GDP and Freedom: Happiness Level in Asian Countries in a Post-World War II World

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QGIS Final Project Report

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Where did you extract the data from?

The data for this project has been extracted from two sites: Kaggle (2016) for World Happiness Score and Indicators, and Natural Earth Data (2022) for Asia's Esri shape files.

How did you create the map i.e. the software, tools and process?

The maps are created using the GIS software QGIS. Firstly, from the Natural Earth Data shape files that constitute the geographical information of the world, admin 0 data was obtained of the Asian countries. Admin 0 level data represents the boundary lines of the countries like it would on an international/country level. Then, the data on World Happiness was collected from Kaggle that provided information about various indicators and scores of different countries around the world in 2016. The Kaggle dataset was therefore cleaned on MS Excel to obtain relevant information pertaining to Asian countries. The comma separated file (CSV) was imported to QGIS using the open delimited text feature, and then the data was joined with the shape files using the 'country' category from the Happiness Data and the 'ADMIN' category from the admin 0 data shape file. This allowed us to combine the two files by using Countries as the main key. Then, variables from the Happiness data were used to make a graduated symbology to create a heat map showing the differences between countries based on variables like GDP and Freedom. Appropriate legend was created and relevant color codes were assigned, such as shades of red were used to represent low ranks while green was used to symbolize positivity and better conditions. Important definitions were also provided on the map for viewer's better understanding.

Motivation behind creating the map, challenges faced and lessons learnt.

Our motivation behind creating these maps was to examine the relationship of world happiness with indicators such as GDP per capita, family, health (life expectancy), freedom to make life choices and trust (government corruption) and to what extent these factors contribute in evaluating the happiness of a country. To do so, we have chosen South Asian, South East Asian and East Asian countries and attempted to see any correlation of the Happiness Score of these countries with two important indicators, GDP per capita and Freedom.

The World Happiness Scores are based on answers to a main life evaluation question asked by respondents in a poll. This question asks respondents to think of a ladder with the best possible life for them being a 10 and the worst possible life being a 0 and to rate their own current lives on that scale, keeping in mind six factors – economic production, social support, life expectancy, freedom, absence of corruption, and generosity - that impact their life. These scores are from nationally

representative samples for the year 2016 and use weights to make the estimates representative. They depict the happiness score at the national level rather than an individual level.

The first map (Fig.1) we have made is general and shows the happiness scores of countries belonging to all 3 regions namely South Asia, East Asia and Southeast Asia.

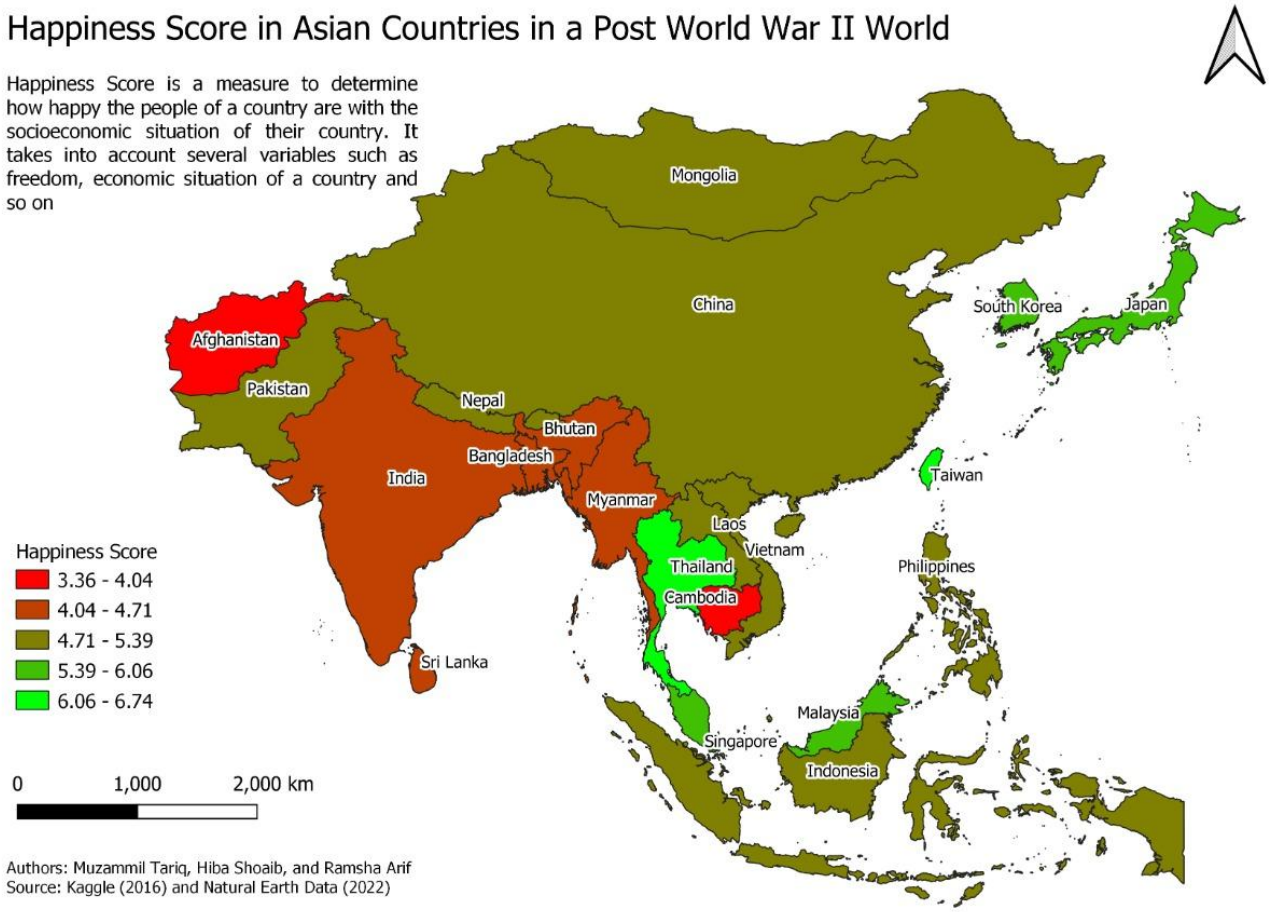

Fig.1: Map 1

Using the data and maps, we can compare the happiness score of South Asian countries, Southeast Asian and East Asian countries both within and among them.

Within Southeast Asian countries, Singapore has the highest score of 6.73 of Singapore and Cambodia with the lowest score of 3.90. For East Asian countries, Taiwan has the highest score of 6.37 and lowest score is 4.9 of Mongolia. And for South Asian countries, Bhutan has the highest score of 5.196 and Afghanistan has the lowest score of 3.36.

Overall if we compare the happiness scores among these regions, then we can see that Southeast Asia has the greatest happiness levels, followed by East Asia and then South Asia. South Asian countries like India, Bangladesh, Bhutan, Afghanistan have some of the lowest happiness scores.

In the second map (Fig.2), we have shown the relationship of GDP per capita with the happiness score of a country. GDP per capita is a financial measure used to determine the economic output per person of a country. It is calculated by dividing the economic output of a country by the population of that country.

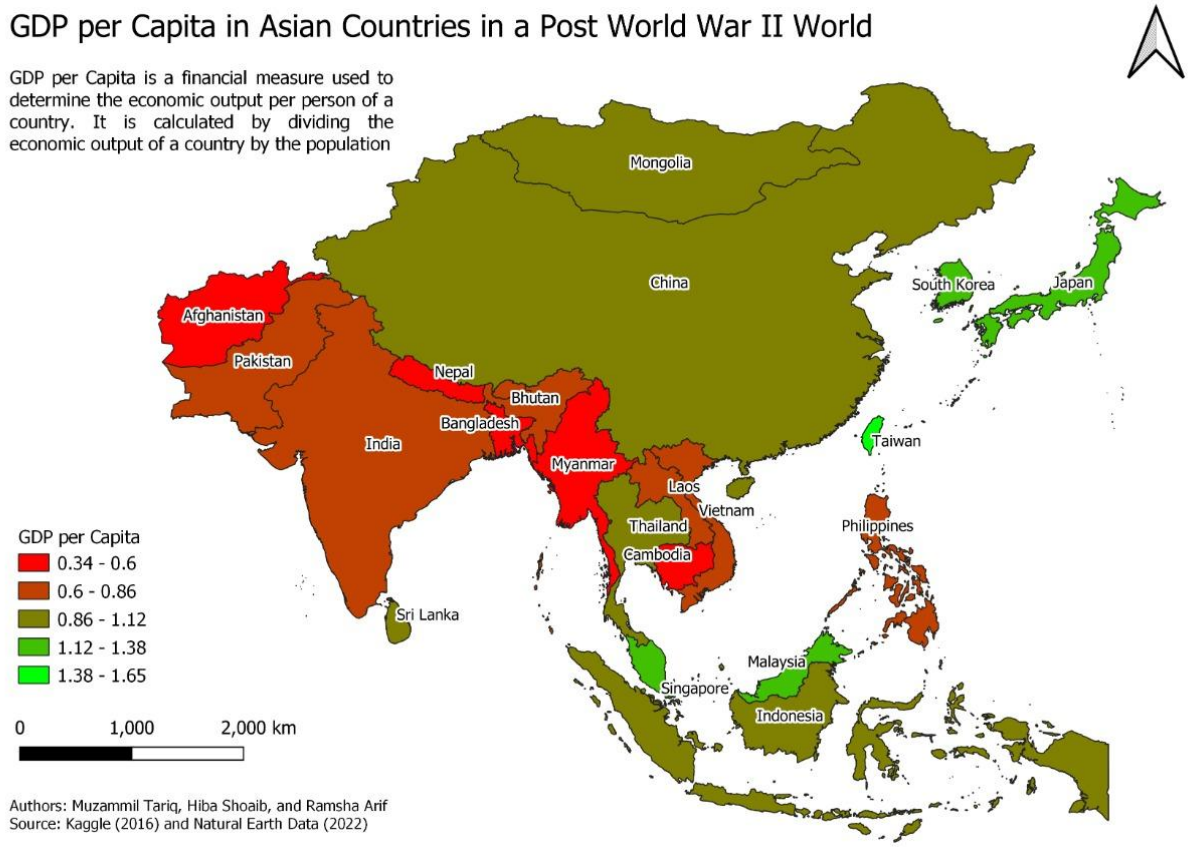

Fig 2: Map 2

If we particularly take into account the GDP score, then we can see that East Asian countries like Taiwan (1.39) and Southeast Asian countries like Singapore (1.39) have relatively higher GDPs, as compared to the South Asian countries whose GDP lies in the bottom range of 0.34-0.86. One of the major reasons behind this is that Post-World War II, East Asian Countries mainly China, Hongkong, Japan, Taiwan, South Korea became one of the world's largest and prosperous economies (Chattopadhyay, 1975). Major growth factors have ranged from favorable political and legal environments for industry and commerce. This includes abundant natural resources along with plentiful supplies of relatively low-cost, skilled, and adaptable labor. Similarly, following post war independence, Southeast Asian countries made remarkable progress in the field of education, pre and post World War II in Philippines, Indonesia, Malaysia and Singapore from 54 to 90 per cent of the people became literate (Veenhoven, 2000). Moreover, these countries have benefitted the most because of their geographical position, an example of this is Singapore which has the highest GDP

per capita in the region owing to its key geographical position. Furthermore, global connections have been the principal driver of economic success in East and Southeast Asia. On the other hand, South Asian countries did not show rapid progress in terms of development such as countries like Pakistan, India, Bangladesh, Sri Lanka and Afghanistan. The main reason behind this were the profound changes in their political regimes and political instability which affected the implementation of economic reforms in these countries (Chattopadhyay, 1975). Moreover, low literacy rate, corruption and terrorism continue to be more prevalent in South Asian countries as opposed to Southeast and East Asian countries, hindering not only their development but simultaneously affecting their happiness scores and citizen's level of freedom.

However, happiness or development of a country cannot be described by economic growth alone. Taking into account people, their capabilities and perceptions about happiness should be the ultimate criteria when assessing the happiness score of a country. Human Development Index (HDI) is a more holistic approach whose key dimensions are life expectancy at birth, educational dimension and the standard of living dimension. Therefore, it was deemed appropriate to create another map showing the level of freedom people possess in a country.

Hence, the third map (Fig.3) uses freedom as an indicator and manifests how it affects the happiness score of a country. Freedom to exist is a socioeconomic measure to understand how much autonomy the people of a country possess in terms of taking decisions and making their life choices.

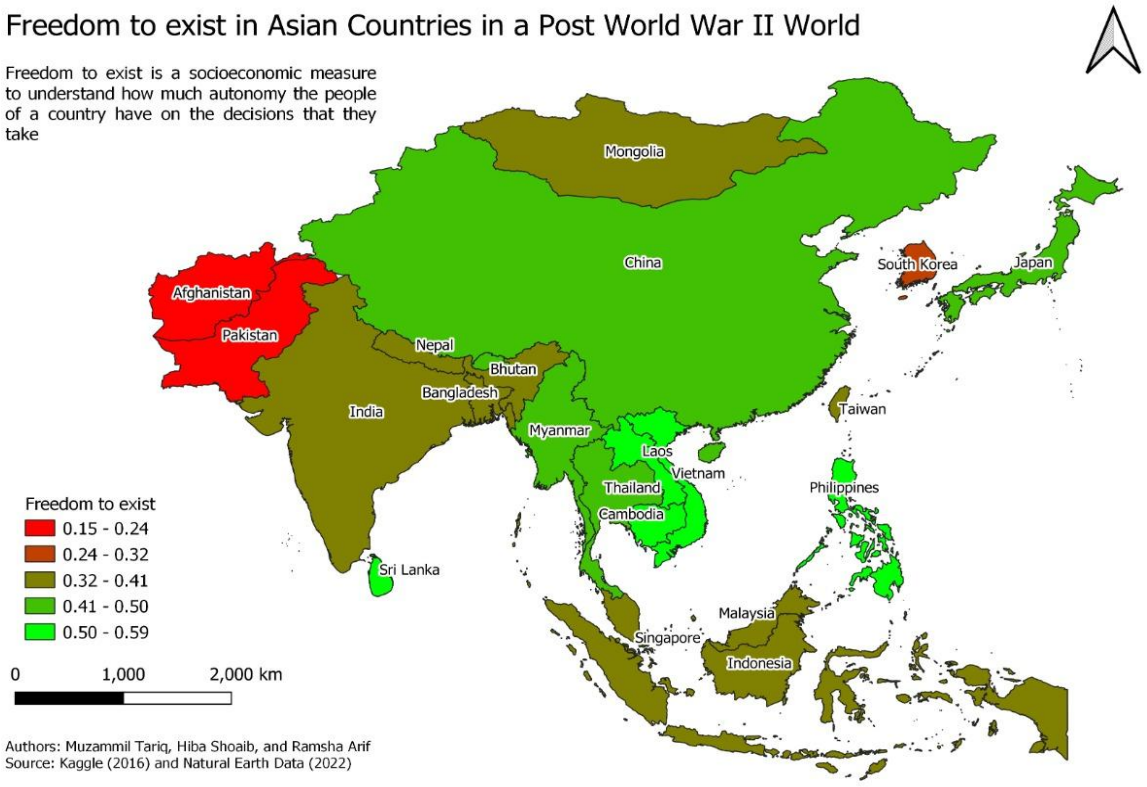

Fig. 3: Map 3

Freedom in nations tends to affect the happiness of citizens both positively and negatively. Freedom can be measured based on three aspects, political, economic and private freedom. It is believed that freedom is positively related to happiness among rich nations, but not among the poor nations (Veenhoven, 2000). However, if we look at our map of freedom, Taiwan, Japan and Singapore are the countries with the highest GDP, but freedom is comparatively low in these countries as compared to Philippines, Sri Lanka, Vietnam and Cambodia whose GDP per capita is below 1 but these countries have the highest levels of freedom. Based on this, we can say that freedom is not always positively related with GDP.

Similarly, in some countries such as Malaysia and Indonesia levels of freedom are low but happiness scores are relatively high, hence freedom and happiness do not necessarily have a positive correlation as well. South Asian countries have the least amount of freedom and their GDP is also low, thus resulting in low happiness scores. Hence, based on our maps, we observe that GDP per capita has a stronger correlation with the happiness score of countries as compared to freedom.

One of the major challenges we faced was to find a credible source for obtaining a good quality dataset. Initially, we wanted to base our project just on Pakistan but it got increasingly difficult to find up-to-date and free datasets for our context. The datasets that we first obtained were either incomplete, outdated and incoherent. Moreover, we experienced some technical difficulty in creating a graduated symbology with an appropriate color code and its respective legend, precisely because we were dealing with three regions namely South Asia, South East Asia and East Asia. Each region had multiple countries in addition to their different GDP levels, Happiness and Freedom Scores. Hence, it got slightly difficult to visually analyze these regions together and provide relevant definitions without creating too much clutter. Nevertheless, this project allowed us to develop creative and powerful visual depictions to learn about Asia's Happiness Scores and provide strong analytical arguments.

References

Chattopadhyay, P. (1975, August 1). *South Asia since the Second World War*. ECA IR Home. Retrieved April 16, 2022, from https://repository.uneca.org/handle/10855/42303

Natural Earth Data. (2022). Retrieved from, https://www.naturalearthdata.com/

Veenhoven, R. (2000). *Freedom and Happiness: A comparative study in 46 nations in the early 1990's* . Retrieved April 15, 2022, from https://personal.eur.nl/veenhoven/Pub2000s/2000a-full.pdf

World Development Indicators. (2016). Kaggle. Retrieved from, https://www.kaggle.com/datasets/kaggle/world-development-indicators