

Comparative Sustainable Development - Assessment of India, Thailand and Asian G20 Countries

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ABSTRACT

The world leaders are aiming to estimate a countries growth and development with a broader perspective of considering more factors apart from the Gross Domestic Product (GDP) responsible for a countries wealth and wellbeing. In order to understand and estimate true development of a nation the Boston Consultants Group (BCG) has developed a Sustainable Economic Development Assessment (SEDA) framework. This paper aims to compare between India, Thailand and rest of the five G20 nations (China, Indonesia, Japan, Saudi Arabia and South Korea) with respect to the well being indexes representing the ten major dimension of measurement (Income, Economic Stability, Employment, Health, Education, Infrastructure, Income Inequality, Governance, Civil Society and Environment) popularly summed together to portray the SEDA. These ten dimensions come under three major heads namely Economics, Investment and Sustainability. The deviations of nations from the world median has been calculated and compared. Two Way Analysis of Variance (ANOVA) is calculated to find out significance in differences of variances amid discrete dimension scores amongst the seven Asian countries taken altogether.

INTRODUCTION

The history of all Asian Countries is a amalgam of all coastal regions such as east coast, west coast, south east and the middle east. The coastal fringe has been the home to one of the most oldest civilization of the world and many such as the Indus Valley civilization, Mesopotamia etc. The Economy of Asia comprises of almost sixty percent of the worlds total population that is approximately 4.4 Billion people. Asia is the largest continental economy with highest Gross Domestic Product in terms of both purchasing power parity and nominal parameter. Asia being the rapidest emergent economic region of the world a special mention can be made regarding China and India which are the first an third largest economies of Asia respectively. Asia is the perfect example of the lengthiest world economic boom with enumerating examples of miracle growths in Japan China, Philippines etc. Special reference can be made of the Hans River miracle in 1961, The Japanese economic miracle which began from 1960 and continued until 1990 and the Chinese Economic transformation which started from 1963 onwards. Asian wealth is mainly concentrated in the east and the middleeast part comprising mostly of countries like China, Singapore, India and of course the middle east oil rich nations.

In our study here we have briefly taken the Asian G20 countries which are one of the most developing countries in the world and Thailand as well because Thailand since a long time has shown a great improvement in growth and development. Among the Asian G20 countries, Japan with substantial industries and electrical intricacy .Indonesia with manufacturing and and South Korea with heavy industries and information and communication know-hows deserve a special mention. China whose growth is primarily led by manufacturing and Foreign Direct Investment and India, known for computer software and outsourcing destinations again deserve special mention as the fastest growing nations of the world and definitely current attractions in terms of being a part of super powers of the world economy. When the east mainly depends on

manufacturing and FDI, the middle east specially Saudi Arabia, one of the G20 countries rely mainly on production of commodities specially crude oil. Over the years, alongside prompt economic progression and development and massive superfluous of trade with the rest of the world, Asia has gathered more than four trillion US Dollars US\$4 trillion of reserves (For-ex) which constitutes to more than half of the world's total.

The top powers have identified growth to be not the whole and sole parameter of excellence to establish an economy's prosperity but the way the nation converts its wealth into wellbeing. For such purpose it is of utmost importance to identify development fundamentals in an economy, which will help set goals to achieve for an economy to establish well, being. The BCG has already done the same and have identified three important fundamentals namely Economic, Investment and Sustainable under which has further distributed ten dimensions or factors which portray a countries well being. The factors which enables the world to judge the good health of a nation are Income, Economic Stability, Employment, Health, Education, Infrastructure, Income Inequality, Governance, Civil Society and Environment and all popularly measured under a very popular head, Sustainable Economic Development Assessment (SEDA). Asia is doing its part and proving itself to be one of the superpowers in the world.



Source- Mukherjee & Ahuja 2017, Asian Journal of Research in Social Science and Humanities.

The figure demonstrates the ten dimensions of sustainable economic development calculated to understand the transformation of each country from wealth to well being. The first dimension income includes wealth that is GDP per capita and Economic stability includes inflation and volatility of GDP growth. Employment includes employment and unemployment levels whereas income inequality includes income disparities across the population. The civil society parameters includes the intra and inter bond in the society, civil activism and equality in gender whereas governance includes the quality of government with efficacy and accountability incorporating civic and economic freedom. Educational quality and access constitutes to an important dimension and health includes its each and access and mortality rates of the people. The quality of environment policies and improvement along with water and transportation is also given equal weightage.

For a one to one comparison we have taken dimension value of India and Thailand and calculated their individual deviations from the world median values.

REVIEW OF LITERATURE

Bhattari (2017) has done a detailed analysis on Economic Growth and development in India and other SAARC countries. The momentum of growth has been identified and analyzed by following and studying the trends of the economies fiscal and monetary scenario, trade, income distribution and education respectively. The study puts forward the development and growth criteria's in economies to be systematic and scientific analysis of potential and correct linkage between all the sectors moreover including regions and nations as well. Further he concluded by saying that being steady, stable and their readiness to march single minded in the path of growth will bring about good level of growth and development in SAARC nations and India as well.

Mukherjee and Ahuja (2017) in their research paper aim to depict the recent initiation to evaluate the efficiency of a nation in converting GDP growth to well being in terms of Sustainable Economic Development Assessment scores (SEDA). A good SEDA progress score backs up India's position in the world as one of the leading Economy and our country has shown a significant improvement in various parameters measured by the BCG to establish sustainable development. The paper also aims to compare the BRICS nations in terms of their sustainable development scores and also affirms Russia and Brazil to top the list. However India and China top in terms of progress scores giving a huge hope of amendment in converting wealth into well being so far. The authors have compiled and performed trend analysis for data of 2016 to compute their expected and actual scores and growth of scores .

Banomyong, Varadejsatitwong and Phanjan (2011) have done a detailed study on the Thai India relationship and have analyzed that even as the Thai India free trade is not working properly, the trade and investment between both the countries are incremental. Both the countries growth and development together has been backed up by the number of visitors visiting each others nations and there is a strong Asean-India connectivity. This paper has also a vivid elaboration of Strength weakness opportunity and threat analysis between both the nations and further discusses about the regimes and policies followed by both. Infrastructure being an important part of development the official priority of developing a port on the Andaman sea is of importance.

Acharya (2011) in his research paper has raised a question that is Asia doing enough in term or the global opinion and whether it can lead or not. This paper elaborates the contribution of Asian countries like China, Singapore, Japan ,India, Malaysia etc in the global spectrum in terms of governance. These nations need a greater voice for themselves and everyone as not only they have done well in terms of growth but also in terms of development. The author further talks about defensive sovereignty and the Asian leaders trying to eradicate the western dominance altogether. The author concludes by finding the major Asian powers like China, Japan and India to be seeking global leadership and fulfilling national power aspirations. The author further says that these global powers should very well contribute to global governance because their development parametres are slowly but steadily reaching the milestone.

OBJECTIVES OF THE STUDY

The primary objective of the study is to understand India and Thailand's situation in terms of SEDA as compared to the world median and also discuss their deviation from the world median. However to understand the differences in variances among seven chosen nations and their individual dimension score too.

RESEARCH METHODOLOGY

Table 1: Individual Dimension score and Deviation from World Median

Parametres	India	World Median	Deviation
Income	10.3	25.1	-14.8
Economic Stability	78.6	76.7	1.9
Employment	33.4	49.3	-15.9
Health	52.3	73.1	-20.8
Education	25.9	44.6	-18.7
Infrastructure	45.7	59.9	-14.2
Income Equality	60.5	53	7.5
Civil Society	44.8	55.9	-11.1
Governance	44.9	39	5.9
Environment	12.5	58.5	-46

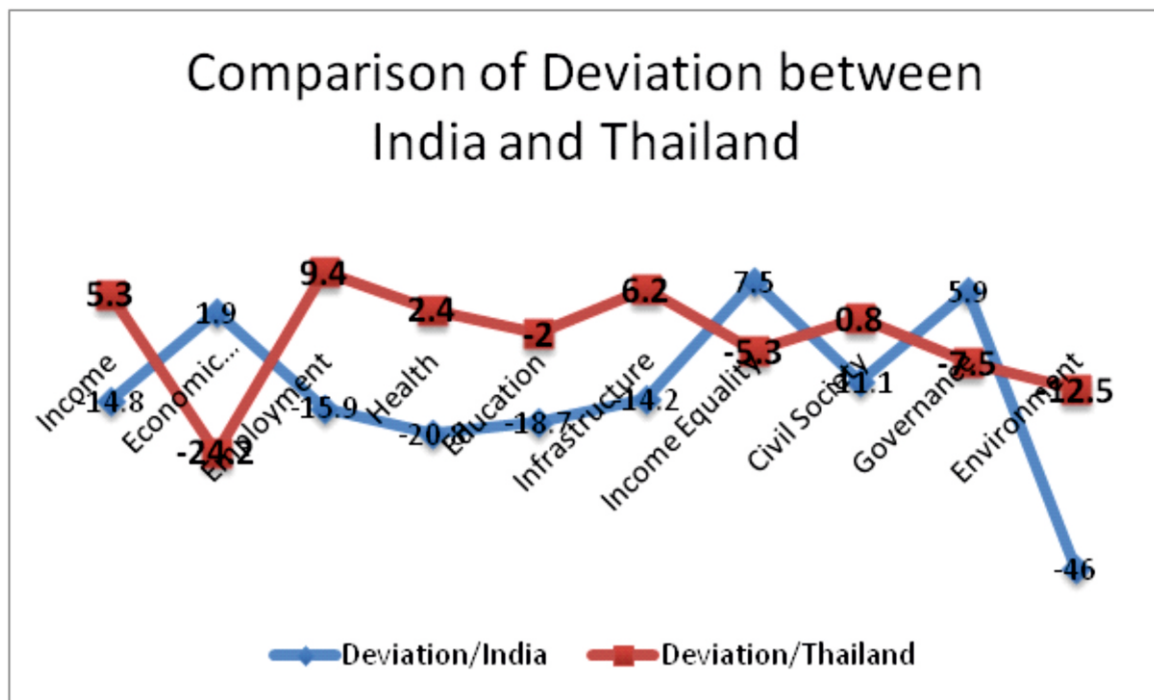
Source: Compiled from BCG Analysis of SEDA

Table 2: Individual Dimension score and Deviation from World Median

Parametres	Thailand	World Median	Deviation
Income	30.4	25.1	5.3
Economic Stability	52.5	76.7	-24.2
Employment	58.7	49.3	9.4
Health	75.5	73.1	2.4
Education	42.6	44.6	-2
Infrastructure	66.1	59.9	6.2
Income Equality	47.7	53	-5.3
Civil Society	56.7	55.9	0.8
Governance	31.5	39	-7.5
Environment	46	58.5	-12.5

Source: Compiled from BCG Analysis of SEDA

Figure 1: Comparison of Deviation between India and Thailand



Source: Compiled from BCG Analysis of SEDA

It is important and equally true that the actual dimension values of nations should not be negatively deviated from the world median values. In case of Thailand negative deviation is found in parameters like Economic Stability (shows the highest negative deviation, -24.2), education (-2), governance (-7.5) and Environment (-12.5) respectively. The rest are positive and remarkable is positive deviation of employment in the country. Even income inequality is less in Thailand as compared to the world median. India has negative deviation in the case of Income (-14.8), Employment (-15.9), Health (-20.8), Education (-18.7), Infrastructure (-14.2), Civil society (-11.1) and Environment (-46). Positive is Economic stability and the governance specially. Here is a table giving a comprehensive overview of this analysis.

Table 3: Dimensions below and above the world medians-A scope of improvement

Column1	Dimensions Below the World Median	Dimensions Above the World Median
India	Income, Employment, Health Education, Civil Society, Environment, Income Inequality	Economic Stability, Governance
Thailand	Economic Stability, Education, Governance, Environment	Income, Employment, Health, Infrastructure, Civil Society, Income Inequality

Source: Compiled from the available data in BCG analysis of SEDA

Standard Deviation of India is 18.5 which is greater than that of Thailand 14.1 from the world standard dimension values. The final SEDA score of India in 2016 has been recorded to be 32.6 and the progress score is remarkable and is one of the highest in the world 73.6. Final SEDA score of Thailand is 45.3 in 2016 and its progress score is 45.7.

HYPOTHESIS

H_{01} : There is no significant difference in variance of individual dimension (Rows) values for seven countries.

H_{02} : There is no significant difference in variance between seven countries (Columns).

G20 countries are a group of 19 countries plus the European Union and are an International forum to discuss intercontinental monetary solidity. G20 countries represent more than eighty five percent of the world's Gross Domestic Product, eighty percent of the world's trade and seventy percent of the world's population respectively. Our study involves G20 countries which belong to the Asian continent. Further we have compared between India, Thailand and the other G20 Asian countries namely China, Indonesia, Japan, South Korea and Saudi Arabia. To analyze the difference in variances of the chosen nations we have used Analysis of Variance (ANOVA) in the following data.

Table 4: Comparison Between all seven chosen countries

Parametres	India	Thailand	China	Indonesia	Japan	Saudi Arabia	South Korea
Income	10.3	30.4	25.3	19.9	72	100	67.8
Economic Stability	78.6	52.5	63.4	86.8	76.3	78	94.7
Employment	33.4	58.7	65.5	42.5	86.6	48.7	70
Health	52.3	75.5	83.8	59.6	96.1	75.7	100
Education	25.9	42.6	66.1	29.9	60.2	77.6	91.1
Infrastructure	45.7	66.1	68.4	52.4	94.7	82.1	87.3
Income Equality	60.5	47.7	41.1	56.5	64.7	62.7	55.7
Civil Society	44.8	56.7	61.5	54	79.1	47.6	73
Governance	44.9	31.5	23.1	38	84.9	32.7	68.2
Environment	12.5	46	17.6	47.7	57.1	66	34.9

Source: Compiled from BCG Analysis of SEDA

Table 5: Calculated Descriptive

<i>SUMMARY</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Income	7	325.7	46.52857143	1115.472381
Economic Stability	7	530.3	75.75714286	197.9628571
Employment	7	405.4	57.91428571	325.0914286
Health	7	543	77.57142857	309.092381
Education	7	393.4	56.2	597.4533333
Infrastructure	7	496.7	70.95714286	327.8995238
Income Equality	7	388.9	55.55714286	71.78285714
Civil Society	7	416.7	59.52857143	161.032381
Governance	7	323.3	46.18571429	497.0947619
Environment	7	281.8	40.25714286	391.2095238
India	10	408.9	40.89	445.981
Thailand	10	507.7	50.77	203.6467778
China	10	515.8	51.58	525.5528889
Indonesia	10	487.3	48.73	334.4267778
Japan	10	771.7	77.17	187.9801111
Saudi Arabia	10	671.1	67.11	392.5743333
South Korea	10	742.7	74.27	391.7601111

Source: Calculated from the above data in Table 4.

Table 6: ANOVA Table

Two Way ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Rows-Individual Dimension	10217.24514	9	1135.24946	5.058020091	5.92796E-05	2.058520148
Columns-Countries	11844.49571	6	1974.082619	8.795379252	1.08231E-06	2.271988662
Error	12120.05286	54	224.4454233			
Total	34181.79371	69				

Source: Calculated from the above data in Table 4

The first and second null hypothesis is put to test by using ANOVA and the results are as follows:

F Calculated for H_{01} is 5.05 and F critical for H_{01} is 2.05. Hence we reject the first null hypothesis that there is no significant difference in variance of individual dimension (Rows) values for seven countries and accept the alternative that there is a significant difference in variance of individual dimension (Rows) values for seven countries.

F Calculated value for H_{02} is 8.7 and F critical for H_{02} is 2.27 which indicates that we should again reject the second null hypothesis that there is no significant difference in variance between seven countries (Columns) and accept the alternative that there is significant difference in variance between seven countries (Columns).

DISCUSSION AND CONCLUSION

It so proves the known fact that every country has different levels of income, education environment etc and certainly the countries differ with respect to their development goals and achievements too. What is really important is to analyze is Gross Domestic Product alone explaining it all? I guess now all the countries are conscious about their overall development in the form of economy, investments and of course the queen of all, sustainability. When in this paper we compared between Thailand and India it was evident that individual and final SEDA scores of Thailand was higher in most cases than that of India whose GDP is \$106,439.8 billion and GDP of Thailand is \$9,233.5 billion. So GDP cannot alone testify the condition of a nation completely. Again if we see the progress scores of both the countries then India's progress score was higher than that of Thailand. Rest of the study was centric around six G20 Asian Nations and Thailand and during comparison some remarkable scores need a special attention. Income in Saudi Arabia is 100 and Economic Stability and Health in South Korea is 94.7 and 100 again. Japan among all has the highest final SEDA score- 81.3 followed by South Korea-79 and Saudi Arabia- 71 correspondingly. However our test here portrays a known fact incidentally proven statistically with the help of published values. There is definitely significant difference in variance between countries and between their respective individual dimension scores of parameters of development. There is a lot of scope of improvement especially in dimensions like income, employment education and environment needs an absolute special attention in order to sustain the sustainability.

REFERENCES

- 1) Acharya, Amitav (2011), Can Asia Lead? Power Ambitions and Global Governance in the Twenty-First Century, in: *International Affairs*, 87, 4, 851–869.
- 2) BCG (2016) An Interactive View of Sustainable Economic Development retrieved from https://www.bcgperspectives.com/content/interactive/public_sector_globalization_interactive_map_sustainable_economic_development/
- 3) BCG (2016) how quality of life varies in different countries retrieved from <http://www.economist.com/blogs/graphicdetail/2016/07/daily-chart-13>.
- 4) Bhattari (2017), Economic Growth and Development in India and SAARC countries, ASSA Annual Conference.
- 5) Bloomberg markets “Rich Countries often fails to bolster well being, Boston Consulting Says” 21st July, 2016.
- 6) Banomyong, R., P. Varadejsatitwong, and N. Phanjan (2011), 'ASEAN-India Connectivity: A Thailand Perspective' in Kimura, F. and S. Umezaki (eds.), *ASEAN-India Connectivity: The Comprehensive Asia Development Plan, Phase II*, ERIA Research Project Report 2010-7, Jakarta: ERIA, pp.205-242.
- 7) Chatterjee, Shihashis (2007), Conceptions of Space in India's Look East Policy: Order, Cooperation or Community?, in: *South Asian Survey*, 14, 1, 65–81.
- 8) Chen, Y., W.H. Huang, and P.J. Regis (2012). Do Asia and Pacific countries compete incorporate tax rates? *Journal of the Asia Pacific Economy*, vol. 19, No. 1. pp. 25-51.
- 9) Kim, S., J-W Lee. and K. Shin. 2008. “Regional and Global Financial Integration in East Asia.” In B. Eichengreen, C. Wyplosz, and Y. C. Park, eds., *[People's Republic of] China, Asia and the New World Economy*. New York: Oxford University Press.

- 10) Maira Arun (2013) www.thehindu.com-article on A vision of Sustainable Growth.
- 11) Mukherjee and Ahuja “Wealth to well being-a comparative study of brics peers with reference to seda framework” Asian Journal of Social Science and Humanities, ISSN No.2249-7315, Vol.7, No. 9, September 2017.
- 12) Pardesi, Manjeets (2015), Is India a Great Power? Understanding Great Power Status in Contemporary International Relations, in: Asian Security, 11, 1, 1–30.
- 13) Reva, Anna (2015). Toward a More Business Friendly Tax Regime: Key Challenges in South Asia, World Bank Working Paper Series, No. 7153.