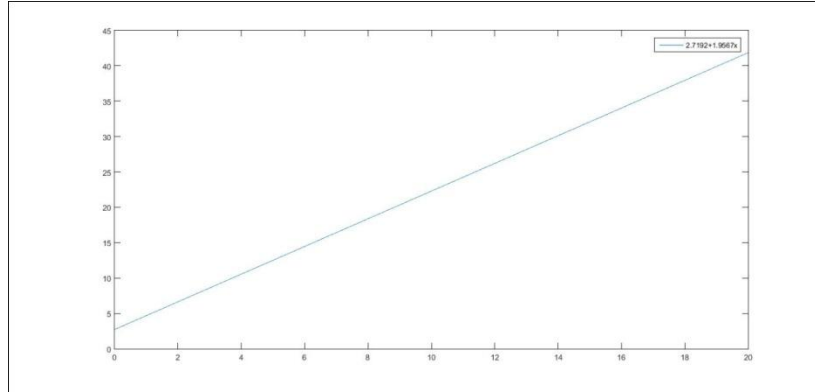


Figure 13

$$\triangleright y = 24.3394 - 2.2279x + 0.1395x^2$$

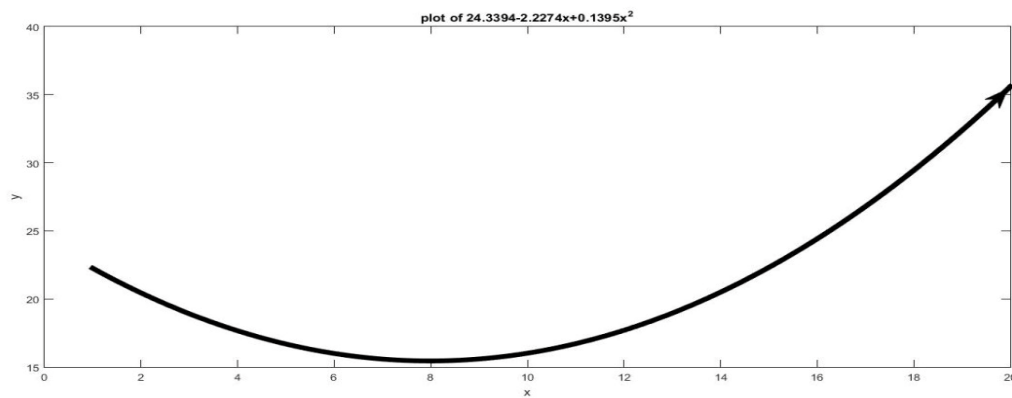


Figure 14

$$\triangleright y = 28.9026 - 3.9121x + 0.2775x^2 - 0.0031x^3$$

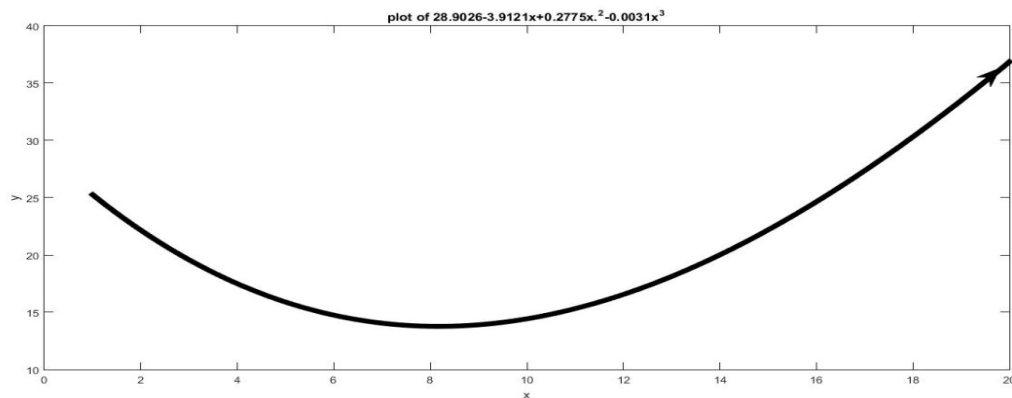


Figure 15

➤ $y = 7.3225e^{0.0625x}$

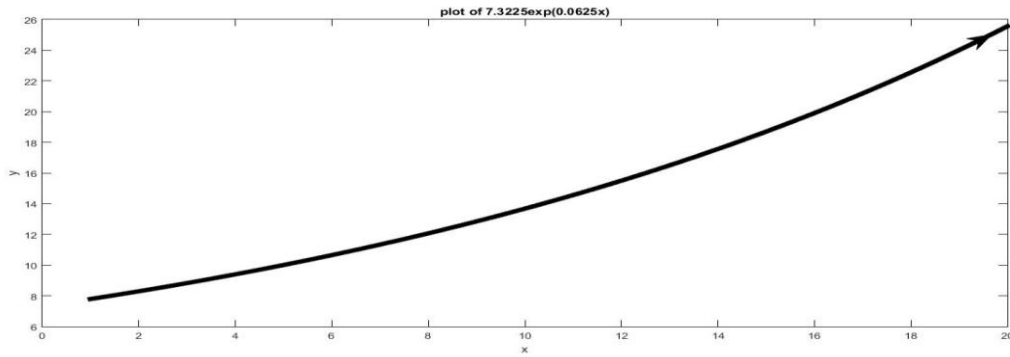


Figure 16

➤ $y = 7.3225 \cdot (1.0645)^x$

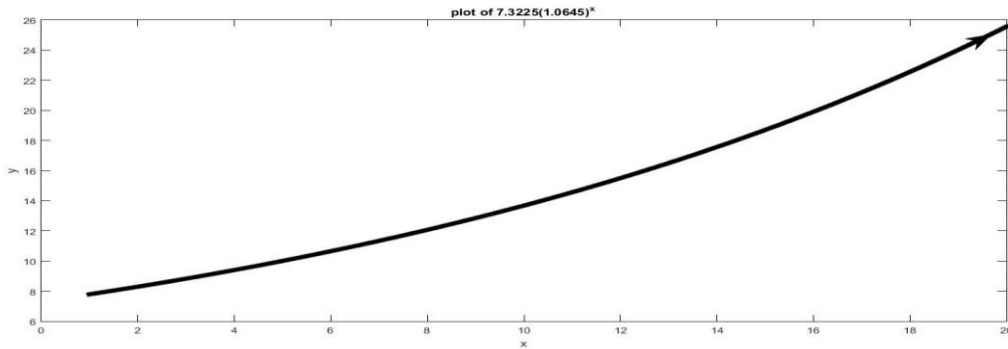


Figure 17

➤ $y = 6.7811 \cdot x^{0.4128}$

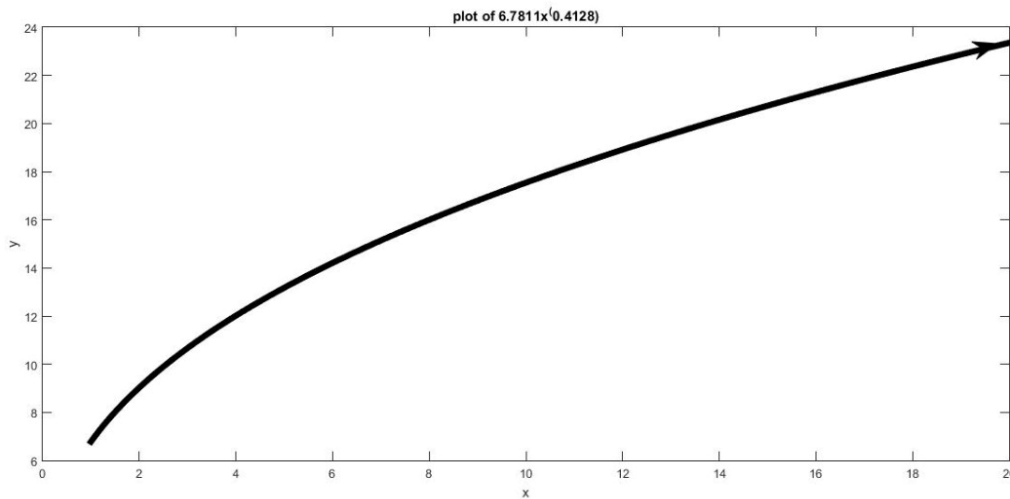
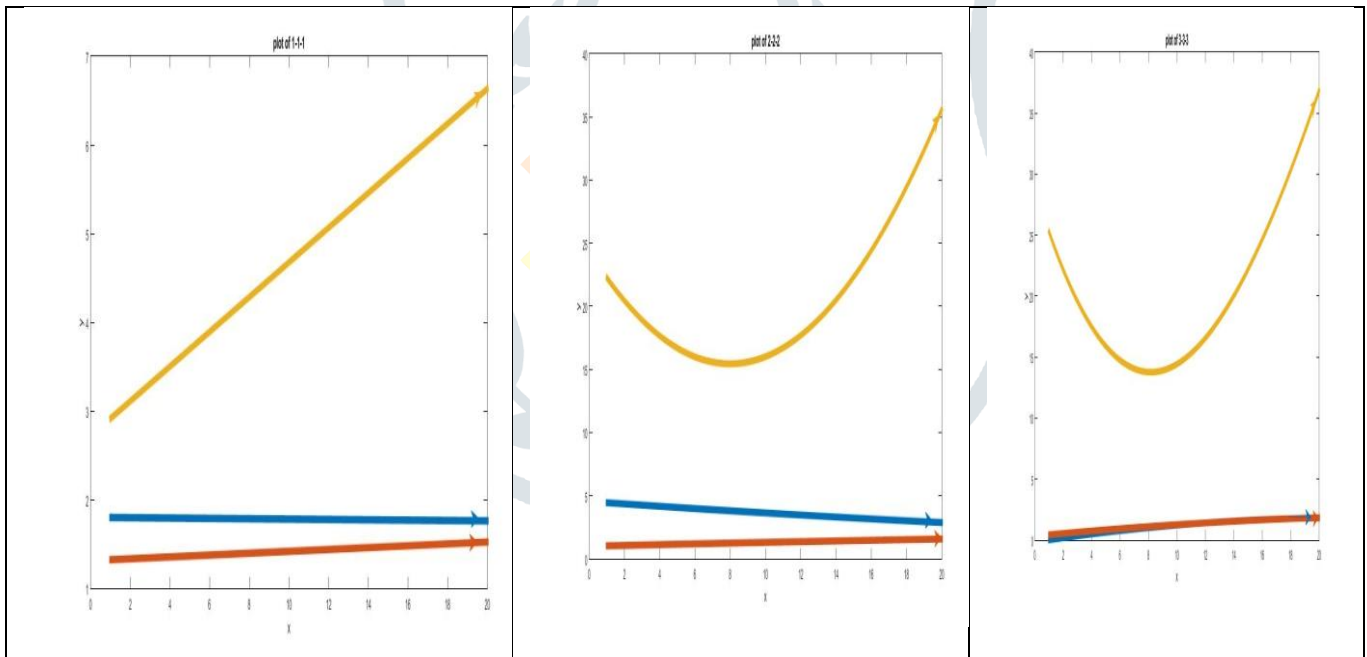
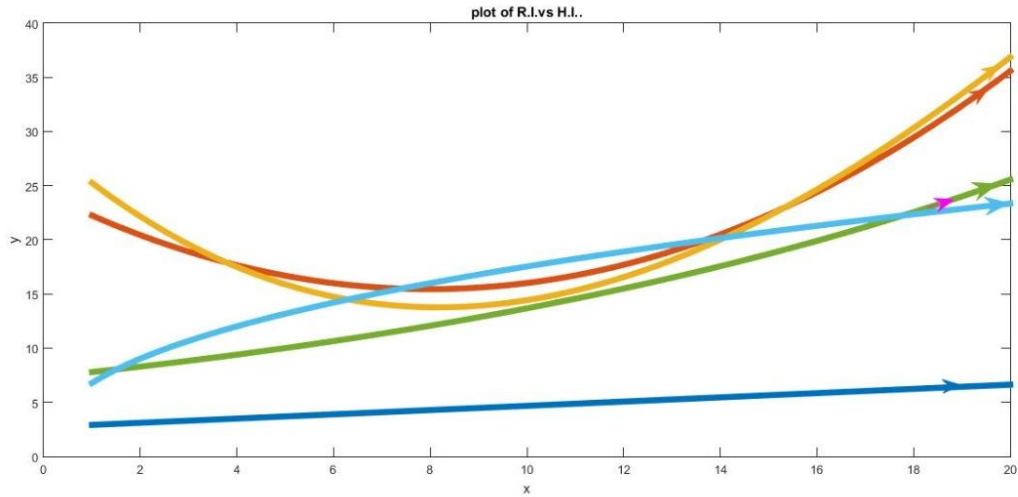
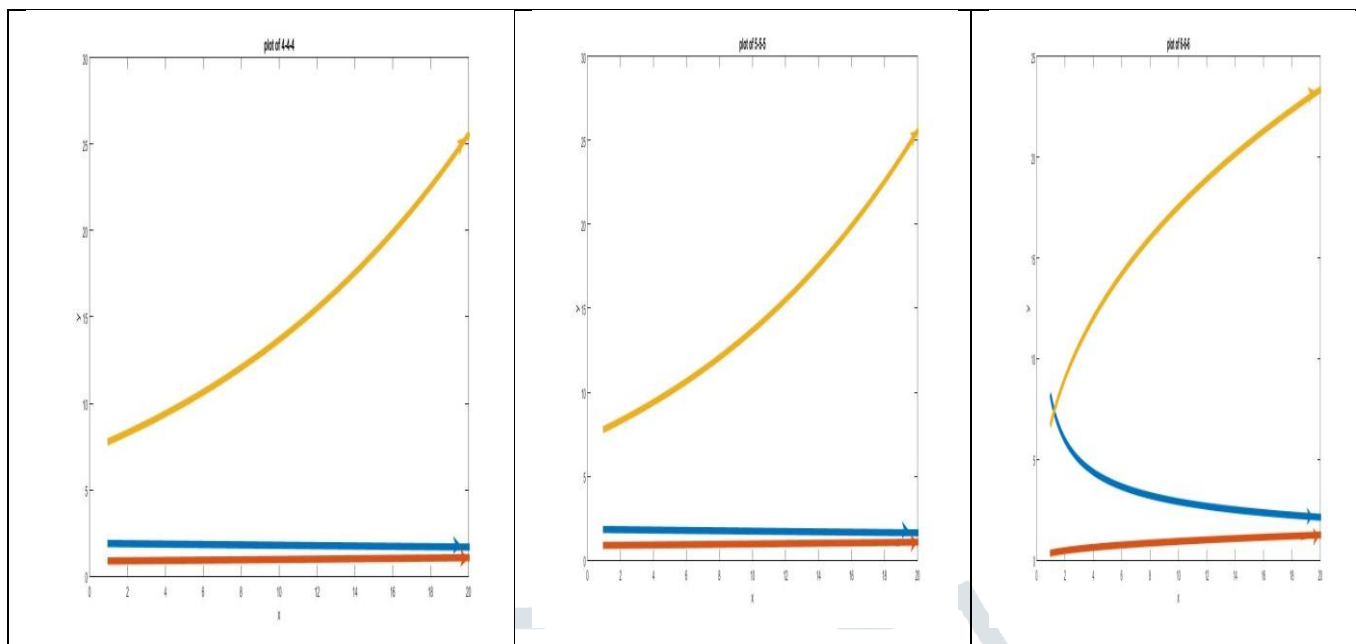


Figure 18

Established Relation between Best Country Ranking 2021^{U.S News & World Report} and Happy Index (2021):





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Status of World Continents in Relation with Google Doodle, Best Country Ranking 2021 and Happiness Index, 2021.



| Country Name | Best Country Rank | Happy Index Rank | No of Doodle Count |
|--------------|-------------------|------------------|--------------------|
| Canada | 1 | 14 | 3 |
| Japan | 2 | 56 | 8 |
| Germany | 3 | 13 | 5 |
| Switzerland | 4 | 3 | 2 |
| Australia | 5 | 11 | 7 |
| US | 6 | 19 | 23 |
| New Zealand | 7 | 9 | 3 |
| UK | 8 | 17 | 14 |
| Sweden | 9 | 7 | 2 |
| Netherland | 10 | 5 | 2 |
| France | 11 | 21 | 11 |
| Denmark | 12 | 2 | 1 |

| | | | |
|-------------|----|-----|---|
| Norway | 13 | 6 | 1 |
| Singapore | 14 | 32 | 4 |
| South Korea | 15 | 62 | 8 |
| Italy | 16 | 28 | 5 |
| China | 17 | 84 | 2 |
| Finland | 18 | 1 | 1 |
| Spain | 19 | 27 | 4 |
| Belgium | 20 | 20 | 3 |
| Austria | 21 | 10 | 5 |
| UAE | 22 | 25 | 1 |
| Ireland | 23 | 15 | 2 |
| Russia | 24 | 76 | 9 |
| India | 25 | 139 | 8 |
| Brazil | 26 | 35 | 8 |
| Thailand | 27 | 54 | 8 |
| Argentina | 28 | 57 | 5 |
| Indonesia | 29 | 82 | 9 |

Average of World Continents:

| | Asia | Australia | America | Africa | Europe | Remark |
|---------------|-------|-----------|---------|--------|--------|--------------------------|
| R.I (Average) | 18.87 | 06 | 15.25 | 00 | 14.06 | Highest Ranking is Worst |
| H.I (Average) | 66.75 | 10 | 82.25 | 00 | 16.73 | Highest Ranking is Worst |
| G.D (Average) | 06 | 05 | 9.75 | 00 | 4.4 | Highest Ranking is Good |
| | | | | | | |

Note= The average of the all continents have been calculated by the ranking of the 29 countries for the study.

Position of the World Continents:

| | Asia | Australia | America | Africa | Europe |
|--------------|-----------|-----------|-----------|-----------|-----------|
| R.I | 4 | 1 | 3 | 00 | 2 |
| H.I | 3 | 1 | 4 | 00 | 2 |
| G.D | 2 | 3 | 1 | 00 | 4 |
| Total | 09 | 05 | 08 | 00 | 08 |

Hence the Result shows:

G.D > But not Happy.

G.D > But not Recognized.

H.I + R.I > But not G.D

Less average aggregate is more better for H.I + R.I but not G.D.

On an aggregate average all are nearly equal hence our selection of the Countries Continents according to data of H.I, R.I and G.D is sound.

Conclusion:

The following conclusions for the study are given below.

1. Cut point of three combined curve.
2. Countries from African continents have no signification role in Google-Doodle.
3. Countries suffering from unstable political environment have no significant role in Google -Doodle.
4. European countries have obtained enough numbers of Google-Doodle irrespective of their Recognition Index and Happiness Index.
5. Among Asian countries only India, Thailand and Indonesia obtained the remarkable status in Google-Doodle.
6. India and China have not much higher position in Recognition Index and Happiness Index even if India secured higher status in Google-Doodle but not China.

| | China | India | Rank |
|-----|-------|-------|-------------|
| H.I | 84 | 139 | |
| R.I | 17 | 25 | |
| G.D | 57 | 9 | |

- 7 European continent has secured higher value in Google-Doodle even if not obtain H.I & R.I.
- 8 Top 3 in H.I, R.I & G.D,,
- 9 Lowest three H.I, R.I & G.D
- 10 Average of Continent H.I, R.I & G.D
- 11 If Average of continent match at cut point certainly analysis in vital.
- 12 Average of only 29 countries distributed in all continents respectively, if it matches with our curve cut point them study is vital

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