Efficacy Of Social Development Among Brics Nation

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Abstract:
Background: This paper analyses social development across BRICS nations from 2008-2019 using indicators like IHDI, HDI, MYS, Life Expectancy, PCI, EPI, GPI and HFI.
Results: Section-1: Analysis showed India lagged most BRICS countries on social indicators, though demonstrated high growth rate over the decade. Comparatively, China and Russia performed best overall.
Section-2: Regression analysis found that while jointly significant with other indicators, IHDI and HDI do not fully capture social development dimensions. Proposed new Simple Index for Social Development (SISD) weighs all indicators into a composite score.
Conclusion: Sustained investments in health, education, environment needed for inclusive development in India and BRICS. No single index measures social development accurately; custom composite indices like SISD better represent multidimensionality.
Key Word: BRICS, Social Development, Human Development Index, Inequality-adjusted Human Development Index, Composite Indices

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I.   INTRODUCTION

Social Development:

Social development refers to the improvement in the well-being of individuals, leading to better understanding, behavior, and attitude as a whole in a society, leading to a better life. This generally happens due to investments in people.[2]

A society becomes peaceful when equal opportunities are present for people to improve and develop. It not only improves economic factors (such as income, employment, poverty, etc.) but also non-economic factors (gender equality, health, education, political inclusion, etc.). A society is said to be happy and successful only because of the well-being of its citizens.[3]

Basic social policy values such as equality, justice, and solidarity mark the making of a peaceful society. Economic growth and sustainable development can be achieved through long-term social policy investments in society. Improvement in basic human rights such as education and health leads to development in the lives and resources of people and a sense of independence in their lives. Some basic indicators of social development include:

- Health (Infant Mortality Rate)
- Education (literacy rate)
- Human Development Index
- Rate of unemployment
- Population
- Equality in Income
- World Wealth

People only learn to live in a developed world when they have been given the choice of choosing for themselves, i**No table of contents entries found.**.e., when people have the liberty of deciding who to be, what to do, and how to live and have the means of living the life to which they aspire.

The subject of the study revolves around the countries of the group BRICS (Brazil, Russia, India, China, and South Africa) in the years 2008–2019. We aim to study the level of social development in these countries and their growth based on some of the best indicators of social development, i.e., IHDI, HDI, EPI, MYS, etc. [4]

This research paper also aims to study whether IHDI or HDI can be taken as a representative parameter to study social development.

Social Indicators: Social indicators are the tools employed to monitor the change in social parameters to detect and anticipate social change and to evaluate quality of life and their impact on specific programmes. Examples are unemployment rates, crime rates, estimates of life expectancy, HDI, etc. [8]

HDI – An important indicator of social development:

The Human Development Index (HDI) is a measure of social development through the geometric average of representative indicators in the following dimensions of human development [3]:

* Human life and health
* Education
* Quality of life (Standard of living)

The United Nations Development Program (UNDP) produces the annual human development report through the Human Development Report Office. HDI is an index to the aforementioned report.[1]

The United Nations Development Programme (UNDP) aims to eradicate poverty and achieve sustainable economic growth by helping various countries. It was set up by the United Nations. Its annual report on human development across the UN nations, known as the Human Development Index, brings focus to key development issues and provides tools for measurement, innovative analysis, and policy proposals. [1] [3]

Note-: The main indicators used for our analysis also include the Inequality-Adjusted Human Development Index (IHDI), which will be explained further ahead.

India's Performance:

India's performance in this index has a history of being categorised as low. In the Human Development Report 2020, out of 189 countries, India has ranked 131 on the Human Development Index 2020 prepared by the United Nations Development Programme (UNDP). With an HDI value of 0.645, the country fell into the medium human development category. Comparatively, India's neighbour China and Sri Lanka's rank 85 and 72, respectively, on HDI. [1] [3]

World Bank View on Social Development:

The World Bank views social sustainability and inclusion, formerly known as social development, as eliminating restrictions on development, including the inclusion of people in various social and economic opportunities, and improving investment in personal and inclusive growth. [2] [7]

It has been observed that exclusion and discrimination lead to high costs for both the economy and its people. Gender inequality is said to cause a loss of $160.2 trillion in human capital wealth. Many such examples can be observed, such as:

* African descendants are experiencing poverty
* Disabled children are not attending school
* More than 70 countries criminalise homosexuality.

The World Bank provides financial and technical assistance to various developing and underdeveloped countries worldwide. It releases the World Development Indicators Database in order to classify its member countries and other economies. The database is used to segregate, consolidate, and compare statistical data of interest and to present key statistics. [2]

HDI and the World Bank's report help to categorise human welfare through both quantitative and qualitative means. [2]

India's performance:

India is currently classified as a lower-middle economy by the World Bank. India is ranked at 115 positions in the index, with a score of 0.44 on a scale of 0 to 1, coming even below the average score for South Asia in the year 2020. Overview India has recorded high economic growth during the past three decades but continues to maintain low rankings in the welfare figures discussed above. This shows the true nature of the country with respect to welfare and development. [2]

Other social development indicators:

As already mentioned, social development is a very broad concept; hence, it can't be completely accommodated by the indicators of the World Bank or IHDI. [2] [3]

In this research paper, we include some famous and broad parameters to explain social development and the efficiency of its development in the BRICS nations.

Some of these indicators include:
* Environment Performance Index (EPI)
* Global Peace Index (GPI)
* Inequality Coefficient

- Human Freedom Index (HFI)

II. LITERATURE REVIEW

It has been observed that social development involves various fields of study or segments; hence, there are numerous theories and theses on the same. Here are some views and thoughts by various authors and scholars that we have used as references or as the basis for our research paper. [8]

- According to **May (2008)**, the argument used for looking into the accelerated growth rates of BRICS countries is the ability to lift millions of people out of absolute poverty.
- **Plotnikova (2011)** indicates that the economic growth of BRICS must be based on sustainable development, seeking to provide qualitative improvements to their systems, in view of the great responsibility to promote sustainable development in light of the projected economic growth potential.
- **Wilson and Purushothaman (2003)** indicated that despite their rapid economic growth, the populations of these countries are still, and will remain until 2050, likely to be poorer on average than the G6 population.
- **Pao and Tsai (2010)** presented the Environmental Kuznets Curve hypothesis for the BRIC countries. Based on the work of these authors, it was concluded that increased environmental pollution occurs together with economic growth; however, it stabilizes and begins to decrease after a certain level of income per capita.
- **Lawson et al. (2007)** presented evidence that urbanisation and industrialization are particularly responsible for environmental degradation. According to these authors, atmospheric pollution is a growing problem and a predictable growth consequence of the BRIC countries, given their current high energy intensity phase.
- **Tamazian et al. (2009)** found that over the past few years, the BRIC economies have experienced episodes that have contributed to increased CO_2 levels, which implies adverse consequences for global mitigation strategies concerning this dire trend.
- **Lastres et al. (2007)** pointed out that the population representativeness of the BRIC group, in terms of world population, can be considered a challenge. These authors also added that the challenges seen in large populations relate primarily to infrastructure, health, and education services. In addition to these, the authors reported that there are other problems related to population issues, such as unemployment and high-income distribution inequality.
- **Costantini & Monni (2008)**, analysed the relationship between human development, sustainability, and economic growth by adopting a development perspective of analysis. The results confirmed the strong positive relationship between human development and a sustainable growth model.
- **Ranis (2004)**, linked the increase in economic performance to the extension of freedom and capacity and thus showed that human development would significantly affect development. Similarly, the degree to which revenue has increased widens the range of capabilities and options that benefit the government and households and thus enhances human development.
- **Khodabakhshi (2011)**, found that the per capita gross domestic production index in the Indian economy has had good growth, but the impact on other indicators of human development index is very low, even on some indicators such as life expectancy, which has been ineffective. The results show that the Human Development Index in India is growing along with the downside.
- **Pramod & Abraham (2002)** investigated the role of human development policy on the economic growth of Indian states for the period 1980–97. The study found that the policies a government pursues have a significant impact on the economic growth of the state. It further suggests that expenditure on education is of considerate importance for non-economic development, while expenditure on health does not contribute significantly.
- **Sen (1999)** talks about the capability approach to measuring development. He discredits homogenous parameters like real income or utility as measures of a developing economy. Sen points out that the freedom to choose a life one wants to live is of utmost importance in a society, and it is this freedom that determines how developed a society truly is. He then links the importance of a robust health and education system to income estimates and explains the role of a strong social welfare platform in increasing overall development.
- **Schaffer (1996)** refers to the behavior patterns, feelings, attitudes and concepts one manifests in relation to others.
- **Azmitia (1996)** Talking about prosocial behavior, defined by psychologists as "intentional, voluntary behaviour intended to benefit another" (Eisenberg, 1992, p. 3), is another significant aspect of social competence. Sharing, caring, helping, cooperating, comforting, and other prosocial acts begin to increase in middle childhood, and children aged 6 to 7 years can typically be observed offering to help but waiting for a peer to accept before actually helping.

- **Epstein (2009)** has found that socially competent children are happier and interact with peers more successfully than less socially competent children. It has also been found that they are more popular with peers and satisfied with life, and that they are typically perceived as more desirable companions by others.

III.   RESEARCH OBJECTIVES

The objectives of this research paper can be summarized as follows: -

- Comparing India's social indicator's scores with the rest of the BRICS counterparts and summarizing lessons that India can learn from these experiences for better future prospects.
- To explain the low ranking of India when it comes to social development indicators despite consistent and steady economic growth.
- To analyze the data as per the representative indicators of each segment of social development during the period of 2008-2019.
- To see whether IHDI or HDI can be taken as a representative indicator to depict the level of social development.

IV.   RESEARCH QUESTIONS

From the following study, we aim to answer the following questions: -

- Is the IHDI or HDI ranking a true measure of social development among BRICS nations?
- In comparison to each other, what are the standings of the BRICS nations in terms of their status of social development?
- Can an individual country's IHDI or HDI score be explained better by taking factors that are more oriented towards defining the safety of citizens, green and sustainable growth, and various other factors that are most relevant in terms of today's perception of social development?
- What has been the level of growth in terms of social development in the BRICS nations in the past decade?

V.   RESEARCH GAPS

Studying the literature available on the chosen topic, the following areas were left uncovered or were not covered satisfactorily.

- Since Social Development is a broad field of study/segment as it includes social and economic factors, such as income, education, employment, community safety, and social supports and many more. Therefore, it is not feasible for us to take into consideration the effect of all segments of social development.
- Only representative indicators have been taken from each segment as various sub-segment exists in that particular field of study.
- The measure of calculation of indicators used in the paper are generally time-specific and country-specific. So, the analysis may not be truly accurate.

VI.   LIMITATIONS

In our research we experienced various shortcomings from our side which may lead to inefficient results. Some of these are: -

- Although we are doing quantitative research, our knowledge regarding regression is still at a primary level, which may not give us accurate results.
- The data we used for our research is from secondary sources, so there is a high probability of insufficiency and non-accuracy of the data.

The lack of specific information we needed for different subgroups of nations based on their growth and development levels was another barrier we had to confront while organising content for this analysis.

VII.   RESEARCH METHODOLOGY

Keeping in mind the objectives that we want to achieve through this paper, we have chosen both quantitative and qualitative methods. Tools of visual representation from MS Excel and tools of inferential statistics from the software R will be used in this research.

Data Source

To maintain and ensure authenticity, all the data and content used in this research project have been taken from official and authorised websites. Some of the organisations from which data has been taken are:

1. World Health Organization (WHO)
2. United Nations Development Programme (UNDP)
3. World Bank
4. Institute for Economics and Peace (IEP)

5. CATO Institute
6. Yale University

Note: These organisations maintain an archive of databases and reports they have published over the years, and we have referred to the same for all data collection purposes. [1] [2]

Data Analysis

- Objective 1: Comparing India's social indicator's scores with the rest of the BRICS counterparts and summarizing lessons that India can learn from these experiences for better future prospects.
- Objective 2: To explain the low ranking of India when it comes to social development indicators despite consistent and steady economic growth.
- Objective 3: To analyze the data as per the representative indicators of each segment of social development during the period of 2008-2019.
- Tools used in the above objectives:
i) Line Chart: We have depicted India's performance on various indicators through line charts, as it has allowed us to get a consolidated pattern that would help us judge its progress at a glance.
ii) Bar Graph: In our research, we have used bar charts to compare the scores of India with the BRICS nations. It helped us effectively compare the performance of the nations.
iii) Percentage: We have used percentages to get an overview of the performance of the Indian population on various health and education parameters.
iv) Tables: We have used tables for the purpose of quantitative and qualitative analysis.

Objective 4: To see whether IHDI or HDI can be taken as a representative indicator to depict the level of social development.
- Tools used:
i) Tables: We have used tables for the purpose of quantitative and qualitative analysis.
ii) Regression Analysis: We have tried to explain IHDI or HDI (dependent variables) on the basis of other social indicators (independent variables).

Note: We have used the t-test and the f-test in regression analysis.
iii) Correlation/Scatter Plot: We have used these two to observe the relationship between the variables in regression analysis.
iv) Bar Graph: We have used bar charts in regression analysis to show the ranks between BRICS nations.

Section-1: Social Development in BRICS Nations
Inequality-Adjusted Human Development Index (IHDI): A Measure of Social Development

As previously mentioned, the Human Development Index (HDI) is a very important measure of social development. It is a representative of various fields of social development, including health, education, and income. However, IHDI can be said to be more comprehensive as it takes into account the level of inequality. [3] [4]

According to the United Nations Development Programme, the IHDI combines a country's average achievements in health, education, and income with how those achievements are distributed among the country's population by "discounting" each dimension's average value according to its level of inequality. [3] [4]

Inequality in HDI can sometimes lead to wrongful assumptions about the presence of more than the actual level of social development. It fails to consider the well-being of the overall population. So, in those cases, IHDI is taken as a remedy. [4]
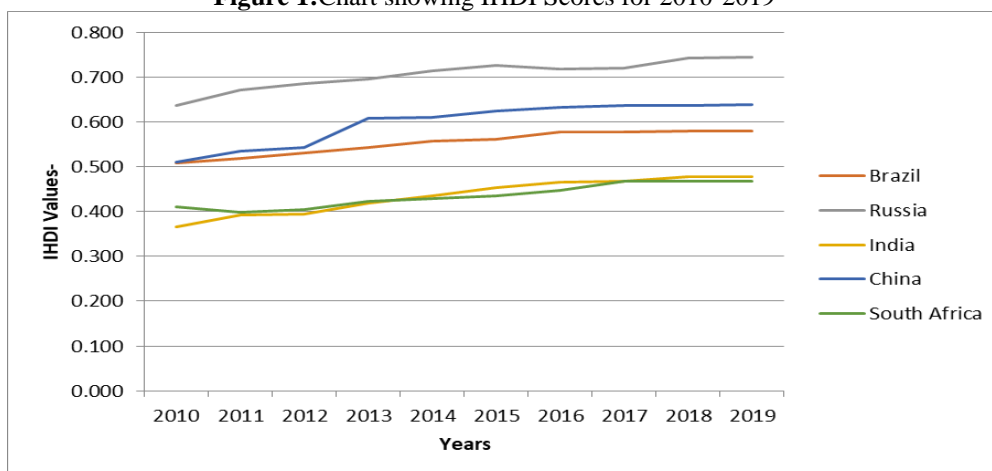
Fact: In 2019, Norway (IHDI-0.899), Iceland (IHDI-0.894), and Switzerland (IHDI-0.889) were ranked in the top 3 of the IHDI ranks. [3]

The following data on the IHDI values of BRICS nations, as published in the Human Development Report:

Table 1 :IHDI Scores for years 2010-19 *[4]*

Years	Brazil	Russia	India	China	South Africa
2010	0.509	0.636	0.365	0.511	0.411
2013	0.542	0.695	0.418	0.608	0.423
2016	0.577	0.718	0.465	0.632	0.447
2019	0.580	0.744	0.478	0.639	0.468

Figure 1: Chart showing IHDI Scores for 2010-2019 [4]

The above data shows that Russia, China, and Brazil are the countries with the highest IHDI values of 0.744, 0.639, and 0.580, respectively. It is further to be noted that India and South Africa have relatively low levels of IHDI of 0.478 and 0.468, respectively. [4]

All countries have shown an upward trend in the calculation of IHDI. It means that the majority of people enjoy better lives as compared to 10 years ago. [4]

In the past decade, it can be seen that India and China have seen a jump in IHDI of 30.95% and 25.4%, respectively. In comparison to these two countries, Russia, Brazil, and South Africa's growth of IHDI is low, at only 16.9%, 13.94%, and 13.86%, respectively. [4]

Shortcoming of IHDI:

IHDI is a great indicator of overall well-being, but it does not consider other important factors such as public safety, sanitation, pollution, freedom, etc. Hence, it cannot be taken as a measure of social development at face value. We have to include other relevant indicators as well in order to fully comprehend the extent of social development. [4]
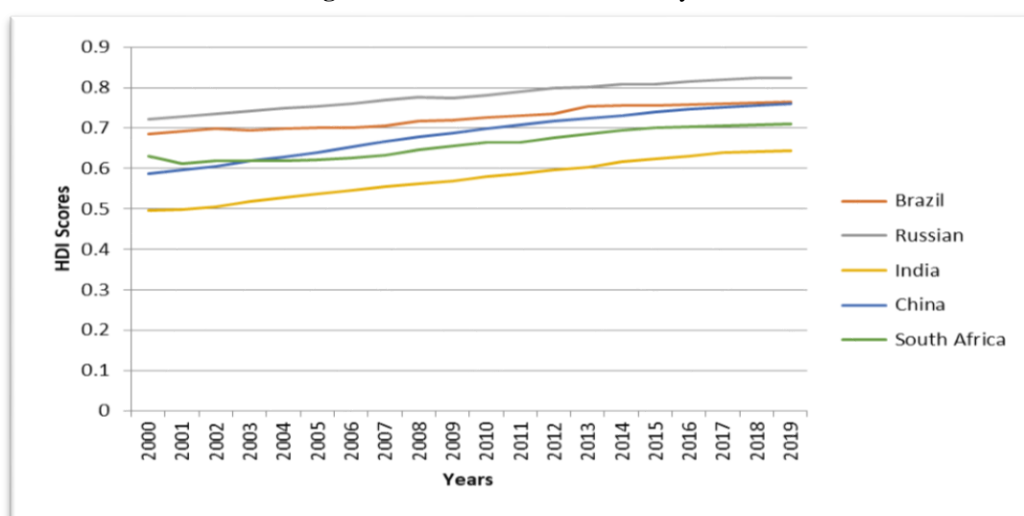
HDI: A brief review

Before looking at the social indicators, let's go over HDI as a measure of social development once again. The Human Development Index is the geometric mean of life expectancy, mean years of schooling, and per capita income. [3]

Fact: The countries with the best HDI score are Norway (HDI-0.957), Ireland (HDI-0.955), and Switzerland (HDI-0.955).

Table 2: HDI Scores for year 2000-2019[3]

Years	Brazil	Russia	India	China	South Africa
2000	0.685	0.722	0.495	0.588	0.631
2010	0.727	0.781	0.579	0.699	0.664
2015	0.756	0.809	0.624	0.739	0.701
2019	0.765	0.824	0.645	0.761	0.709

Figure 2: Chart for HDI scores for year 2000-19[3]

The above data shows that Russia, Brazil, and China are the countries with the highest HDI values of 0.824, 0.765, and 0.761, respectively. It is further to be noted that South Africa and India have relatively low levels of HDI, 0.709 and 0.645, respectively. [3]

It has been noted that HDI scores grew the fastest in India and China, with respective values of 13.35% and 10.7% in the past decade. It is followed by South Africa, Russia, and Brazil, with respective values of 8.24%, 6.59%, and 6.39%.[3]

In the following section, we will mention some of the important indicators of social development. [3]

Note: The following indicators are only representative of a field of study and thus do not cover all the aspects of that field of study. Example: Life expectancy, as a representative of the health sector, does not cover the number of hospitals available to people in a particular location or the availability of medicine in the country.

Other Social Indicators

As stated previously, social development is inclusive of broad fields such as education, health, safety, income, poverty, happiness, etc.

As stated by James Midgelly, social development also offers a broad macro-perspective on social welfare and applies a variety of strategies that seek to enhance the levels of living of the whole population. As such, social development offers a comprehensive and dynamic approach to promoting social well-being today, with social indicators as the tools of study. Let's see some of these indicators that are broadly used to classify the social welfare according to segments of social development: [3]

Education-Mean Years of Schooling (MYS): Mean Years of Schooling is the average number of years of education attended by people of age 25 and above to calculate the level of human stock in a country. It is calculated based on the highest level of education attained by an individual. [3] [9]
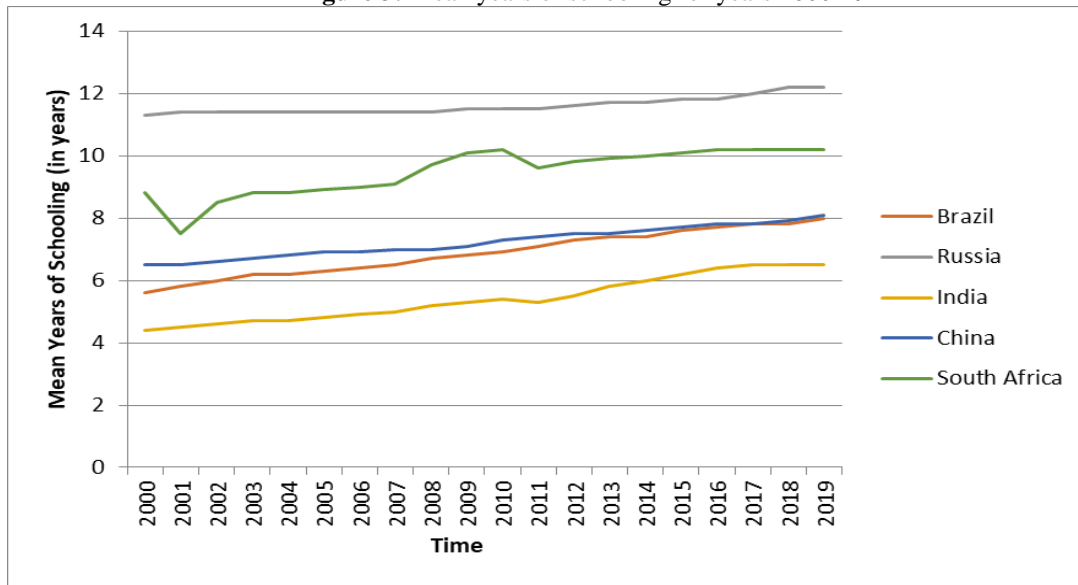
It is different from expected years of schooling, which represent the mean years of schooling to be anticipated in the near future. Here, we take MYS as a representative of education in the study of social development. [9]

The following data shows the data regarding BRICS nations' mean years of schooling (in years):

Table 3: Mean years of schooling for years 2000-19[9]

Years	Brazil	Russia	India	China	South Africa
2000	5.6	11.3	4.4	6.5	8.8
2010	6.9	11.5	5.4	7.3	10.2
2015	7.6	11.8	6.2	7.7	10.1
2019	8	12.2	6.5	8.1	10.2

Figure 3: Mean years of schooling for years 2000-19 [9]

Here it is clearly visible that Russia has the highest number of mean years of schooling at 12.2 years, followed by South Africa, China, Brazil and lastly India.

It has to be noted that despite having the highest level of schooling in Russia, the growth is almost negligible (7% in 20 years). However, the objective growth can be said to be the best in Brazil (42.8%) or India (47.7 %). Similarly, South Africa and China showed 13.72% and 24.6% growth respectively in last twenty years. [3]

It has to be noted that despite such high growth rate in India, the country remains at lowest level in education taken this parameter at a representative.

Freedom-Human Freedom Index (HFI): Freedom is an important measure of social development. Despite a good and prosperous environment, humans can't function in their most efficient way without freedom. The Human Freedom Index is an index that measures the level of freedom in various fields, including personal, civil, and economic. [11] It is classified on the basis of a lack of coercive constraints or limitations. HFI is a measure of freedom between human, social, and economic relations. HFI ranges from 0 to 10, with 10 being the highest level of freedom. Currently, HFI uses 82 indicators in the following areas: [11]
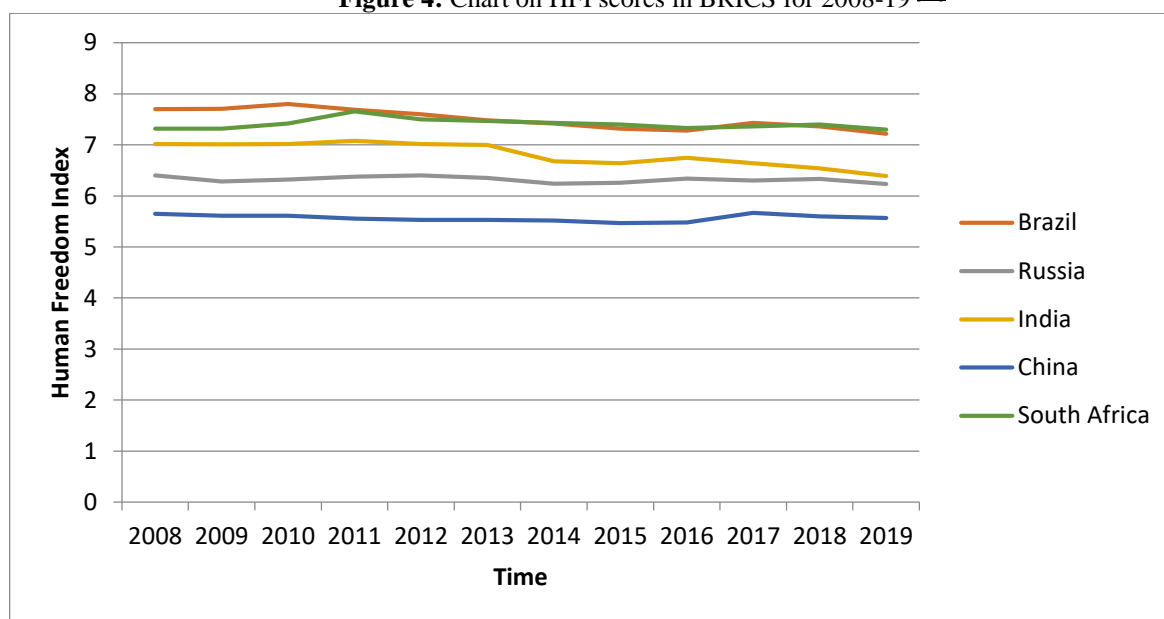
o   Security and Safety
o   Rule of Law
o   Movement, Religion
o   Association, Assembly
o   Civil Society, Expression
o   Relationships, Size of Government
o   Legal System and Property Rights
o   Access to Sound Money
o   Freedom to Trade Internationally and Regulation of Credit
o   Labour
o   Business

Following data shows the data regarding BRICS nation's HFI-

Table 4: HFI scores in BRICS nations for 2008-2019 [11]

Years	Brazil	Russia	India	China	South Africa
2008	7.7	6.4	7.02	5.65	7.32
2012	7.6	6.4	7.02	5.53	7.5
2016	7.28	6.34	6.75	5.48	7.33
2019	7.22	6.23	6.39	5.57	7.3

Figure 4: Chart on HFI scores in BRICS for 2008-19 [11]

By referring to the above data, it can be seen that the HFI is almost constant in all five countries. It has to be noted that freedom is a broad parameter; hence, the impact has to be noted over a long-term period. [11]

It can be said that people in Brazil and South Africa enjoy a high level of freedom, as stated by the Human Freedom Index. India provides a moderate amount of freedom as compared to the low-level freedom in China and Russia.
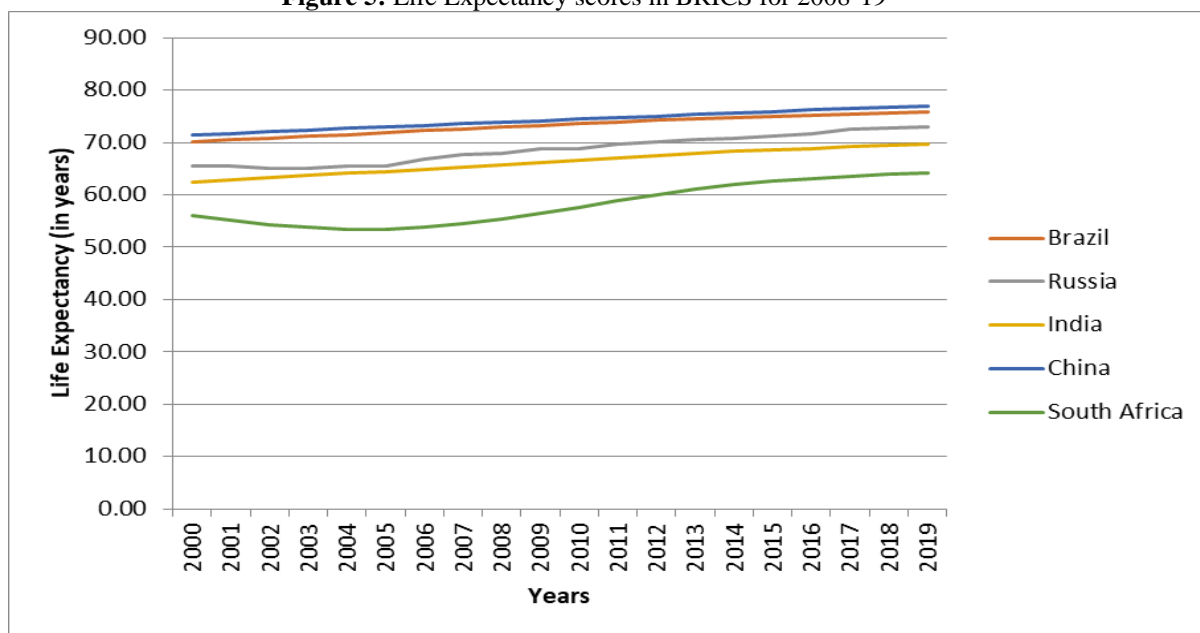
Though a common trend of decline in overall freedom over the past ten years has been seen in these countries, India has seen a decline in HFI by 8.9% in 2019 (keeping 2008 as the base). Similarly, Brazil has observed a 6.2% decline in HFI. China. South Africa and Russia have seen almost negligible falls in HFI, i.e., 1.41%, 0.28%, and 2.65%. [11]

Health-Life Expectancy: The probable number of years remaining in the life of an individual or class of persons determined statistically is affected by such factors as heredity, physical condition, nutrition, and occupation. It tells us the expected level of remaining life for a person living in a country. [9] [3]

Table 5: Life expectancy scores in BRICS for 2008-2019[3] [9]

Years	Brazil	Russia	India	China	South Africa
2008	72.97	67.95	65.79	73.83	55.36
2012	74.21	70.07	67.55	75.01	60.06
2016	75.23	71.65	68.9	76.21	63.15
2019	75.88	73.08	69.66	76.91	64.13

Figure 5: Life Expectancy scores in BRICS for 2008-19 [9] [3]

Globally, average life expectancy from birth has risen from 67.6 years in 2000 to 72.7 years in 2019.

It has to be noted that China, Brazil, and Russia have the highest life expectancy at 76.9, 75.8, and 73.08 years, respectively, in the year 2019. It is followed by India and South Africa at 69.66 and 64.13. Lower life expectancy in South Africa and India can be atrributed to poor standards of living, poor sanitation, and low health facilities.

In terms of growth in life expectancy, South Africa and Russia can be said to be the highest at 13.5% and 6.4%, respectively. India has shown moderate growth in the past ten years, at 5%. China and Brazil show growth of 3.7% and 3.5%, respectively. [9]
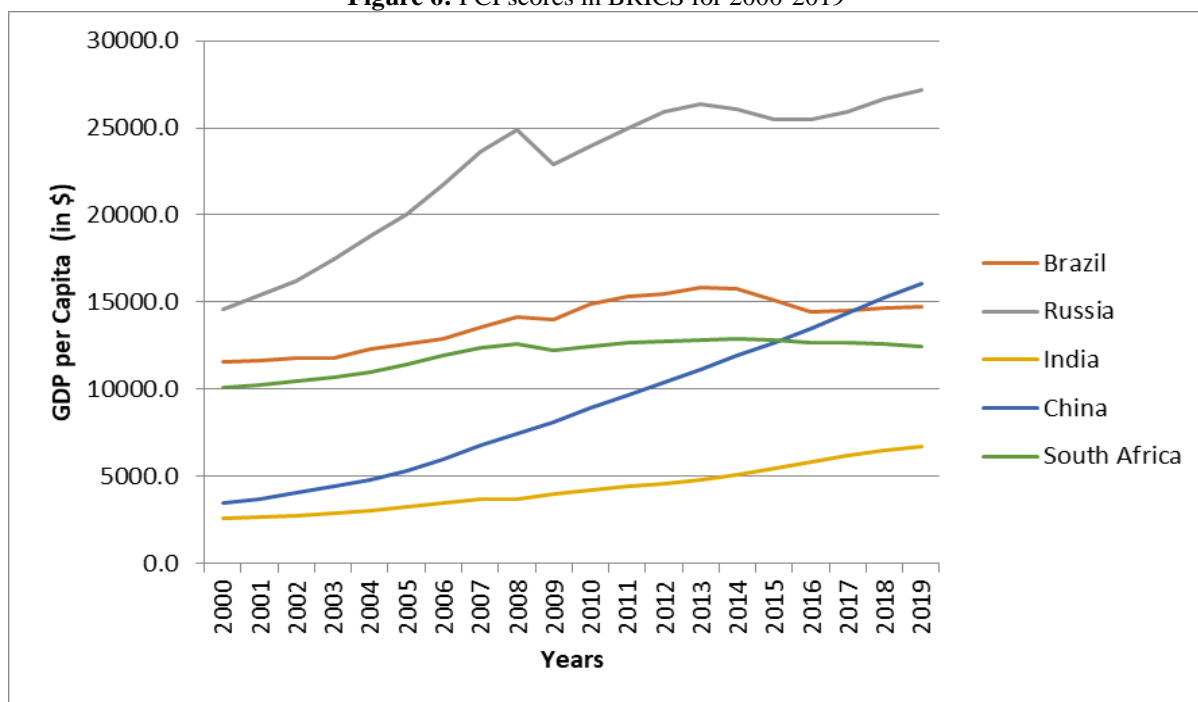
Of the BRICS countries, life expectancy in Brazil and China has been above the global average during this time, while India's and South Africa's have consistently been below, and Russia's was below until 2017. Life expectancy from birth has risen in all five BRICS countries over the past two decades. [9]

1.   *Income-Per Capita Income (PCI):* Per capita income is national income divided by population size. Per capita income is often used to measure a sector's average income and compare the wealth of different populations. Per capita income is also often used to measure a country's standard of living. This helps to ascertain a country's development status. It is one of the three measures for calculating the Human Development Index of a country. Per capita income is also called average income. [3]

Table 6: PCI scores in BRICS for 2000-2019 [9]

Years	Brazil	Russia		India	China	South Africa
2001	11602.5	15378.1		2656.7	3712.3	10224.0
2010	14873.2	23961.2		4235.0	8884.6	12452.3
2015	15064.2	25488.1		5464.4	12691.8	12840.0
2019	14763.9	27210.5		6713.9	16092.3	12481.8

Figure 6: PCI scores in BRICS for 2000-2019 [9]

The per capita GNI in the data shows that Russia and China boast the highest levels of PCI at $27210 and $16092, respectively, in 2019. Brazil and South Africa follow them with PCI at $14763 and $12481. It can be seen that India ranks the lowest with $6713 as PCI. It is even less than half of all the indicators. [3]

An important observation to be noted is that China has almost doubled its PCI in the course of 10 years, at a growth rate of 99%. It is followed by India with a growth rate of 69%. The growth of Russia and Brazil is seen at 18.6% and 5.7%, respectively. The growth of South Africa's PCI is almost negligible, at 1.7%. [3]

It has to be noted that despite the high growth of PCI in India, it remains a lower-middle-income economy. Whereas, even with almost no growth in PCI in South Africa, it has almost doubled the PCI as compared to India.
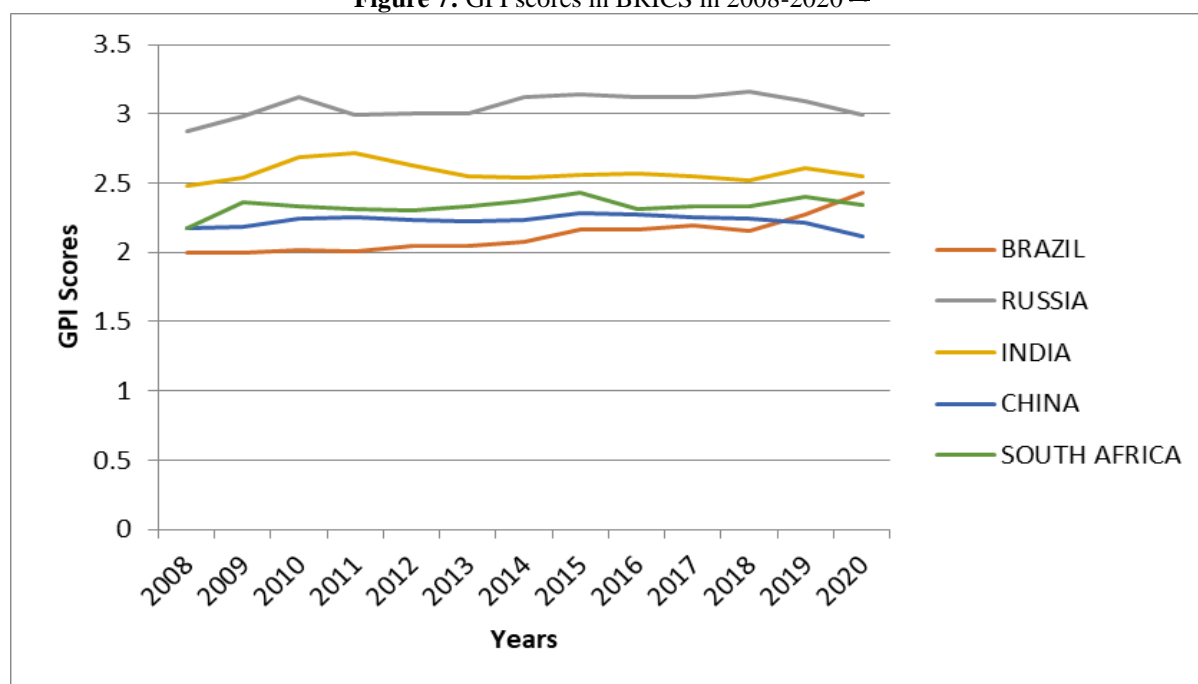
2. *Safety/Peace-Global Peace Index (GPI):* One of the crucial determinants of social development is the level and sense of social security among the citizens of a country. The more suspicious the natives feel about the security of their lives and wealth, the less happy the citizens are. [6] [10]

The GPI (Global Peace Index), prepared by the Institute of Economics and Peace, is one of the comprehensive indicators that incorporates the level of crime rates, the incidence of terrorist attacks, the level of violent protests, and relations with neighbouring countries in order to incorporate a level of harmony among the citizens of the country. Thus, it comprehensively measures the absence of violence or fear of violence. [6]

The scores are calculated on a scale of 1–5, with 5 representing a high degree of violence in the country. It was first launched in 2009 and publishes reports annually. As per the 2021 GPI reports, Iceland, New Zealand, and Denmark are some of the most peaceful countries, whereas Afghanistan and Iraq are some of the least peaceful countries. [6] [10]

Table 7: GPI scores in BRICS for 2008-2019 [6]

Year	Brazil	Russia	India	China	South Africa
2008	1.993	2.876	2.477	2.175	2.174
2014	2.078	3.125	2.54	2.235	2.372
2016	2.169	3.118	2.565	2.276	2.309
2019	2.43	2.993	2.553	2.114	2.344

Figure 7: GPI scores in BRICS in 2008-2020 [6]

This data shows that the safest and most peaceful country in the BRICs is China, followed by South Africa, Brazil, India, and lastly, Russia. It is to be noted that Brazil has worsened in the last 10 years in terms of its GPI score, whereas all other countries have shown a mixed result. [6]

Here it can be seen that over the period 2008–19, only China has seen an overall improvement with a GPI decline of 2.8%. Brazil has worsened in terms of GPI by 21.8%. South Africa, Russia, and India have also shown a decline in peace and safety, as shown by the increase in GPI scores at 7%, 4.1%, and 3.04%, respectively. [6]
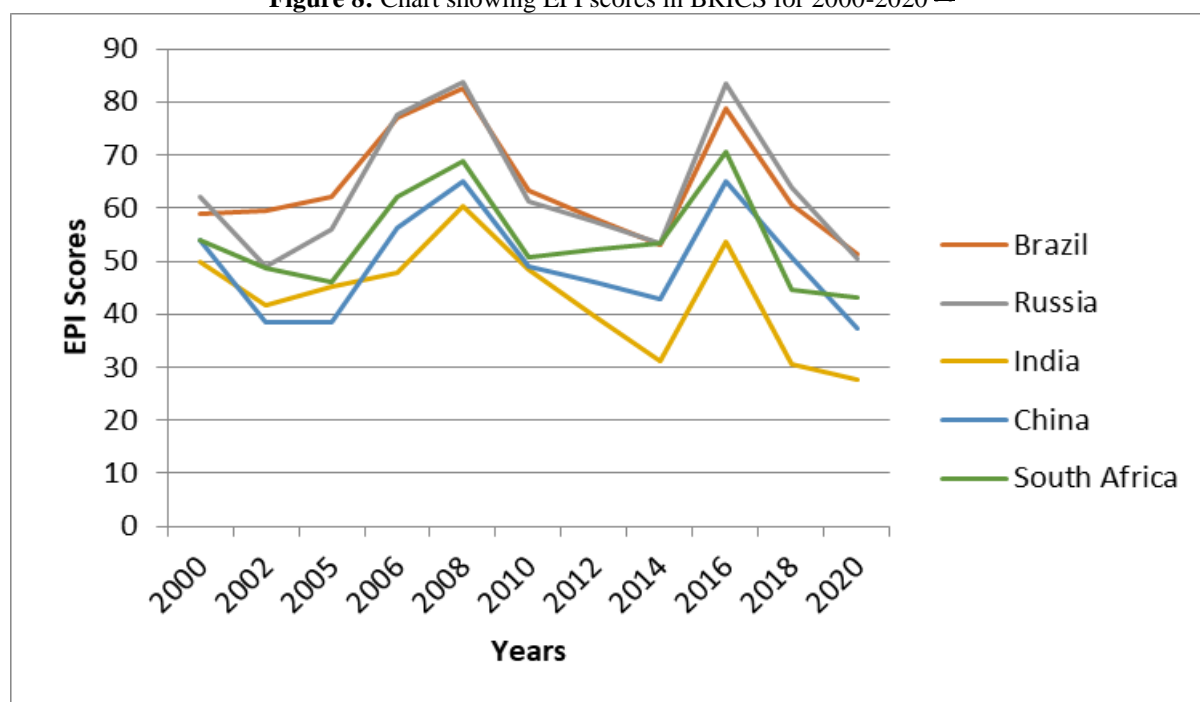
It can be seen that global peace and safety have shown a negative trend over the past decade. [6]

3.   *Pollution-Environment Performance Index (EPI):* One of the major issues that haunts not only the developed countries but also the developed countries of the world are the concern for the sustainability of a healthy environment. The social development of the citizens of the present day also depends on what nature has in store for the upcoming future. Climate change, depletion of resources, and pollution of the biosphere have raised concerns about whether or not development is sustainable. Based on this idea, we have been incentivized to introduce the key indicator of the Environment Performance Index (EPI).[5]

The EPI is a biannual composite index that covers 180 countries. It is based on 32 specific parameters ranging from greenhouse gas emissions, water and air quality, habitat and biodiversity conservation, sanitation, waste management, etc. These are then grouped into 11 broad objectives based on their relative importance on the basis of environmental health and ecosystems. It was developed by Yale University and Colombia University in collaboration with the World Economic Forum. Some of the top-ranked countries are Denmark, Luxembourg, the United Kingdom, and France. [2] [5]

Table 8: EPI scores in BRICS for 2000-2020 [5]

Years	Brazil	Russia	India	China	South Africa
2000	59	62	50	54	54
2008	82.7	83.9	60.3	65.1	69
2016	78.9	83.52	53.58	65.1	70.52
2020	51.2	50.5	27.6	37.3	43.1

Figure 8: Chart showing EPI scores in BRICS for 2000-2020 [5]

In terms of EPI scores, it can be seen that Brazil and Russia are the most environmentally healthy countries, with EPI scores of 51.2 and 50.5. It is followed by South Africa at an EPI score of 43.1. Lastly, the least environmentally friendly countries are China and India, with EPI scores of 37.3 and 27.6. [5]

It can be shown that there has been a steady decline in the EPI score among the members of BRIC countries in recent years (timeline 2008–20). India is the country with the most declines, at 54.22%, followed by China at 42.7%. Russia, Brazil, and South Africa have seen a decline of 39%, 38%, and 37%, respectively, in the last decade. [5]

It shows that in a growing economy, the rate at which the economy grows is at the cost of the environment and its sustainability. [5]

Note: EPI is a biannual index. Hence, for ease of analysis, we approximate the EPI for odd years from the previous-year data points. The EPI report for 2012 is not available; hence, the data given is an approximate of the previous and successive year scores. [5]

VIII.   RESULTS AND SUGGESTIONS

Results

The results based on the first three objectives are summarised in this section:

1. India's level of social development:
➔ It has to be noted that India, among all the BRICS nations, has performed poorly on the majority of the key indicators of social development.
➔ India has a very low mean number of years of schooling as compared to its BRICS counterparts and performs moderately on the GPI and EPI fronts.
➔ India also has the lowest PCI among all the nations. This can also be attributed to the fact that India has a huge population (in absolute terms).

2. India's growth in past decade:
➔ Out of all the countries, India has shown the most remarkable improvement in most indicators, HDI ranking, and scores, followed by China and Brazil.
➔ India has also shown great improvement in IHDI scores, signifying increased social development with reduced disparity.
➔ India, though lagging behind in PCI in absolute terms, has also shown a quite remarkable improvement (70%) in its PCI levels.
➔ India has worsened its ecosystem to the worst. This can be contributed to the fact that India is still a developing economy and has to exploit resources frequently and can't cut down enough or carbon emissions.

3. <u>Level of social development in other BRICS nations</u>
➔ China, which has the highest population but shows considerable per capita income, Other indicators also show great aspects of social development.
➔ Among all the BRICS nations, Russia has the highest MYS (mean years of schooling), PCI, and GPI. It also has very good other indicators.
➔ Similarly, Brazil shows the highest LEB and EPI. Indicators show a considerable level of social welfare in Brazil.
➔ South Africa shows high HFI and MYS. Other indicators can be said to be a bit lacking.

4. <u>Growth in other BRICS nations in past decade</u>
➔ South Africa has shown a significant improvement in terms of (%) improvement in their life expectancy. This can be because of increased focus and expenditure on healthcare infrastructure and sanitation.
➔ In terms of per capita income (PCI), China has shown extraordinary growth. PCI in China has almost doubled in a decade. This can be attributed to the fact that in the last decade, China has increased its focus on manufacturing, which serves as a huge export incentive.
➔ Brazil shows considerable growth in terms of GPI. This shows increased safety, reduced crimes, and overall increased peace.

5. <u>Other facts:</u>
➔ All the BRICS nations have performed very poorly on the environmental front. The vitality and replenishment of the environment and biosphere have worsened in all these countries in the last decade. This shows non-sustainable development plans.
➔ The human freedom index, too, has worsened in all the BRICS nations in the last decade or so.

Suggestions

The very critical requirement for the sustained and steady social development of nations is the joint contribution of the administrative machinery and the citizens of the country. It has been observed that there is a lack of coordination of efforts between the two, and plans for sustained development fail.

For reference, in India, the project Namami Gange, which aimed to clean the holy river Ganga, has failed to achieve its objectives despite the pumping of funds by the state machinery due to a lack of efforts to keep the river clean on the part of the citizens of the country.

Thus, we suggest a two-fold coordinated contribution both by the government and citizens:

To the Administrative Machinery (Government):
➔ **Peace/ Safety**: Increased focus on female security, law-enforcing agencies should be revitalized, and the judiciary mechanism has to be made efficient enough for quick judgments. All these steps would ensure a steady growth in the belief in the judicial system among the citizens of the country. It will also help to improve peace conditions and harmony in the country.
➔ **Environment sustainability**- In the wake of economic development, the environment has taken a back seat. Growing economies around the world are continuously exploiting resources without long-term, sustained plans. Pollution levels have risen, the danger of climate change is encompassing all nations, and carbon emissions are at an all-time high. Countries should strive for "ENVIROMENT KE SAATH SABKA VIKAS," or "GROW IN HARMONY WITH NATURE."

➔ **Health/ Sanitation**- Sanitation and waste management have to be given due importance to ensure a clean, safe, and hygienic environment and living conditions.
➔ **Health infrastructure** has to be given due consideration. Developing countries like India have very few doctors and healthcare centres per thousand of the population. An increased expenditure on health would lead to better life expectancy and mental health for workers. The SAARS COVID-19 has fostered among the nations the need for higher expenditure on good health infrastructure that is easily accessible to the general public.
➔ **Education**: Quality education in government schools has to be ensured in all districts and states. In developing countries, people in village areas fail to admit their students to good private education institutes. However, government school amenities are not on par with those of private institutions. Female children should be promoted for higher education as well. "PADHEGA INDIA TABHI TOH BADHEGA INDIA," i.e., "IF INDIA IS EDUCATED, THEN INDIA WILL GROW." This can be generalised to other nations as well.
➔ **Efficient Expenditure**: Tax revenue collected from citizens has to be properly utilized, ensuring that there is no lopsided development in the economy and rural areas do not fall behind.

➔ **Corruption Control**: Practices should be developed at all levels to ensure the absence of corruption and red tape in bureaucratic work.

➔ **Inequality:** Greater efforts should be placed on eliminating inequalities on the basis of gender, caste, and creed.

To the general public

➔ Spread awareness amongst oneself to follow practises and activities within the framework of policy guidelines.

➔ People must be aware that their development responsibility is not only the responsibility of the government but also their own.

➔ Assisting the government in its endeavours to create equality.

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