



Department of Science & Technology
Govt. of India

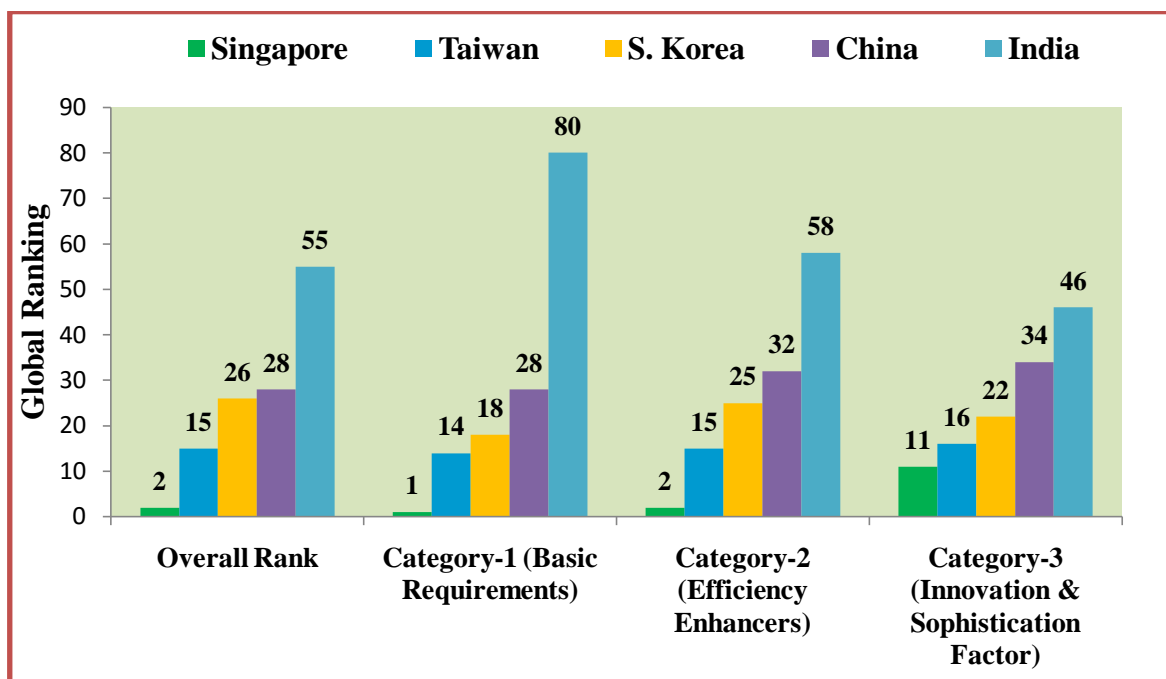


DST-Centre for Policy Research at PU, Chd.

(DST/PRC/CPR-03/2013)

REPORT-7

Comparative Study of Asian Economies: Lessons for India



Index

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1. Introduction

In the 21st century, Asia is perceived to be the most dynamic part of the global economy. In this report, a comparative study has been carried out on five Asian countries (Singapore, Taiwan, South Korea, China and India) based on The Global Competitiveness Index (GCI) Report 2015-16, published by The World Economic Forum (WEF). These nations were struggling economies at the time of their Independence which was around in the middle of 20th century. However, since then Singapore has made stupendous progress and is amongst the top five successful economies of the world. Taiwan, S. Korea and China have also made significant strides and are globally ranked 15, 26 and 28 respectively. India opened its market to the world in the last decade of 20th century. Singapore, Taiwan and S. Korea are considered as ‘Innovation driven economies’, China as ‘Efficiency driven economy’ and India as ‘Factor driven economy’. India has all the basic ingredients to be counted among major global economic players. However, for migration to ‘Efficiency/Innovation driven economy’ India needs to seriously address many pillars/indicators belonging to the categories of “Basic Requirements” and “Efficiency Enhancers”.

These Asian countries are progressing at a fast pace and becoming significant part of the global economy. Countries like, Singapore, Taiwan and S. Korea, despite being small in size and population have made remarkable progress in various economic parameters and have leap-frogged into the category of ‘Innovation driven economy’, which was earlier dominated by western countries such as USA, UK, Germany, Canada and France. Singapore has been recognised as world’s leading international financial centre, Taiwan has become largest importer and exporter of merchandise and S. Korea has earned the reputation of leading manufacturers of information technology equipments. It is perceived by think tanks of the world that in the near future, two other Asian countries, India and China, will be the leading economies of the world as they have all the ingredients needed for becoming economically stable nations, e.g. plenty of natural resources, huge land and coastal areas, abundant scientists and universities, many

advanced research laboratories/institutions and young workforce. China has reformed its economic policies and is quite serious in its implementation as well. India's economic policies and mode of governance have also been reformulated, but implementation of the policies needs a fresh impetus.

The comparison carried out in this report is based on various domains such as health, education, science and technology (S&T), infrastructure, marketing capability/capacity, legal framework etc. The report also lists out parameters in which India has to work very hard, if it desires to be counted as a developed nation. Table 1 lists general information about Singapore, Taiwan, S. Korea, China and India. Except Singapore, other three countries became independent nations around the middle of the 20th century (there is no official independence day of Taiwan). Singapore tasted independence a bit later, in 1965. India and China possess large land mass and are densely populated as compared to Singapore, Taiwan and S. Korea. All the five nations have different modes of governance and type of economies.

Table 1: General information about select Asian countries

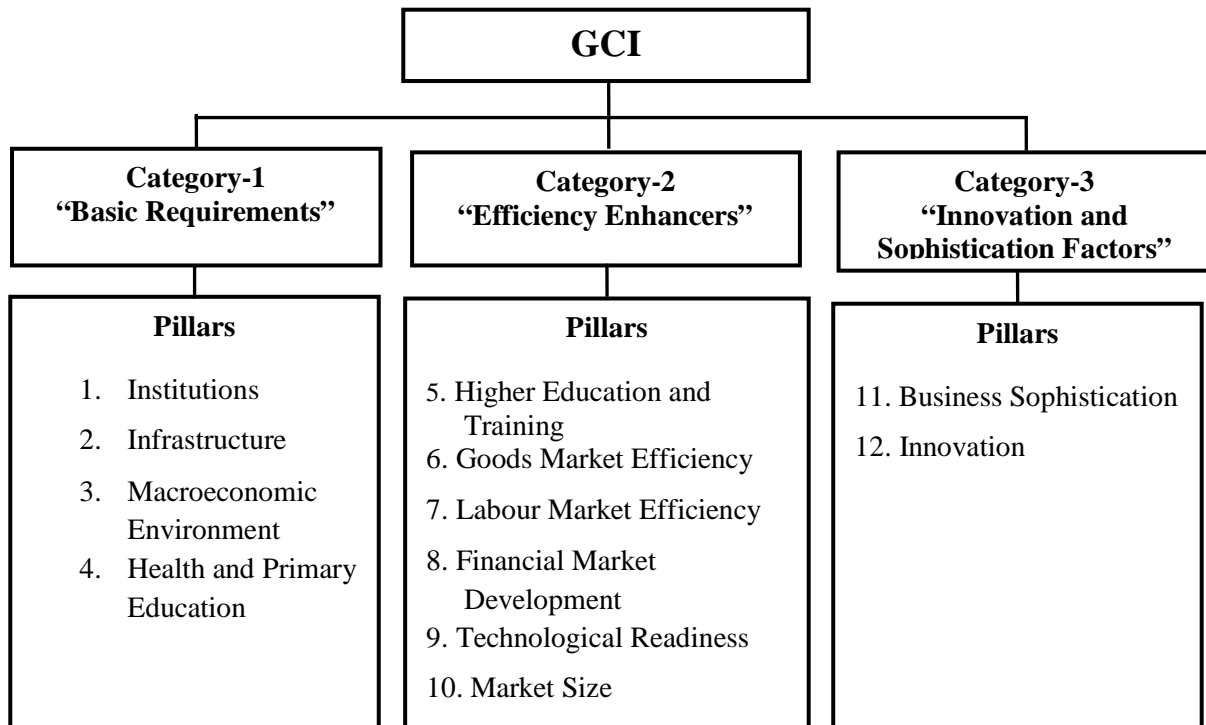
Attributes	Singapore	Taiwan	S. Korea	China	India
Independence	August 9, 1965	No official day	August 15, 1948	October 1, 1949	August 15, 1947
Population ^a (billions)	0.057	0.02343 ^b	0.504	1.364	1.295
Land Area ^a (square kilometers)	707	36,193 ^c	97,466	9,388,211	2,973,190
Mode of Government	Parliamentary Republic	Multi-Party Democracy ^c (Semi-Presidential)	Presidential	Autocratic Socialist	Federal Republic
Mode of Economy	Free Market	Capitalist Economy	Market Economy	Socialist Market	Mixed Economy

Source: a-World Bank-2014 (www.worldbank.org),

b-Trading Economy (<http://www.tradingeconomics.com/taiwan/indicators>), c- <http://www.taiwan.gov.tw>

2. Structure of GCI and comparison of five Asian economies

GCI compares the economic competitiveness of nations (140 nations in 2015-16 edition) based on the statistical data collected from internationally recognized agencies, like International Monetary Fund (IMF), World Health Organization (WHO), and United States-India Educational Foundation Education (USIEF) etc. GCI data is divided into three broad categories (“Basic Requirements”, “Efficiency Enhancers” and “Innovations and Sophistication Factors”) comprising of 12 pillars (P) (Fig.1) which encompass 114 indicators (I) (mentioned in the text). The classification of world economies which is based on the stage of development is given in Table 2. The stage of development [Stage 1 (Factor driven), Stage 2 (Efficiency driven) and Stage 3 (Innovation driven)] of a country is being proxied by its GDP per capita (US\$). GCI takes stages of development into account by considering higher relative weights to those pillars that are more relevant for an economy given its particular stage of development. Any country which falls between two of the stages are considered in transition stage.



Source: The Global Competitiveness Index (GCI) Report 2015-16

Fig. 1: Classification of Global Competitiveness Index

Table 2: Classification of world economies based on the stages of development

Categories of GCI	Stages of development		
	Stage 1 (Factor driven)	Stage 2 (Efficiency driven)	Stage 3 (Innovation driven)
GDP per capita (US\$) thresholds	<2,000	3,000-8,999	>17,000
Weightage (%) for each category of GCI			
<i>i. Basic Requirements</i>	60	40	20
<i>ii. Efficiency Enhancers</i>	35	50	50
<i>iii. Innovation and Sophistication Factors</i>	5	10	30
Numbers of nations in each stage	35 Economies including India	31 Economies including China	38 Economies including Singapore, Taiwan, S. Korea

Source: The Global Competitiveness Index (GCI) Report 2015-16

As per GCI ranking of 140 nations, Singapore (2), Taiwan (15), S. Korea (26) are in ‘Innovation driven stage’, China (28) is in ‘Efficiency driven stage’ and India (55) is in ‘Factor driven stage’. India has to cover a lot of ground for marching into Efficiency/Innovation driven stage. It needs to have a serious look at its economic policies as well as their implementation approaches. Similarly, China has to do introspection and make changes in policies and governance for advancing to innovative stage. The comparative graphical depiction of all 5 countries based on three categories (“Basis Requirements”, “Efficiency Enhancers” and “Innovation & Sophistication Factor”) is given below in Fig. 2. The area in which more emphasis is needed by these countries is discussed in the following text and tables.

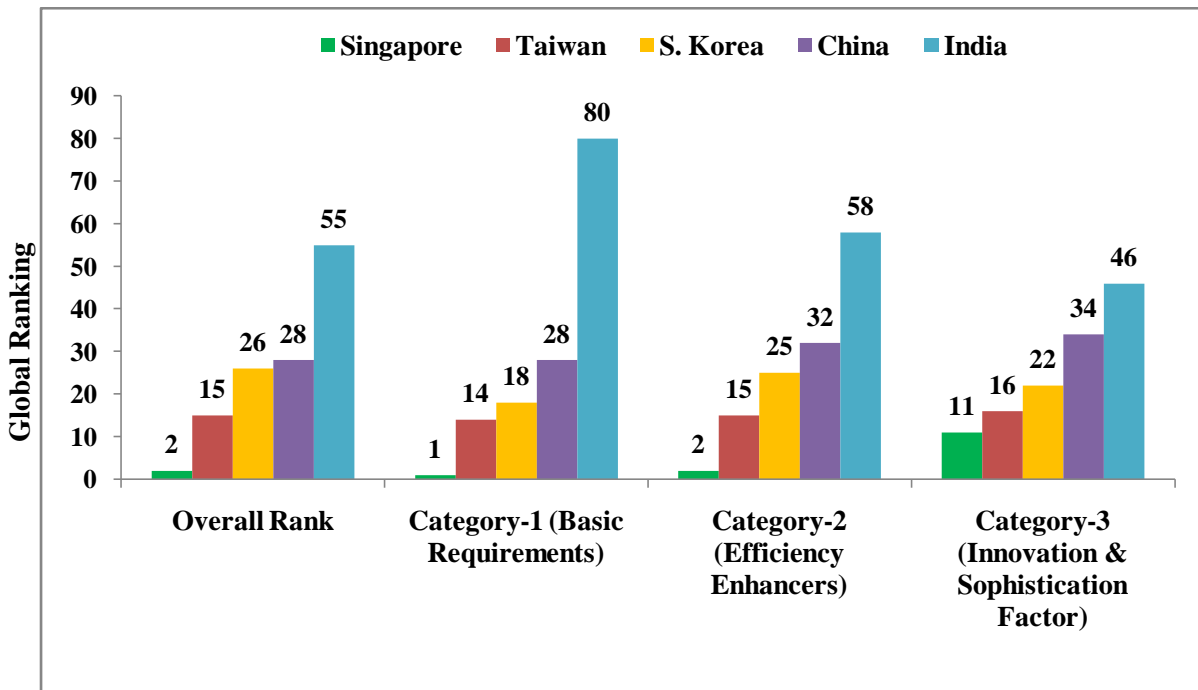


Fig. 2: Global rankings of the nations based on three categories of GCI

Category-1 (Basic Requirements)

“Basic Requirements” category provides information about the basic foundation of a nation and comprises of four pillars (P) i.e. P-1: ‘Institutions’, P-2: ‘Infrastructure’, P-3: ‘Macroeconomic Environment’ and P-4: ‘Health and Primary Education’. The graphical representation of the global ranking of the five countries based on the pillars (P1-P4) of this category is shown in Fig 3.

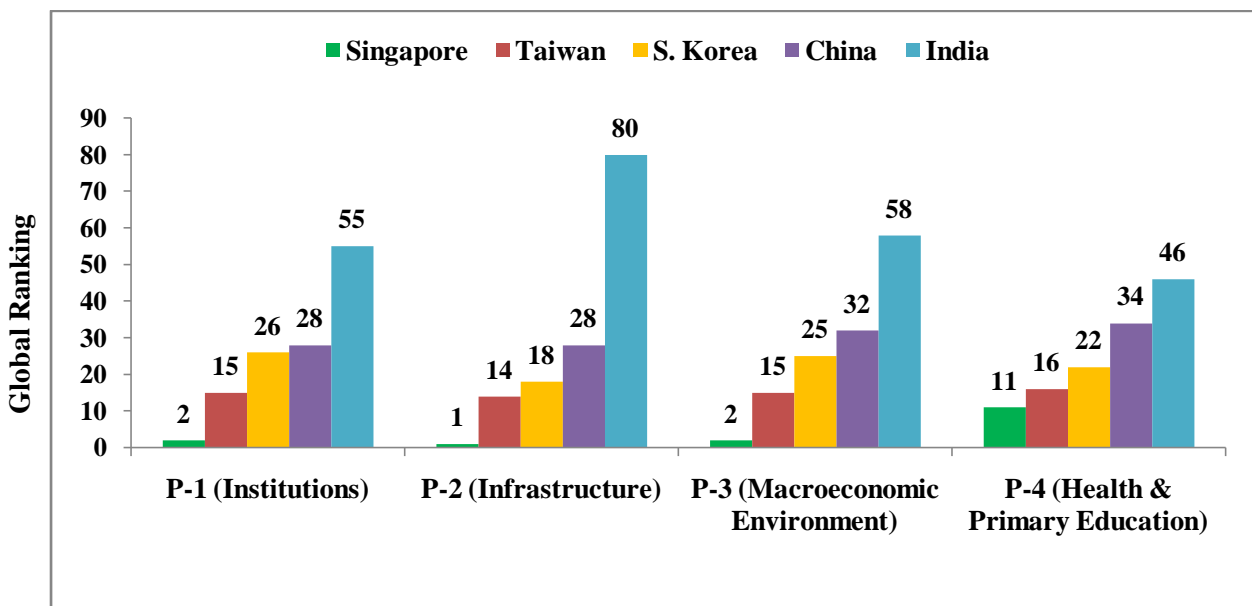


Fig. 3: Global rankings of the nations based on the pillars of the category-1 (Basic Requirements)

P-1 (Institutions): This pillar comprises of the administrative and legal structure within which individuals, firms, and governments function and interact to generate wealth. The role of institutions extends beyond the legal framework. The attitudes of the government regarding market freedom and the overall functional efficiency are also very important. The institutional quality is a strong determinant of competitiveness and growth (Acemoglu *et al.*, 2001; Sala-i-Martin & Subramanian, 2003). Firms are unwilling to invest in a country or region, if their rights are not protected (de Soto, 2000).

Table 3: Global rankings of the nations based on the indicators of P-1 (Institutions)

Indicators		Global Rankings				
Number	Name	Singapore (2) ^a	Taiwan (27) ^a	S. Korea (69) ^a	China (51) ^a	India (60) ^a
I-1.01	<i>Property Rights</i>	4	19	45	63	103
I-1.02	<i>Intellectual Property Protection</i>	4	27	52	50	50
I-1.03	<i>Diversion of Public funds</i>	4	34	66	28	40
I-1.04	<i>Public Trust in Politicians</i>	1	32	94	67	31
I-1.05	<i>Irregular Payments & Bribes</i>	3	29	46	67	63
I-1.06	<i>Judicial Independence</i>	23	47	69	29	64
I-1.07	<i>Favouritism in Decision of Govt. Officials</i>	2	24	80	24	32
I-1.08	<i>Wastefulness of Govt. Spending</i>	3	45	70	26	51
I-1.09	<i>Burden of Govt. Regulation</i>	1	20	97	50	27
I-1.10	<i>Efficiency of Legal Framework in Settling Disputes</i>	1	56	57	66	42
I-1.11	<i>Efficiency of Legal Framework in Challenging Reg.</i>	10	63	74	36	39
I-1.12	<i>Transparency of Govt. Policy Making</i>	1	15	123	86	58
I-1.13	<i>Business Costs of Terrorism</i>	41	33	93	60	126
I-1.14	<i>Business Costs of Crime & Violence</i>	7	16	68	76	98
I-1.15	<i>Organized Crime</i>	5	32	83	51	119
I-1.16	<i>Reliability of Police Services</i>	8	37	47	60	86
I-1.17	<i>Ethical Behaviour of Firms</i>	4	31	95	61	44
I-1.18	<i>Strength of Auditing & Reporting Standards</i>	7	19	72	80	95
I-1.19	<i>Efficacy of Corporate Boards</i>	6	35	120	105	96
I-1.20	<i>Protection of Minority Shareholders Interests</i>	6	16	95	71	69
I-1.21	<i>Strength of Investor Protection</i>	3	30	21	110	6

a – Overall Global Rank

In this pillar Singapore has been ranked as number 2 and Taiwan is at 27th position, whereas, China, S. Korea and India have been placed at number 51, 69 and 60 respectively (Table 3). In fact, Singapore has single digit ranking (1-9) in eighteen indicators. Except India, which is at number 6 in indicator I-1.21 (*Strength of Investor Protection*), remaining others are not even ranked amongst the top ten economies in any of the indicator. Taiwan has secured top 20 positions in 6 indicators pertaining to *Property Rights* (I-1.01), *Burden of Govt. Regulation* (I-1.09), *Transparency of Govt. Policy Making* (I-1.12), *Business Costs of Crime & Violence* (I-1.14), *Strength of Auditing and Reporting Standards* (I-1.18) and *Protection of minority Shareholders Interests* (I-1.20) out of 21 indicators. China has a global ranking in twenties in four indicators pertaining to *Favouritism in Decision of Govt. Official* (I-1.07), *Wasteful Expenditure* (I-1.08), *Diversion of Public Funds* (I-1.03) and *Judicial Independence* (I-1.07) and Taiwan in three indicators which are *Intellectual Property Protection* (I-1.02), *Irregular Payments and Bribes* (I-1.05) and *Favouritism in Decision of Govt. Official* (I-1.07). In comparison, S. Korea and India have been ranked in twenties in only one parameter. India is ranked at 27 in *Burden of Government Regulation* (I-1.09) and S. Korea has secured 21st position in *Strength of Investor Protection* (I-1.21). In five indicators (I-1.01, I-1.02, I-1.05, I-1.10, and I-1.12-20), China, India and S. Korea do not figure in top 40 nations, thereby suggesting a need for vast improvement in these parameters. In addition, China has to address the issues of *Public Trust in Politicians* (I-1.04), *Burden of Government Regulation* (I-1.09) and *Strength of Investor Protection* (I-1.21), as its global rankings in these indicators are 67, 50, 110 respectively. Similarly, poor global rankings of S. Korea, ranging from 69-97 in five indicators i.e. *Public Trust in Politicians* (I-1.04), *Judicial Independence* (I-1.06), *Favouritism in Decision of Govt. Officials* (I-1.07), *Wastefulness of Govt. Spending* (I-1.08), and *Burden of Govt. Regulation* (I-1.09) requires serious thinking and impetus for improvement by the government. India has to lay more emphasis on *Wastefulness of Government Spending* (I-1.08) as it has been ranked at 51st position. Singapore has only one parameter (I-1.13) related to *Business Cost of Terrorism* to improve upon, where it's ranking is 41st.

P-2 (Infrastructure): Under this pillar the quality and extensiveness of 'Infrastructure' in a country is assessed. Among the important infrastructures, a wide network of effective modes of transportation, uninterrupted electricity supply and a robust and extensive telecommunications network are considered essential for economic growth. Infrastructures which can be either physical or digital, has indirect impact on the productivity by enabling and improving access to basic services such as sanitation, education and healthcare, thus contributing towards a workforce which is healthier and better skilled (Calderon & Serven,

2014). The global rankings of the five nations in this pillar (Table 4) indicate that Singapore (2), Taiwan (12) and S. Korea (13) are doing very well, whereas China (39) and India (81) have lot of room for improvement. Singapore has excellent infrastructure in terms of road, rail, airport and seaport as it has been globally ranked amongst the top eight global economies. In fact, it is top ranked in the *Quality of Air Transport Infrastructure* (I-2.05) and second to Netherland in *Quality of Port Infrastructure* (I-2.04). Based on the indicators I-2.08 and I-2.09, it seems Singaporeans rely more on mobile telephones rather than on fixed telephones. S. Korea's and Taiwan's performance is praiseworthy in this (I-2.09) pillar. The overall rank of Taiwan and S. Korea in this pillar is almost same and Taiwan has secured top 10 positions in 2 indicators i.e. *Quality of Roads* (I-2.02) and *Fixed-Telephone lines/100 populations* (I-2.09). In fact in the indicator *Fixed-Telephone lines/100 populations*, Taiwan is on 2nd position following Hong Kong SAR (1 rank) and performing far better than Singapore (29). S. Korea has been globally ranked in the range of 10-38 barring *Mobile Telephone Subscription* (I-2.08) as it relies more on *Fixed Telephones* (I-2.09) and competing with Taiwan in this indicator, which is at 4 in this indicator (I-2.09). Though China's position is better than India's in all the nine indicators, but both lag behind Singapore, Taiwan and S. Korea in almost all the indicators. China and India have satisfactory *Railroad Infrastructure* (I-2.03) but need big improvements in *Quality of Roads* (I-2.02), *Quality of Air Transport Infrastructure* (I-2.05), *Quality of Port Infrastructure* (I-2.04), *Quality of Electric Supply* (I-2.07) and *Telephone Connectivity* (I-2.08 and I-2.09).

Table 4: Global rankings of the nations based on the indicators of P-2 (Infrastructure)

Indicators		Global Rankings				
Number	Names	Singapore (2) ^a	Taiwan (12) ^a	S. Korea (13) ^a	China (39) ^a	India (81) ^a
I-2.01	<i>Quality of Overall infrastructure</i>	4	21	20	51	74
I-2.02	<i>Quality of Roads</i>	3	10	17	42	61
I-2.03	<i>Quality of Railroad Infrastructure</i>	8	11	10	16	29
I-2.04	<i>Quality of Port Infrastructure</i>	2	19	27	50	60
I-2.05	<i>Quality of Air Transport Infrastructure</i>	1	26	28	51	71
I-2.06	<i>Available Airline Seat km/week, millions</i>	20	26	19	2	11
I-2.07	<i>Quality of Electricity Supply</i>	3	28	38	53	98
I-2.08	<i>Mobile Telephone</i>	14	44	65	107	121

	<i>Subscriptions/100 populations</i>					
I-2.09	<i>Fixed – Telephone Lines/100 populations</i>	29	2	4	63	116

a – Overall Global Rank

P-3 (Macroeconomic Environment): ‘Macroeconomic Environment’ is determined by the aggregated indicators such as GDP, unemployment rates, price indexes etc. This pillar evaluates the stability of the ‘Macroeconomic Environment’, which is of paramount importance for the smooth functioning of the nations. A nation cannot work properly if inflation goes out of the hand. The overall ranks of Singapore, Taiwan, S. Korea, China, and India are 12, 13, 5, 8 and 91 respectively (Table 5). These rankings clearly suggest that barring India, all the four nations are doing quite well in this pillar.

India fares very poorly in all but one indicator *Gross National Savings* (I-3.02) as its global ranking is in triple digits in three out of total five indicators. These indicators are I-3.01: *Government Budget Balance*, I-3.03: *Inflation, Annual % Change* and I-3.04: *General Government Debt*. In one indicator I-3.03 (*Inflation, Annual % Change*) four nations i.e. Singapore, Taiwan, S. Korea and China are at 1st position, whereas, India is at 105th position which is undoubtedly miserable. S. Korea, China and Taiwan can look upon Singapore for improvements in the indicator related to *Government Budget Balance* (I-3.01). Singapore’s ranking in four indicators (I-3.01, I-3.02, I-3.03 and I-3.05) is remarkable, Taiwan and S. Korea is performing almost equally well in last 4 indicators.

Table 5: Global rankings of the nations based on the indicators of P-3 (Macroeconomic Environment)

Indicators		Global Rankings				
Number	Names	Singapore (12) ^a	Taiwan (13) ^a	S. Korea (5) ^a	China (8) ^a	India (91) ^a
I-3.01	<i>Government Budget Balance, % GDP</i>	6	60	19	34	131
I-3.02	<i>Gross National Savings, %GDP</i>	5	12	14	3	23
I-3.03	<i>Inflation, Annual % Change</i>	1	1	1	1	105
I-3.04	<i>General Government Debt, % GDP</i>	127	56	52	66	103
I-3.05	<i>Country Credit Rating, 0-100</i>	7	21	20	26	50

a – Overall Global Rank

P-4 (Health & Primary Education): Apart from health, this pillar also takes into consideration the scale and quality of the basic education received by the population. Basic education is increasingly important in today's scenario as it enhances the efficiency of each individual worker and also has an impact on the overall national productivity (Cole & Neumayer 2006). Lack of basic education constrains business development and further expansion. Singapore is ranked at number 2 after Finland (1st rank) in this pillar (Table 6). Taiwan, S. Korea, China and India have been ranked at 14th, 23rd, 44th and 84th respectively.

The extent of prevalence of two major diseases, malaria and tuberculosis as well as infant mortality are indicative of the level of hygienic conditions prevailing in a country. Poor hygienic conditions do have impact on the performance of public and private sectors. Amongst the five nations, India has the maximum *Prevalence of Malaria (I-4.01)*, *Tuberculosis (I-4.03)*, *HIV (I-4.05)* and *Infant Mortality Deaths (I-4.07)* and thus ranks very poorly in the global rankings (Table 6). As shown in Table 6 Singapore and Taiwan are performing extra ordinarily well in first two indicators i.e. *Malaria Cases/ 1000000 Populations (I-4.01)* and *Business Impact of Malaria (I-4.02)* because both the countries have been declared Malaria free. China has better record than India but poor record *vis a vis* Singapore, Taiwan and S. Korea. Even though, the causative agent of malaria, anopheles mosquito, thrives in temperate region, malaria cases are not seen in Singapore due to maintenance of hygiene throughout the nation.

Amongst the parameters of primary education (I-4.09), Singapore is listed amongst the top three nations. Finland and Belgium occupy first and second rankings respectively. India does not figure in the top 50 nations. Though Taiwan (16) and S. Korea (36) have a better ranking than China (55) and India (52) in the indicator of *Quality of Primary Education (I-4.09)*, but China (20) has a better record than S. Korea (31) in the indicator, *Percentage of Primary Education Enrolment (I-4.10)* in which India is placed at 77th position.

Table 6: Global rankings of the nations based on the indicators of P-4 (Health & Primary Education)

Indicators		Global Rankings				
Number	Names	Singapore (2) ^a	Taiwan (14) ^a	S. Korea (23) ^a	China (44) ^a	India (84) ^a
I-4.01	<i>Malaria Cases/1000,000 populations</i>	M.F	M.F	18	15	44
I-4.02	<i>Business Impact of Malaria</i>	N/Apppl.	N/Apppl.	22	32	60
I-4.03	<i>Tuberculosis Cases/1000,000 populations</i>	66	69	89	81	113

I-4.04	<i>Business Impact of Tuberculosis</i>	48	46	85	93	132
I-4.05	<i>HIV Prevalence, % Adult populations</i>	1	1	1	1	63
I-4.06	<i>Business Impact of HIV/AIDS</i>	39	25	79	86	130
I-4.07	<i>Infant Mortality, Deaths/1,000 Live Births</i>	6	25	16	59	114
I-4.08	<i>Life Expectancy in Years</i>	6	30	13	53	107
I-4.09	<i>Quality of Primary Education</i>	3	16	36	55	52
I-4.10	<i>Primary Education Enrolment, net %</i>	1	32	31	20	77

a – Overall Global Rank

Category-2 (Efficiency Enhancers): The factors that are responsible for enhancing the efficiency of human resource and economic operations are grouped under this category. Six pillars comprising this category are ‘Higher Education and Training’, ‘Goods Market Efficiency’, ‘Labour Market Efficiency’, ‘Financial Market Development’, ‘Technological Readiness’ and ‘Market size’. Based on the overall ranking of this category, Singapore, Taiwan, S. Korea, China and India have been placed at number 2, 15, 25, 32 and 58 respectively (Fig. 2). First place is occupied by USA. The overall ranking of five nations under this category (P5-P10) is given in Fig. 4.

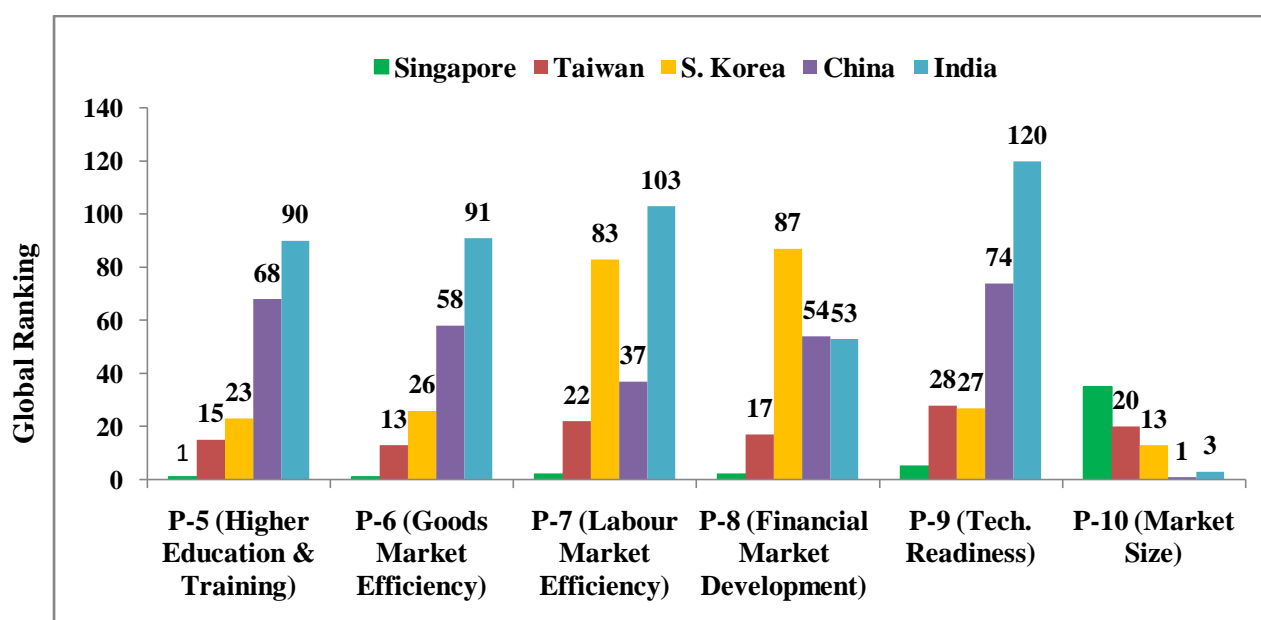


Fig. 4: Global rankings of the nations based on the pillars of category-2 (Efficiency Enhancers)

P-5 (Higher Education and Training): This pillar focuses on secondary and tertiary enrolment rates as well as the quality of education as evaluated by business leaders. The

extent of staff training is also considered because of the importance of vocational and continuous training for constant upgradation of workers' skills. Today's rapidly globalizing economy necessitates countries to nurture pools of highly educated workers, who are able to perform complicated tasks and rapidly adapt to their changing environment and the evolving needs of the economy (Acemoglu, 2009). Every indicator of this pillar is very important for economies to move up the value chain.

This pillar comprises of eight indicators (Table 7) and Singapore is positioned at number one in the overall rank. Except for *Secondary Education Enrolment* (I-5.01), Singapore is doing exceedingly well in other 7 indicators as its global ranking is in single digit. The education system of Singapore is very strong and coordination with education ministries is also very good. This effective coordination has resulted in the ranking of two of its universities i.e. National University of Singapore (26) and Nanyang Technological University (55) in top 100 universities worldwide (Times Higher Education Ranking, 2015). S. Korea has an excellent record in the indicator I-5.02 (*Tertiary Education Enrollment, gross %*), where it has been ranked at number 2. Only Greece is ahead of S. Korea in this indicator. In this indicator (*Tertiary Education Enrollment, gross %*) Taiwan (8) and Singapore (9) have secured top 10 positions, which is commendable. They also have satisfactory score related to the availability of access to internet services (I-5.06) in the schools. China and India are way behind many nations in this pillar as their global rankings range between (47-85) and (43-105) respectively in the indicators falling under this pillar.

Table 7: Global rankings of the nations based on the indicators of P-5 (Higher Education & Training)

Indicators		Global Rankings				
Number	Names	Singapore (1) ^a	Taiwan (15) ^a	S. Korea (23) ^a	China (68) ^a	India (90) ^a
I-5.01	<i>Secondary Education Enrolment, gross %</i>	17	31	48	74	105
I-5.02	<i>Tertiary Education Enrolment, gross %</i>	9	8	2	83	86
I-5.03	<i>Quality of Education System</i>	3	46	66	56	43
I-5.04	<i>Quality of Math & Science Education</i>	1	15	30	49	63
I-5.05	<i>Quality of Management Schools</i>	4	33	59	85	55
I-5.06	<i>Internet Access in Schools</i>	2	27	19	47	100
I-5.07	<i>Availability of Specialized training Services</i>	8	23	48	63	68
I-5.08	<i>Extent of staff Training</i>	4	27	36	50	48

a – Overall Global Rank

P-6 (Goods Market Efficiency): Economies with efficient goods markets are well placed to provide the right mix of products and services according to their supply-and-demand environment (Aghion & Schankerman, 2004). Market competition (both domestic and foreign), customer orientation and buyer sophistication are taken into consideration in assessing goods market efficiency. The best environment for the exchange of goods requires minimal governmental intervention that impedes business activity. There are 16 indicators under this pillar (Table 8).

Table 8: Global rankings of the nations based on the indicators of P-6 (Goods Market Efficiency)

Indicators		Global Rankings				
Number	Names	Singapore (1) ^a	Taiwan (13) ^a	S. Korea (26) ^a	China (58) ^a	India (91) ^a
I-6.01	<i>Intensity of Local Competition</i>	21	5	13	36	101
I-6.02	<i>Extent of Market Dominance</i>	13	4	97	28	41
I-6.03	<i>Effectiveness of Anti-Monopoly Policy</i>	5	23	33	36	41
I-6.04	<i>Effect of taxation on incentives to invest</i>	5	26	78	50	38
I-6.05	<i>Total Tax Rate, % profits</i>	10	58	48	128	123
I-6.06	<i>No. Procedure to Start a Business</i>	9	9	9	123	129
I-6.07	<i>No. Days to Start a Business</i>	4	53	10	117	110
I-6.08	<i>Agricultural Policy Costs</i>	6	44	69	16	53
I-6.09	<i>Prevalence of Non-Tariff Barriers</i>	1	17	97	78	82
I-6.10	<i>Trade Tariffs, %duty</i>	2	68	85	117	124
I-6.11	<i>Prevalence of Foreign Ownership</i>	4	49	92	74	96
I-6.12	<i>Business Impact of Rules on FDI</i>	3	50	98	61	92
I-6.13	<i>Burden of Customs Procedures</i>	2	12	43	56	54
I-6.14	<i>Imports as a %age of GDP</i>	2	42	74	131	116
I-6.15	<i>Degree of Customer Orientation</i>	9	5	25	68	97
I-6.16	<i>Buyers Sophistication</i>	7	19	8	21	26

a – Overall Global Rank

Under this pillar, number one global ranking is again occupied by Singapore. Out of a total 16 indicators, it enjoys a ranking between 1-10 in 14 parameters. In the remaining two parameters of *Intensity of Local Competition* (I-6.01) and *Extent of Market Dominance* (I-6.02), it has been ranked at number 21 and 13 respectively. Taiwan has secured single digit

positions in 4 indicators i.e. *Intensity of Local Competition* (I-6.01), *Extent of Market Dominance* (I-6.02), *Number of Procedures to Start a Business* (I-6.06) and *Degree of Customer Orientation* (I-6.15). Even it is doing much better than Singapore in these above mentioned indicators. S. Korea is ranked at 26 and matches Singapore and Taiwan in *Number of Procedure to start a Business* i.e. 9, (I-6.06). Even in *Number of Days to Start a Business* (I-6.07) and *Buyers Sophistication* (I-6.16), S. Korea is not far behind Singapore. In one indicator i.e. I-6.01 dealing with the extent of market competition of goods/services, Taiwan is ahead of S. Korea, Singapore, China and India. China and India have lot of catching up to do in this pillar as they are not even in the top 100 nations in 5 indicators i.e. *Taxation Rate* (I-6.05), *No. of Procedures to Start a Business* (I-6.06), *Number of Days to Start a Business* (I-6.07), *Percentage duty on Trade Tariffs* (I-6.10) and *Imports as % of GDP* (I-6.14). The best ranking of these two countries is in twenties in the indicator *Buyers Sophistication* (I-6.16). In majority of the indicators belonging to the pillar ‘Goods Market Efficiency’ both these countries do not figure in the top 50 nations considered for the comparative data analysis for this report.

P-7 (Labour Market Efficiency): The ‘labour Market Efficiency’ and flexibility are critical for ensuring that workers are employed in their most effective sector in the economy and incentivized to put in their best effort (Bassanini *et al.*, 2009). Efforts to promote meritocracy, gender equality and strong incentives for employees promote efficient labour markets. These factors have a positive effect on the overall performance of workers and the attractiveness of the country for global talent. Rigid labour markets are generally characterized by high unemployment rates. This pillar comprises of 10 indicators (Table 9).

Table 9: Global rankings of the nations based on the indicators of P-7 (Labour Market Efficiency)

Indicators		Global Rankings				
Number	Names	Singapore (2) ^a	Taiwan (22) ^a	S. Korea (83) ^a	China (37) ^a	India (103) ^a
I-7.01	<i>Cooperation in Labour-Employer Relations</i>	3	19	132	62	86
I-7.02	<i>Flexibility Wage Determination</i>	6	14	66	73	120
I-7.03	<i>Hiring & Firing practices</i>	4	14	115	17	25
I-7.04	<i>Redundancy Costs, Weeks of Salary</i>	5	102	117	117	70
I-7.05	<i>Effect of Taxation on Incentives to Work</i>	3	21	99	58	36
I-7.06	<i>Pay & Productivity</i>	3	9	24	20	47

I-7.07	<i>Reliance on Professional Management</i>	5	26	37	55	86
I-7.08	<i>Country Capacity to Retain Talent</i>	6	39	25	30	40
I-7.09	<i>Country Capacity to Attract Talent</i>	2	56	35	27	40
I-7.10	<i>Women in Labour Force, ratio to men</i>	75	79	91	60	132

a – Overall Global Rank

Once again, Singapore is doing very well in this pillar, as only one country, Switzerland is ahead of Singapore in the overall global rank. In nine out of total ten indicators, Singapore's global ranking ranges between 2 - 6. Only the indicator I-7.10, dealing with extent of women doing labour work, its global ranking (75th) is quite poor. In fact, the other four nations are also not doing well in this indicator as they have been ranked at 60 (China), 79 (Taiwan), 91 (S. Korea) and 132 (India). Taiwan has 22nd position in this pillar and figures in the top 20 nations in 4 indicators out of 10. Those are: *Cooperation in Labour-Employer Relations* (I-7.01), *Flexibility Wage Determination* (I-7.02), *Hiring & Firing Practices* (I-7.03) and *Pay & Productivity* (I-7.06). China has an overall ranking of 37, with best ranking of 17 in the indicator *Hiring and Firing Practices* (I-7.03). In other three indicators involving *Pay and Productivity* (I-7.06), *Capacity to Retain Talent* (I-7.08) and *Capacity to Attract Talent* (I-7.09), China's performance is not bad as its global rankings of these indicators range from 20-30. However, it has to address other indicators, especially I-7.04, which deals with the cost of the salary paid to a redundant employee. Its global ranking in this indicator is 117. Though S. Korea's overall ranking in this pillar is 83rd, but its performance is satisfactory (global rankings 24-37), in four indicators (I-7.06, I-7.07, I-7.08 and I-7.09) dealing with ability to attract and retain talent, level of professional management and the relationship of employees salary vis a vis productivity of the company. India does not figure in top 100 nations in this pillar. Only in one indicator (I-7.03: *Hiring and Firing Practices*) its global rank is 25 is satisfactory. Its poorest performance is in the parameter dealing with the *Ratio of Men to Women in Labour Force* (I-7.10), where it has been ranked at number 132. If we consider the ranking range of all 5 nations, Singapore and Taiwan ranges in the same scale, 2-75, 2-79 respectively and S. Korea and India ranges in the same scale, 24-132, 25-132 respectively.

P-8 (Financial Market Development): A sound and well-functioning financial sector allocates the natural resources or resources generated by a nation's citizens, as well as those entering the economy from abroad, to their most productive uses for economic activities

(Levine, 2005). Financial market development is determined by capital availability from sources such as loans, securities exchanges, venture capital, and other financial products for which the banking sector needs to be trustworthy and transparent. The global ranking range for India under this pillar is 13-100 (Table 10), whereas for Singapore, Taiwan, S. Korea and China, the range is between 3-17, 3-80, 47-119 and 16-80 respectively. In the indicator *Venture Capital Availability (I-8.05)* India is doing better than S. Korea (86) and China (16) with global rank 13 and competing with Taiwan (12). Singapore enjoys the 3rd position in this indicator. Taiwan has procured top 20 positions in 4 indicators out of 8 i.e. *Affordability of Financial Services (I-8.02)*, *Financing through Local Equity Market (I-8.03)*, *Venture Capital Availability (I-8.05)* and *Regulations of Securities Exchanges (I-8.07)*.

Table 10: Global rankings of the nations based on the indicators of P-8 (Financial Market Development)

Indicators		Global Rankings				
Number	Names	Singapore (2) ^a	Taiwan (17) ^a	S. Korea (87) ^a	China (54) ^a	India (53) ^a
I-8.01	<i>Availability of Financial Services</i>	8	24	99	61	81
I-8.02	<i>Affordability of Financial Services</i>	7	11	89	48	71
I-8.03	<i>Financing through Local Equity Market</i>	8	3	47	44	45
I-8.04	<i>Ease of Access to Loans</i>	4	26	119	21	29
I-8.05	<i>Venture Capital Availability</i>	3	12	86	16	13
I-8.06	<i>Soundness of Banks</i>	5	25	113	78	100
I-8.07	<i>Regulation of Securities Exchanges</i>	3	14	78	52	69
I-8.08	<i>Legal Rights Index, 0-12</i>	17	80	63	80	44

a – Overall Global Rank

P-9 (Technological Readiness): The application of technology is increasingly essential for firms to compete and prosper in the globalized economy. The pillar of ‘Technological Readiness’ measures the efficiency with which existing technologies are adopted by an economy to enhance industrial productivity with particular emphasis on its capacity to fully leverage information and communication technologies (Comin & Hobijn 2004). This pillar comprises of 7 indicators (Table 11) which are reflective of the levels of science and technology of the nations.

Table 11: Global rankings of the nations based on the indicators of P-9 (Technological Readiness)

Indicators		Global Rankings				
Number	Names	Singapore (5) ^a	Taiwan (28) ^a	S. Korea (27) ^a	China (74) ^a	India (120) ^a
I-9.01	<i>Availability of Latest Technologies</i>	13	36	31	95	108
I-9.02	<i>Firm-Level Technology Absorption</i>	16	25	27	66	102
I-9.03	<i>FDI & Technology Transfer</i>	2	37	67	69	95
I-9.04	<i>Individuals Using Internet</i>	24	22	20	70	107
I-9.05	<i>Fixed Broadband Internet Subscriptions/100 populations</i>	23	16	5	57	104
I-9.06	<i>Int'l Internet Bandwidth, kb/s per User</i>	4	45	57	119	116
I-9.07	<i>Mobile-Broadband Subscriptions/100 populations</i>	1	34	12	71	124

a – Overall Global Rank

The global rankings of Singapore (5), Taiwan (28), S. Korea (27), China (74) and India (120) clearly indicate that Singapore is far ahead of other four countries. Singapore is technology as well as internet savvy and Taiwan is a leading competitor in the world's ICT sector. According to the World Trade Organization, Taiwan was the 20th largest exporter and 19th largest importer of merchandise in 2014 (The official website of republic of China, 2016). Singapore not only encourages FDI (I-9.04), but also promotes the use of wireless connectivity (I-9.06 & 9.07). S. Korea figures in the top 20 global rankings in three indicators (I-9.04, I-9.05 and I-9.07) and can improve in two indicators namely, *FDI & Technology Transfer* (I-9.03) and *International Internet Bandwidth* (I-9.06). In the indicator, *Individuals Using Internet* (I-9.04) Singapore (24), Taiwan (22) and S. Korea (20) are competing with each other. China and India are yet to embrace technology and use of internet services on a large scale. Under this pillar the global rankings of China and India are 57-119 and 95-124 respectively. In fact, India's ranking is more than 100 in all the indicators except *FDI and Technology Transfer* (I-9.03) i.e. 95. The dismal scenario of India as well as China in this pillar calls for radical changes in the policy related to FDI, latest-technology usage and internet services.

P-10 (Market Size): Traditionally, the markets available to firms have been constrained by national borders and the size of the market affects productivity since large markets allow firms to exploit economies of scale (Romer, 1996). However, in this era of globalization, international markets have emerged as a substitute for domestic markets, especially for small countries. Thus market size is inclusive of both domestic and foreign markets. There are 4 indicators under this pillar (Table 12).

Table 12: Global rankings of the nations based on indicators of the P-10 (Market Size)

Indicators		Global Rankings				
Number	Names	Singapore (35) ^a	Taiwan (20) ^a	S. Korea (13) ^a	China (1) ^a	India (3) ^a
I-10.01	<i>Domestic Market Size Index</i>	43	24	13	2	3
I-10.02	<i>Foreign Market Size Index</i>	9	13	8	1	3
I-10.03	<i>GDP (PPP\$ billions)</i>	39	20	13	1	3
I-10.04	<i>Exports as a %age of GDP</i>	3	23	47	110	114

a – Overall Global Rank

This is the only pillar in which India and China have been ranked amongst top 5 nations. China tops the overall rankings, followed by USA and India. Top rankings of these nations in the first two indicators namely, *Domestic Market Size Index* (I-10.01) and *Foreign Market Size Index* (I-10.02) could be attributed to large size as well as large population of both these countries. However, India and China are performing poorly in the export sector as reflected by their rankings of 110 and 114 respectively, in the indicator I-10.04 (*Exports as a %age of GDP*) in which Singapore is at 3rd position and Taiwan is ranked at 23rd position. S. Korea's global ranking of 8-13 in the first three indicators (I-10.01–I-10.03) is suggestive of good performance in the domains of domestic market size, foreign market size and purchasing power parity (PPP). However, it can improve upon the indicator I-10.04 dealing with the exports of goods and services to the rest of the world. Singapore, not only encourages foreign investment but also exporting many of the products manufactured (I-10.04: *Exports as a %age of GDP*) and thus globally placed at 3rd position. Because of small size and population, Singapore finds difficult to increase the *Domestic Market Size Index* (I-10.01). The ranking range of Taiwan is 13-23 which is very consistent. Taiwan is leading Singapore in 2 indicators (Table 12) out of 4 i.e. *Domestic Market Size index* (I-10.02), which may be again attributed to population and size of both the countries and *GDP (PPP\$ billions)* (I-10.03). Though, the population size of India and China is very big but the manpower is semi-skilled and poor in education. By working on these parameters, both nations can certainly improve upon exporting many goods and thus generating revenues for the respective countries.

Category-3 (Innovation & Sophistication Factors): This category is comprised of two pillars i.e., ‘Business Sophistication’ & ‘Innovation’. The ranking in these pillars determine the level of sophistication in terms of business operations as well as application of technological innovation. The overall ranking of five nations under this category (P11 and P12) is given in Fig. 5. In both the pillars Singapore tops the global ranking amongst five nations, followed by Taiwan, S. Korea, China and India.

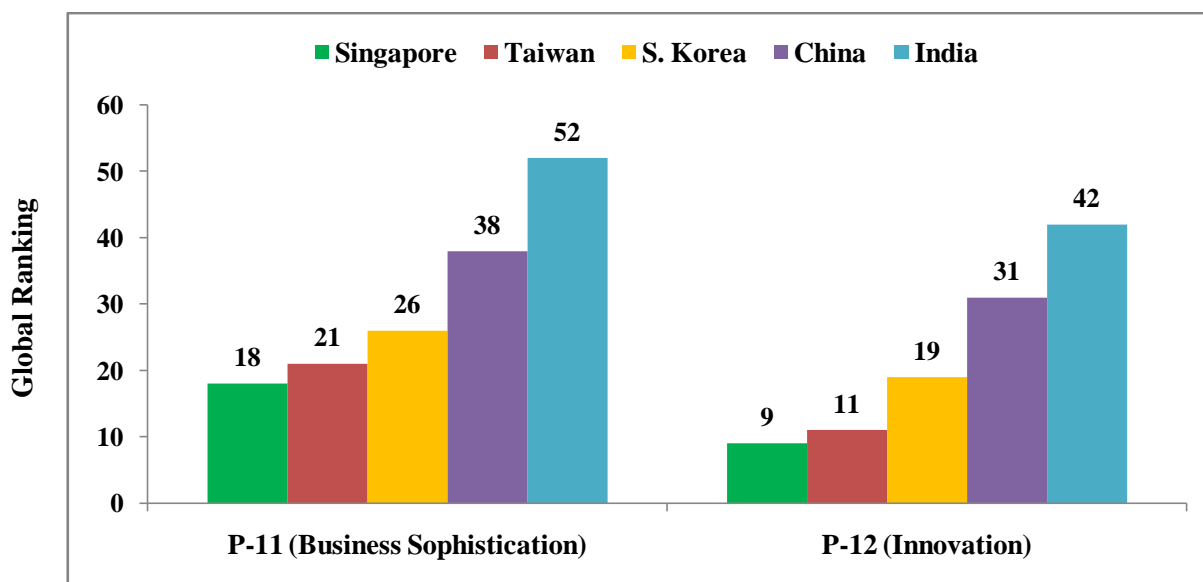


Fig. 5: Global rankings of the nations based on the pillars of category-3 (Innovation & Sophistication Factors)

P-11 (Business Sophistication): It is a common knowledge that sophisticated business practices lead to higher efficiency in the production of goods and services. The qualities of a country’s overall business networks and of individual firms’ operations and strategies are two closely interlinked factors that determine business sophistication (WEF Report, 2015). The assessment of the sophistication factors such as branding, marketing, distribution, advanced production processes, and the production of unique and sophisticated products are grouped under this pillar. There are 9 indicators under this pillar (Table 13)

Table 13: Global rankings of the nations based on the indicators of P-11 (Business Sophistication)

Indicators		Global Rankings				
Number	Names	Singapore (18) ^a	Taiwan (21) ^a	S. Korea (26) ^a	China (38) ^a	India (52) ^a
I-11.01	<i>Local Supplier Quantity</i>	71	13	23	15	54
I-11.02	<i>Local Supplier Quality</i>	26	20	28	63	66
I-11.03	<i>State of Cluster Development</i>	13	5	23	24	29

I-11.04	<i>Nature of Competitive Advantage</i>	15	22	20	48	47
I-11.05	<i>Value Chain Breadth</i>	12	19	21	43	29
I-11.06	<i>Control of International Distribution</i>	24	38	15	29	48
I-11.07	<i>Production Process Sophistication</i>	14	21	23	49	61
I-11.08	<i>Extent of Marketing</i>	18	22	33	64	82
I-11.09	<i>Willingness to Delegate Authority</i>	21	31	62	48	56

a – Overall Global Rank

Amongst the five nations, Singapore is globally ranked at 18, followed by Taiwan (21), S. Korea (26), China (38) and India (52). Except for one indicator, *Local Supplier Quality* (I-11.01), Singapore is ranked between 12 - 26 in rest of the eight indicators. In five indicators (I-11.03, I-11.04, I-11.05, I-11.07 and I-11.08), it is ranked among the top 18 nations. The overall rank of Taiwan is 3 ranks less than Singapore in this pillar but Taiwan is ahead of Singapore in three indicators pertaining to *Local Supplier Quality* (I-11.01), *Local Supplier Quality* (I-11.02), and *State of Cluster Development* (I-11.03). In the First indicator of this pillar (I-11.01) China (15) and Taiwan (13) is competing with each other as there is only 2 ranks' difference between them. S. Korea's performance is satisfactory as its rankings ranges between 15 - 33, for eight indicators. Only in one indicator i.e. *Willingness to Delegate Authority* (I-11.09), it is ranked at 62nd position. China has only three indicators, I-11.01 (*Local Supplier Quality*), I-11.03 (*State of Cluster Development*) and I-11.06 (*Control of International Distribution*) in which it is ranked among the top 30 nations, whereas in other six indicators, it is placed in the global rankings between 43 - 64. India's overall ranking of 52nd indicates that it has to do a lot to catch up with Singapore, Taiwan, S. Korea and China. Its best ranking (29) is in the indicator, *Value Chain Length* (I-11.05) and worst (82nd) in *Extent of Marketing* (I-11.08), which suggests that India has to quickly learn the nuances of marketing and administration if it dreams of becoming a significant player in the global economy.

P-12 (Innovation): This pillar of competitiveness focuses on technological innovation. Technological breakthroughs or innovations have been at the very foundation of many dramatic productivity gains that our economies have historically experienced because in the long run, standards of living can be largely enhanced by technological innovations alone. The acceptability of new, unconventional and disruptive ideas has a great impact on creative innovations that break new frontiers in knowledge creation (Acemoglu *et al.*, 2014).

Table 14: Global rankings of the nations based on the indicators of P-12 (Innovation)

Indicators		Global Rankings				
Number	Names	Singapore (9) ^a	Taiwan (11) ^a	S. Korea (19) ^a	China (31) ^a	India (42) ^a
I-12.01	<i>Capacity for Innovation</i>	19	21	24	49	50
I-12.02	<i>Quality of Scientific Research Institutions</i>	12	26	27	42	45
I-12.03	<i>Company Spending on R&D</i>	11	13	21	23	31
I-12.04	<i>University-Industry Collaboration in R&D</i>	5	14	26	32	50
I-12.05	<i>Govt Procurement of Advanced Tech. Products</i>	4	29	24	9	26
I-12.06	<i>Availability of Scientists & Engineers</i>	11	28	40	36	49
I-12.07	<i>PCT Patents, Application/million populations</i>	14	n/a	7	32	61

a – Overall Global Rank

This pillar comprises of seven indicators (Table 14). The pattern of comparative rankings of the five nations is the same as observed in the pillar-‘Business Sophistication’. Singapore (9th) tops the list, followed by Taiwan (11th), S. Korea (19th), China (31st) and India (42nd). Interestingly, in this pillar, except Taiwan all other nations are performing better than the pillar ‘Business Sophistication’, as indicated by better ranking of each nation in the ‘Innovation’ pillar. Singapore has impressive showing in all the indicators as its global rankings are in top 20 nations of the world. Its single digit ranking of 5 in the indicator, *University-Industry Collaboration in R&D* (I-12.04) shows that it lays high emphasis on converting academic knowledge into patents and commercial products. The involvement of private sector investment in R&D is also praiseworthy as it has been globally ranked at position 11 in the indicator, *Company Spending on R&D* (I-12.03). These impressive rankings are the outcome of highly skilled scientists and availability of sophisticated instruments and other infrastructure (I-12.02 and I-12.06). Taiwan’s over all rank is 11 in this pillar. The investment of private sector in R&D scenario is good as it is ranked at 13th position in the indicator in *Company Spending on R&D* (I-12.0-3). Taiwan figures in top 30 nations in all 6 indicators under this pillar (the data on patents (I-12.07) is not available for Taiwan in GCI because it is not signatory of Patent Corporation of Treaty (PCT)). S. Korea’s ranking of 19 is satisfactory in this pillar. Except one indicator (I-12.06: *Availability of Scientists and Engineers*), it is doing reasonably well in other six indicators (Table 13). Its patent filing ratio is one of the best in the world (I-12.07: *PCT Patents, Application/million*

populations). However, it can vastly improve its ranking if it lays more emphasis on the scientific infrastructure and producing more professional scientists and engineers. China is not far behind S. Korea in almost all the indicators of the pillar ‘Innovation’. In fact, it is leading S. Korea in two indicators namely, (*Govt. Procurement of Advanced Technology Products* (I-12.05) and *Availability of Scientists and Engineers* (I-12.06). India lags behind in all the seven indicators. However, its performance is not as bad in this pillar as is in others. It has been ranked in the range of 26-61, in the pillar of ‘Innovation’. India is bound to improve its ranking in this category because heavy investment in R&D and new initiatives of the government to boost Entrepreneurship, Start-ups, Technology Parks and providing relaxations to industries for investments in R&D in universities (Skill Development Policy, 2015).

3. Conclusion

The data presented in this report clearly spells out that Singapore is not only leading Taiwan, S. Korea, China and India in the domain of economic competitiveness, but also is one of the top economically stable countries. Out of 114 indicators of GCI, it is among the top five ranked nations in 54 indicators encompassing all the three categories (“Basic Requirements” –top 5 in 23 indicators, “Efficiency Enhancers” – top 5 in 29 indicators, “Innovation & Sophistication” – top 5 in 2 indicators). Singapore tops (Rank 1) in the global rankings in 11 indicators (“Basic Requirements” – rank 1 in 8 indicators, “Efficiency Enhancers” –rank 1 in 3 indicators).

Taiwan is perceived to be the only Asian country which can compete with Singapore in global rankings based on GCI-2015-16 report. It has secured top 5 positions in 11 indicators out of 114 and top 20 in 40 indicators. Taiwan occupies an important position in the global economy and many authoritative analyses done by World Trade Organization, Economist Intelligent Unit and World Economic Forum, rank Taiwan among the top nations year after year. The country is a leading player in the world’s ICT sector and also a major supplier of goods across industrial fields. According to Taiwan’s Govt. the information and communication technology industry contributes to around one-third of Taiwan’s GDP (The official website of republic of China, 2016).

Taiwan, S. Korea and China have been ranked number one in the indicators of *Control over Inflation* (I-3.03) and *HIV Prevalence, % adult populations* (I-4.05). S. Korea and China have reasonable overall GCI rankings in twenties. In addition, S. Korea ranks among the top five global economies in the areas of *Tertiary Education Enrolment* and *Internet Connectivity/100 Population*. China is ranked number 2 in *Market Size Index*. This fact along with huge population has made China an international hub of commercial activities. However, these 4

countries can look towards Singapore in which they are poorly ranked globally. For example, Taiwan can improve upon *Women in Labour Force, ratio to men, Legal Rights Index* and *Control of International Distribution*. S. Korea needs to modify its labour laws, governance of corporate boards, trade tariffs, foreign ownership of companies and easy access to secure loans. Similarly, China should have a serious relook into labour laws, establishment of a new businesses, corporate governance, adoption of latest technologies, promotion of internet connectivity etc.

India is way behind Singapore, Taiwan, S. Korea and China, in all the three categories of GCI. There is a huge gap between India and the four Asian countries in the category of “Basic Requirement”. Singapore tops the list with 1st global rank, Taiwan is at 14th position, China and S. Korea are in top 30 economies and India is at 80th position. In the category of “Efficiency Enhancers”, Singapore is at 2nd position, Taiwan is at 15th and S. Korea and China are in top 40 nations, whereas, India is at 58th position. In the third category “Innovation & Sophistication Factors” India again lags behind these nations, though the margin is not as huge as in other two categories.

Not only, GCI Report ranks India poorly, other global reports such as World Bank, Human Development Index and The World Fact Book have also rated these four countries ahead of India (Table 15). Because of poor hygienic conditions and limited medical facilities, the life expectancy of Indians is in mid 60s only, whereas other four countries have a much higher life span. Similarly, the literacy rate of India is in early seventies vis a vis mid nineties of other three nations. Majority of Indians still reside in villages. Only one third of its population lives in cities. On the other hand Singapore is 100% urbanite. Taiwan, China’s and Singapore’s urban population is around 78%, 54% and 82% respectively. By addressing these parameters, India will not only improve the quality of life, but this will also help in generating quality workforce, which in turn will boost the GDP of the nation.

Table 15: Comparative data of global agencies of select Asian countries

Attributes	Singapore	Taiwan	S. Korea	China	India
Life Expectancy ^a (years)	82.3	80	81.5	75.4	66.5
Human Development Index (HDI) ^b	0.912	0.882 ^c	0.898	0.727	0.609
Literacy Rate Over 15 years ^c (%)	96.8	98.5	97.9	96.4	71.2
GDP ^d (Trillion US\$) 2014	0.31	0.53 ^f	1.41	10.35	2.05
GDP Growth ^d (annual %)	2.9	-0.68 ^f	3.3	7.3	7.3
Urban Population ^d , 2014 (% of total population)	100	78.0 ^g	82	54	32

Source: a-The Global Competitiveness Index 2015-16, b - Human Development Index (HDI-2015), c-The World Fact Book 2015, d - World Bank -2011-15 (www.worldbank.org).

e-<http://focustaiwan.tw/news/asoc/201409180039.aspx>,
f-<http://www.tradingeconomics.com/taiwan/gdp-growth-annual>
g-https://en.wikipedia.org/wiki/Urbanization_by_country
United Nations does not recognize Taiwan as a sovereign state.
Taiwan is not listed as a separate country for world development indicators.

Although India's global ranking is not impressive at the moment, but it has all the ingredients to become a potential force in global economy in times to come. It has huge natural reserves, large young semi-skilled population, large land and coastal areas. Govt. of India has started taking remedial steps by modifying its economic policies. The impact of such transformation is evidenced by the GDP growth rate of over 7.0%, which is considered one of the best by global standards. US, UK, Germany's growth rate ranges between 1.6 - 2.9 (GCI Report, 2015-16). The scientific excellence of India in the areas of Space Technology and Information Technology is acknowledged by the pundits of developed countries. A separate ministry for Entrepreneurship and Skill Development has been established and provided with large amounts of funds to create a skilled manpower for the industrials sectors and also to encourage young minds of India to convert their novel ideas into Start Up entities (Skill Development Policy 2015). Science Parks, Technology Incubators and Higher Education Institutes on the lines of world acknowledged Indian Institute of Technology (IIT) are being set up (Kumar & K. B, 2011). Infrastructure (roads, airports, educational institutes) is being promoted under public private partnership (ppp) mode (PPP India, 2005). Indian Government is also promoting FDI (India Budget, 2015). These commitments have started paying good dividends as indicated in improved rankings of global agencies like World Economic Forum and various bodies of UNO. The overall GCI rank of India in 2014 was 71 and in 2015, it has jumped to 55. Govt. of India is granting more powers to the states and embracing them as equal partners in India's growth targets. The improvement in Indian economy has been acknowledged by the International Monetary Fund (IMF). It has remarked that Indian economy is in the bright spot in the global landscape and will be one of the fastest growing and big emerging market economies of the world (IMF Report, 2016).

4. References

- Acemoglu D, Akcigit U, Celik MA. 2014. *Young, restless and creative: Openness to disruption and creative innovations* (No. w19894). National Bureau of Economic Research.
- Acemoglu D, Johnson S, Robinson JA. 2012. The colonial origins of comparative development: An empirical investigation: Reply. *The American Economic Review*, 102(6), 3077-3110.
- Acemoglu D. 2009. *Introduction to Modern Economic Growth*. Princeton, NJ: Princeton University Press.

- Aghion P, Schankerman M. 2004. On the Welfare Effects and Political Economy of Competition-Enhancing Policies. *The Economic Journal* 114, 800–824.
- Bassanini A, Nunziata L, Venn D. 2009. Job protection legislation and productivity growth in OECD countries. *Economic Policy*, 24(58), 349-402.
- Calderón C, Servén L. 2014. Infrastructure, growth, and inequality: an overview. *World Bank Policy Research Working Paper*, (7034).
- Cole MA, Neumayer E. 2006. The impact of poor health on total factor productivity. *Journal of Development Studies*, 42(6), 918-938.
- Comin D, Hobijn B. 2004. Cross-country technology adoption: making the theories face the facts. *Journal of Monetary Economics*, 51(1), 39-83.
- De Soto H. 2000. *The Mystery of Capital: Why capitalism triumphs in the West and fails everywhere else*. New York: Basic Books.
- IMF Report, 2016. IMF India Country Report No. 16/75, (<https://www.imf.org/external/pubs/ft/scr/2016/cr1675.pdf>)
- Indian Budget 2015-2016 (2015)Implementation of budget announcement 2015-2016. <http://indiabudget.nic.in/ub2016-17/impbud/impbud.pdf>
- Levine R. 2005. Finance and Growth: Theory and Evidence. In *Handbook of Economic Growth*, Aghion P, Durlauf SN (eds). Amsterdam: Elsevier.
- PPP India, 2005. Scheme and guidelines for India Infrastructure Project Development Fund, (http://www.pppinindia.com/pdf/guideline_scheme_IIPDF.pdf).
- Romer PM. 1996. Why, Indeed, in America? Theory, History, and the Origins of Modern Economic Growth. *The American Economic Review* 86 (2), 202–06.
- Sandhya GD, Mrinalini N, Nath P. 2014. Dynamism in S&T and the role of S&T and Innovation policies in China: Lessons for India. ISTIP Bulletin No.4. CSIR-NISTADS.
- Santosh Kumar.A.N, Vinay. K.B. 2010. Technology business incubators-India’s rejuvenating scenario in entrepreneurship development. *Journal of Information, Knowledge and Research in Business management and Administration*. ISSN:0975-671X|Nov 10 to Oct 11|Volume 1, Issue 2.
- Schwab K, Sala-i-Martin X. (Eds.). 2011. *The global competitiveness report 2011-2012*. Geneva: World Economic Forum.
- Skill development policy 2015. National Policy for Skill Development and Entrepreneurship, 2015. (<http://msde.gov.in/assets/images/Skill%20India/policy%20booklet-%20Final.pdf>)
- The official website of republic of China (26 May, 2016). Retrieved from URL <http://www.taiwan.gov.tw>
- WEF Report 2015. The 12 pillars of competitiveness. Global competitiveness report, 2014-15 (<http://reports.weforum.org/global-competitiveness-report-2014-2015/methodology>)
- Xavier S, Subramanian A. 2003. Addressing the natural resource curse: an illustration from Nigeria. *NBER Working paper*, 9804.