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Export Diversification and Competitiveness Level of Pakistan in South Asian Region

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Abstract: *This paper analyses Pakistan's competitiveness in the light of World Economic Forum's Global Competitiveness Index, which measures the level of competitiveness of the country. There are 12 pillars and 5 stages of development level on the basis of which every country is ranked for competitiveness level and placed within different five stages of development. This study restricts its analyses to south Asian countries, which fall in the 1st stage of development. The study found the majority of the variables of GCI comes through opinion polls for calculating the index. The study found a moderate relationship between export diversification and GCI for the selected countries.*

Keywords: Competitiveness; Export Diversification, Global Competitiveness Index, South Asia, Pakistan.

Introduction

The term competitiveness is used frequently for export-led growth. However, there is an ongoing debate on the measurement of competitiveness. There have been various proxies and indices which have been used as the competitiveness. These include Revealed Comparative, export level, export share, relative price and cost comparison, etc. IMD and World Economic Forum (WEF) have developed an index for country-level competitiveness. The latter has coverage for more countries for determining the level and rank of competitiveness.

There is a large consensus that Competitiveness is key to economic development. This term is associated with productivity and the World Economic Forum has defined several factors which determine productivity. This paper will evaluate the status of Pakistan's export competitiveness in light of the Global Competitiveness Index, which is developed by the World Economic Forum (WEF). The analysis would also consider export diversification for Pakistan's level of competitiveness. According to Mejia (2011), successful diversification of exports requires a strong competitive grounding in global markets.

The relationship between competitiveness and export performance has been discussing since long. However, scholars have not reached to any conclusion regarding a definition or calculation of proxy for competitiveness. Now a day, the Global Competitiveness Index is largely used by the scholars for competitiveness, although previously various proxies have

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been used for this purpose, like Blassa Index for Reveal Comparative Advantage, productivity level, Competitive Index by OECD, etc. GCI is available for all South Asian countries. And this paper would use GCI for analysis of competitiveness and export diversification of South Asian countries.

There is no empirical or descriptive analysis for the relationship between export diversification or at least not known to the author of this analysis. The data on GCI is available for a very short period of ten years, and this fact implies the author to prefer descriptive analysis.

Pakistan has set the objectives in its recent trade policies to move towards the upper level of development. The World Economic Forum has set some criteria for calculation of GCI for different countries on the basis of per capita income. The countries are grouped in five different levels of development and weights are assigned differently to every 12 pillars of competitiveness. Siddiqui (2018) mentioned the trade policies where the objective was to move from factor-driven to efficiency-driven economy. This shows the importance of competitiveness for the attainment of higher export level in the country.

The main objective of the paper is to conduct a descriptive analysis for seeking the relationship between competitiveness and export diversification. The data for GCI is available for a shorter time period and therefore, a time series analysis for the South Asian region is not sufficient. However, the study on the relationship between diversification and competitiveness level, where GCI is taken as a proxy for competitiveness, is not available or at least is not known to the author; therefore this paper can be considered a first paper to attempt to find this link.

Literature Review

Our review will be started with the concept of and measurement of competitiveness. Krugman (1994) has stated that the concept of competitiveness is meaningless in relation to national economies. Lall (2001) made some serious criticisms regarding GCI measurement and called it 'misleading'. He first disputed its assumption that the markets are efficient and policy intervention must be market-friendly. In developing countries, market failure called for selective responses. Second its broader definition of 'competitiveness' diverts this concept from direct competition between countries. He is of the view that this is a business strategy which has been transposed to the national level which could not work well. Most importantly, quantitative data (opinion surveys) are highly dubious, as the extensive use of the company's managers' responses, with many questions posed in an unclear manner. He, therefore, proposed for benchmarking of national competitive capabilities.

Klein (1988) summarized that the Competitiveness is determined through four factors; the labor wage rate, exchange rate, productivity and profit margins. These four factors determined the relative price which explains competitiveness. Cheptea, Gaulier, and Zignago (2005) concluded that the world market share of a particular country is considered as an indicator of international competitiveness, which is, in fact, depend upon structural factors.

Porter's concept of competitive advantage explains that firms are actually competi-

tive, not the nations. Porter considered the factors which are crucial for competitiveness as 'Diamond' are macroeconomic conditions, political environment, legal and social situation. In support of Porter's 'competitiveness diamond' Dunning (1992); Haddad, Fane, Nuansavanh, Brenton, and Schuler (2006) argued that productivity and local production determines its international competitiveness.

The term 'Trade competitiveness' is used by Brenton, Hoppe, and Newfarmer (2008), which proposed some economic and social factors, which need to be addressed by the government to improve export competitiveness. These factors are incentives, cost reduction and services together with the implementation of trade supporting policies.

Above all studies only focus on the measurement of the competitiveness at the national level. This is indicating a disagreement on the measurement of competitiveness. However, GCI can be considered a most comprehensive measurement as it has absorbed almost every economic and social variables which directly or indirectly affect productivity and hence competitiveness.

Now, the study would focus on the relationship between competitiveness and other economic variables, especially export diversification. Xia, Liang, Zhang, and Wu (2012) used Total Entrepreneurial Activities (TEA)and compared them with GCI's effect on economic growth for 40 developing countries and found that GCI has weaker predictability with regards to economic growth. Petrylė (2016) also proved that there is no relationship between the GCI scores and GDP growth of the respective countries. Her finding concluded that GCI scores do not demonstrate the resilience of countries to the economic crisis.

Farole, Reis, and Wagle (2010) analyzed the impact of competitiveness on various export strategy objectives. These include, export diversification, export growth and export sophistication. In his descriptive analysis, the author used productivity as a proxy for competitiveness and stated the quality up-gradation is the key route to competitiveness. While on the market diversification, the author defined that integrating into the new markets with existing products is proof that the product is competitive.

Pant and Panta (2009) analyzed the relationship between export diversification and competitiveness for Nepal. Their study uses two different proxies for competitiveness; Real Effective Exchange Rate (REER) and RCA, their analysis was purely descriptive and based on findings of REER and RCA the study made some suggestion to improve Nepal's export performance.

Schwab and Sala-i Martín (2017) showed that there is a strong link between higher competitiveness level and export diversification [1]. They have calculated the correlation between IMF diversification index and GCI scores of various countries for the period 2007-2010 and found a strong link between these indices. According to their calculation countries with high GCI rank have higher export diversification.

The above reviews showed that studies for the relationship between export diversification and competitiveness (GCI) have a descriptive analysis. The lack of empirical analysis may because of the availability of data on competitiveness for a shorter time period.

[1] Xavier Sala-i-Martin is the Chief Advisor of the Global Competitiveness Report. Most of the definition and explanations for the terms used in the Global Competitiveness Reports (especially 2015-16 and 2016-17) are taken from his work. Therefore any reference given as Schwab and Sala-i Martín (2016, 2017) implies that reference to Global Competitiveness Report 2015-16 or 2016-17.

Concept and Measurement of the Global Competitiveness Index

The World Economic Forum's conception of competitiveness is focused on a set of institutions and policies which are supposed to determine the productivity level of a country. There are two main indices which are expected to measure the country's competitiveness level, one estimated by WEF and the other by the IMD World Competitiveness Center. However, data for Pakistan is available in WEF's GCI listing only. Therefore this study analyses Pakistan's competitiveness level using the GCI dataset. There are 12 pillars of competitiveness, which are further divided into three sub-indexes; basic requirements (pillars 1-4), efficiency enhancers (pillars 5-10), and innovation and sophistication factors (pillars 11-12).

While measuring the overall index, the above stated three sub-indexes are assigned different weights, depending upon the development level of the economies. This development level is proxied by a country's per capita GDP and the share of raw material exports. The Global Competitiveness Report argues that these 12 pillars are not independent; every pillar reinforces the others for attaining a higher level of competitiveness. The Report has categorized countries in terms of different per capita GDP levels and assigned different weights to GCI sub-indices for the different GDP categories of countries. This weighting scheme is presented in Table 1.

Table 1
Sub-index weights and income threshold for different level of development

	Stages of Development				
	Stage -1 Factor Driven	**Transition Stage 1-2**	**Stage - 2 Efficiency Driven**	**Transition Stage 2-3**	**Stage - 2 Innovation Driven**
Per Capita GDP threshold (in US$)	**<2,000**	**2,000-2,999**	**3,000-8,999**	**9,000-17,000**	**>18,000**
Weight for basic requirements	60%	40%-60%	40%	20%-40%	20%
Weights for Efficiency Enhancer	35%	35%-50%	50%	50%	50%
Weight for Innovation and Sophistication Factor	5%	5%-10%	10%	10%-30%	30%

Data and Methodology

As stated above that this study would have descriptive analysis and finally see the correlation between the variables, competitiveness and export diversification of south Asian countries. For competitiveness overall GCI scores and for diversification commodity export diversification index released by the UNCTAD are used.

According to the GCI report 2016-17, four countries of the South Asian region, Pakistan, India, Bangladesh and Nepal are classified in stage-1, the Factor Driven, level of the development, while Bhutan and SriLanka are in transition from stage-1 and Stage-2 Efficiency Driven, respectively. This implies that Pakistan should be compared with the countries which are listed in stage-1 of the developmental stage; there are 35 such countries, including Pakistan, India, Bangladesh, Nepal, Cambodia, Kenya, and Tanzania, etc.

Since 60% weight is assigned to the first four pillars of the Index, therefore we will mainly focus on these four pillars. We start our discussion with the overall GCI for Pakistan over 2006-2016. We then present the 12 pillars of competitiveness on the basis of which the GCI index is developed.

Table 2
Rank of 12 GCI Pillars for Pakistan 2006-07 - 2015-16

	Pillars	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
1st	Institutions	77	81	95	104	112	107	115	123	123	119
2nd	Infrastructure	69	72	85	89	110	115	116	121	119	117
3rd	Macroeconomic environment	84	101	116	114	133	138	139	145	137	128
4th	Health and primary education	108	115	116	113	123	121	117	128	129	127
5th	Higher education and training	103	116	123	118	123	122	124	129	127	124
6th	Goods market efficiency	59	82	100	83	91	93	97	103	100	116
7th	Labor market efficiency	107	113	121	124	131	136	130	138	132	132
8th	Financial market development	55	65	71	64	73	70	73	67	72	99
9th	Technological readiness	85	89	100	104	109	115	118	118	114	113
10th	Market size	27	28	29	30	31	30	30	30	30	28
11th	Business sophistication	65	79	87	81	79	76	78	85	81	86
12th	Innovation	59	69	82	79	75	75	77	77	88	89
Overall GCI		**83**	**92**	**101**	**101**	**123**	**118**	**124**	**133**	**129**	**126**

Table 2 shows Pakistan's ranking for all 12 pillars of competitiveness and overall GCI ranking. There is no single pillar where Pakistan has improved its ranking during the last ten year period. There is some improvement in particular years for some pillars but this has not been sustainable. The 3rd pillar 'Macroeconomic environment' has shown more deterioration where Pakistan's rank has gone down from 84th in 2007 to 128th in 2016. Another pillar which shows a bleak picture is labour market efficiency, where Pakistan's ranking in 2015-16 is 132 as against 107 in 2006-07. This is the lowest ranking among all pillars. There are eight pillars out of 12, the ranking of which has improved during 2014-15 and 2015-16. These are Infrastructure, macroeconomic environment, labour market efficiency and technological readiness. The trends of change in pillars are shown in figure 1, which shows all the pillars are trending upward, which is a sign of deterioration. Only 10th pillar the Market size is showing almost stagnant status.

Figure 1
Rank of 12 GCI Pillars for Pakistan

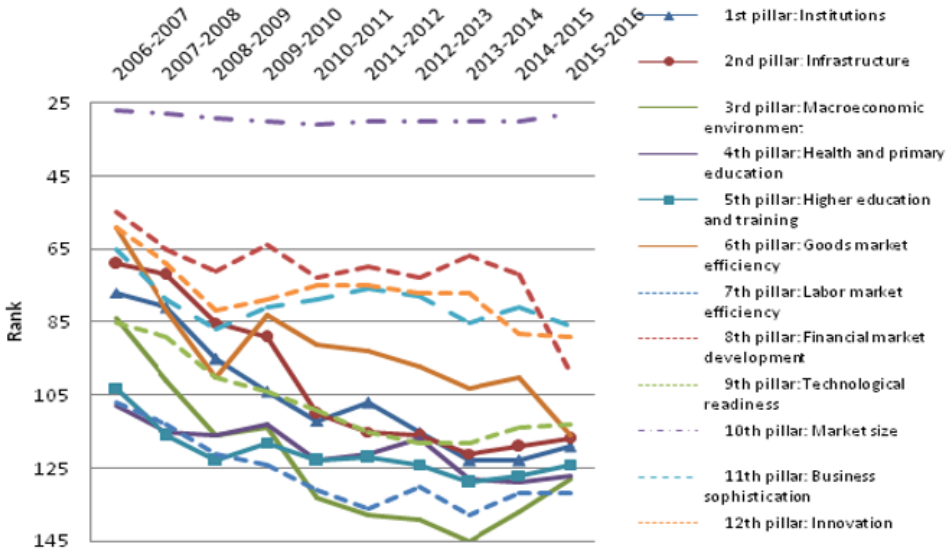


Table 3 shows that three pillars macroeconomic environment, health and primary education and market size with relatively highest scores but with decreasing trend. However, with regards to infrastructure, higher education and technological readiness, the scores are comparatively low. As compared to score in 2006-07 for higher education, technological readiness and market size have increased in 2015-16. However, scores for higher education and technological readiness are at the lowest among all 12 pillars. Among these only three pillars, Higher education, Technological readiness and Market size, have shown positive average annual growth. While the other nine pillars, and overall GCI scores, are showing a negative average annual growth rate. The third pillar Macroeconomic environment has shown the highest negative average annual growth rate, while Technological readiness has been the best performer having the highest average annual growth rate. It is important

Table 3
GCI scores of 12 GCI Pillars for Pakistan

Pillars		**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**Average growth**
1st	Institutions	3.44	3.66	3.51	3.31	3.34	3.36	3.34	3.23	3.21	3.27	-0.5
2nd	Infrastructure	3.15	3.22	2.96	3.06	2.75	2.77	2.73	2.7	2.66	2.71	-1.56
3rd	Macroeconomic environment	4.57	4.37	4.17	3.81	3.19	3.62	3.06	2.89	3.24	3.51	-2.33
4th	Health and primary education	4.41	4.09	4.03	3.95	4.27	4.36	4.52	4.26	4.02	4	-0.97
5th	Higher education and training	2.8	2.72	2.74	2.86	2.91	3.01	2.99	2.76	2.76	2.82	0.14
6th	Goods market efficiency	4.2	3.95	3.9	4	3.94	4	4.02	3.99	4.08	3.95	-0.65
7th	Labor market efficiency	3.7	3.86	3.79	3.52	3.45	3.47	3.65	3.46	3.43	3.34	-1.06
8th	Financial market development	4.29	4.32	4.24	4.25	4.09	4.03	4.04	4.04	3.99	3.47	-2.24
9th	Technological readiness	2.54	2.77	2.75	2.87	2.94	2.94	2.9	2.9	2.83	2.88	1.46
10th	Market size	4.82	4.56	4.58	4.67	4.63	4.67	4.67	4.7	4.75	4.96	0.35
11th	Business sophistication	3.94	3.85	3.79	3.8	3.73	3.8	3.82	3.83	3.85	3.73	-0.59
12th	Innovation	3.19	3.15	2.99	2.98	3.03	3.1	3.11	3.13	3.12	3.14	-0.15
		3.82	**3.77**	**3.65**	**3.58**	**3.48**	**3.58**	**3.52**	**3.41**	**3.42**	**3.45**	**-1.11**

to note that the first four pillars which have been given the highest weightage (60%) have shown a negative average annual growth.

Figure 2
GCI Scores of 12 GCI Pillars for Pakistan

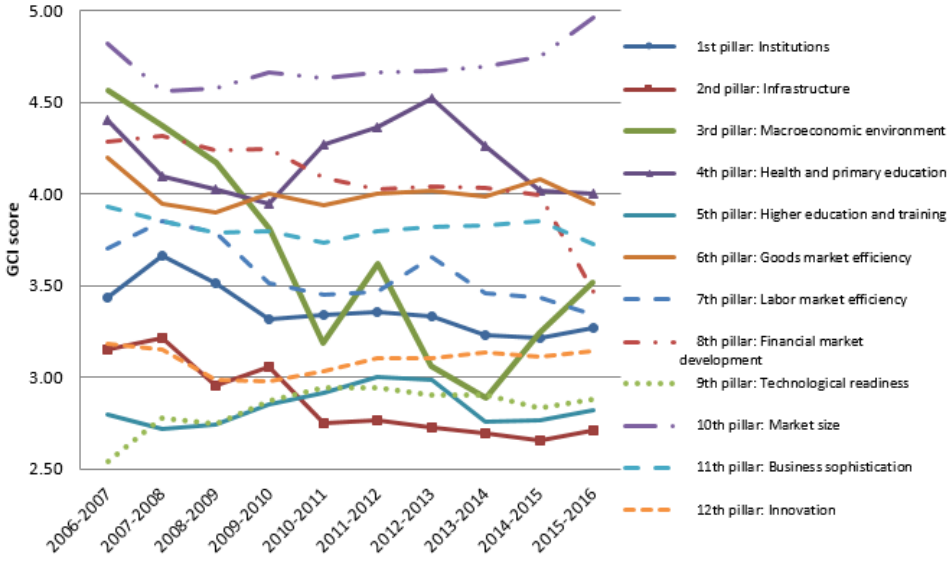


Figure 2 shows that the market size score is highest among all and has an approximately flatter curve, while the infrastructure score was at the lowest during the last 6 years. The macroeconomic environment score showed the most deterioration and continuous to show a downward trend. The score of the fourth pillar Health and Primary education can be seen to be fluctuating after every three years. The first pillar, Institutions, shows a slightly negative trend. The first four pillars, which are given 60% weights, show an overall negative trend.

Table 4
Global Competitiveness Index

Years	RN-Pak	SC-Pak	RN-Ind	SC-Ind	RN-SL	SC-SL	RN-BD	SC-BD
2006-07	83	3.816	42	4.472	81	3.847	92	3.708
2007-08	92	3.77	48	4.334	70	3.989	107	3.548
2008-09	101	3.653	50	4.326	77	4.02	111	3.508
2009-10	101	3.582	49	4.303	79	4.009	106	3.551
2010-11	123	3.484	51	4.328	62	4.247	107	3.644
2011-12	118	3.579	56	4.305	52	4.327	108	3.731
2012-13	124	3.519	59	4.321	68	4.191	118	3.647
2013-14	133	3.41	60	4.28	65	4.218	110	3.707
2014-15	129	3.418	71	4.207	73	4.19	109	3.719
2015-16	126	3.445	55	4.311	68	4.214	107	3.763

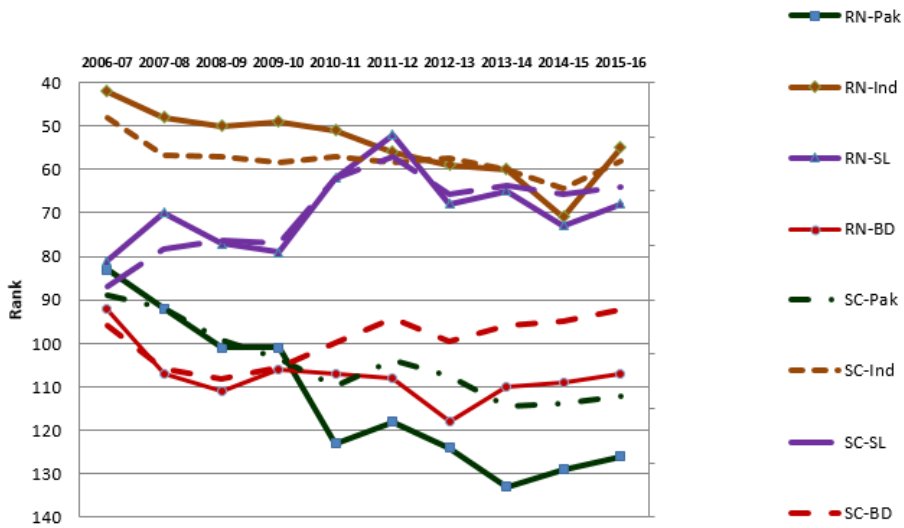
RN: GCI Rank
SC: GCI Score
Pak: Pakistan
Ind: India
SL: Sri Lanka
BD: Bangladesh

As mentioned above Pakistan, India and Bangladesh are at the same stage of develop-

ment level (1st stage - factor-driven), table-4shows overall GCI rank and scores for 4 Tier Factor Driven countries of South Asia.

Table-4 shows overall GDI rank and scores of the 4 South Asian Countries. In terms of ranking, India is the most competitive country in South Asian countries. However, its ranking has deteriorated over the last ten years. Pakistan is at the lowest rank among the stage-1 South Asian countries. It had better ranking than Bangladesh during 2006-07 and 2009-10, but after this year, Bangladesh has improved its ranking.

Figure 3
Global Competitiveness Index



Sri Lanka has improved both its ranking and GCI scores over the last ten years. India and Pakistan have experienced a decline in their GCI score. This decline is greater in Pakistan, while India's decline is minimal. Bangladesh's GCI score is almost constant. Figure 3 (rank is on the left vertical axis and the score is at the right vertical axis) shows that Pakistan's score is increasing, but it's rank position is declining. For Sri Lanka both the score and position are improving, for India, both graphs show a slight negative trend and Bangladesh's score shows a positive trend while ranking shows a slight negative trend.

We have also calculated a correlation coefficient between GCI scores and export diversification index for the year 2015 for all groups at all 5 stages of the level of development. We have taken data for the GCI index from the World Economic Forums database and export concentration index from the UNCTAD dataset for the year 2015. A negative correlation coefficient would indicate a positive correlation between GCI and export diversification. A coefficient value near 0.3 usually indicates a weaker relationship, while closer to 0.5 indicates a moderate and 0.7 a strong correlation. Table 5 shows correlation for different groups of countries divided as per the GCI stage of development.

Table 5
Correlation between Export Concentration Index and Global Competitiveness Index of countries at different stage of development in 2015

1	Stage-1	-0.4077
2	Transition to Stage-2	-0.4428
3	Stage-2	-0.2927
4	Transition to Stage-3	0.0264
5	Stage - 3	-0.1942
	All Countries	-0.392

Table 5 shows that countries which are at the transition from the stage-1 level have the highest correlation (though moderate), followed by the countries at stage-1, which also have almost the same moderate level of correlation. Countries at stage-2 show a weaker correlation while countries at the transition from stage-2 and stage-3 have a very low level of correlation implying almost no correlation with diversification. Countries at stage-3 or transition from stage-2 are mostly OECD or industrialized countries. This result is consistent with the outcome of some other study (such as Cadot, Carrere and Kahn 2011), which suggest that countries having high per capita GDP are more concentrated export profile and countries with a low or medium level of per capita GDP have a higher level of export diversification.

Interestingly, the correlation between GCI score and HHI index for Pakistan during the 10 year period showed a different result. We have found a strong positive correlation between these indices for Pakistan. It is important to mention that HHI, being a concentration index, a positive relationship with any variable would indicate a negative relationship with export diversification. Therefore this result implies a negative correlation between GCI score and commodity export diversification. This result indicates that, in the case of Pakistan, when the GCI score is increased, a decrease in product export diversification is also observed. Table 6 is showing the correlation coefficient value and trend movement of both these indexes for Pakistan. A simple graph showing an upward trend with HHI implies a downward trend of export diversification.

Table 6
Graphical relationship between GCI and HHI for Pakistan (2006-07 to 2015-16)

Years	**GCI**	**HHI**
2006-07	3.8162	0.2277
2007-08	3.7703	0.2103
2008-09	3.6528	0.2074
2009-10	3.5819	0.202
2010-11	3.4837	0.1994
2011-12	3.5788	0.1841
2012-13	3.5194	0.1829
2013-14	3.4102	0.1894
2014-15	3.4183	0.193
2015-16	3.4454	0.2024
Correlation Coefficient: 0.737		
Authorís own calculation		

Sub-Indices - Basic Requirements

As stated earlier 3 major economies of South Asia, Pakistan, India and Bangladesh have been classified in the sub-index of 'Basic Requirement', where the first four pillars of GCI are given the weight of 60%. These economies are classified at the stage - 1 development level.

There are 35 countries which are placed at this level. Table 7 below shows the overall GCI ranking of some selected countries which are listed in the stage-1 of the development level. The Table shows India is at the top among all 35 countries of the list, followed by Rwanda, whose global GCI ranking in 2012-16 was 55 and 58, respectively. Nepal is at number 9 and ranked 100, while Bangladesh and Pakistan are at number 11 and 23, respectively having GCI rank 107 and 126, respectively. The table shows that among South Asian countries, India is at the top while Pakistan is at number, 23 (in 35), which is among the lowest ranks in the list. However, Nepal and Bangladesh which are the Least Developing Countries (LDCs) are at number 9 and 11 in the list of Stage-1 of the developmental level.

Table 7
GCI ranks of selected countries of stage-1 developmental level

		2015-16	2014-15	2013-14	1012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
1	India	55	71	60	59	56	51	49	50	48	42
2	Rwanda	58	62	66	63	70	80				
3	Tajikistan	80	91		100	105	116	122	116	117	96
4	Lao PDR	83	93	81							
5	Cambodia	90	95	88	85	97	109	110	109	110	105
9	Nepal	100	102	117	125	125	130	125	126	114	104
10	Kyrgyz Republic	102	108	121	127	126	121	123	122	119	110
11	Bangladesh	107	109	110	118	108	107	106	111	107	92
23	Pakistan	126	129	133	124	118	123	101	101	92	83

Sub-Indexes Analysis

We will analyze the trend and performance of the GCI sub-indices in this section.

First Pillar Institutions

The Pillar consists of 21 indexes relating to property rights, security, corruption, accountability, public sector organization performance, and private sector / corporate ethics and governance. Schwab and Sala-i Martín (2016, 2017) argued that firms, individuals and governments work together under a set of rules and regulations. This interaction determines the quality of the institutions and impact on growth and competitiveness.

In our literature review section, we referred to the study by Balavac and Pugh (2016) where institutions were considered as an important determinant of output growth. In its study institutions were proxied by political rights, which show a significant and positive relationship with output volatility. Adam Smith (1776) mentioned the justice system and governance as a key determinant for economic growth. The Global Competitiveness Report argued that institutions set binding of rules and regulations mechanisms for economic

activities. The Report discussed various empirical studies where the role of institutions is shown for growth of productivity (North & Thomas, 1973).

Another fundamental fact which Global Competitiveness Report 205-16 identified is the security situation of the country. There is much considerable work such as Detotto and Otranto (2010); Detotto and Pulina (2013), which conclude that crime in society reduces economic performance through the channels of discouragement to investment, reduction in the competitiveness of the firms and relocation of resources. This situation can only be resolved through effective government institutions. The Report identifies three basic characteristics for the quality of effective institution; (1) absence of corruption and political influences, (2) efficiency in the public sector and (3) independent judiciary. Additionally, corporate governance is also a key for determining productivity level.

Table 8
Ranking of 1st Pillar of GCI - Institutions

Stage-1 ranking		2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
6	India	60	70	72	70	69	58	54	53	48	37
20	Nepal	103	120	127	123	124	130	123	120	119	98
24	Pakistan	119	123	123	115	107	112	104	95	81	77
29	Bangladesh	132	131	131	127	112	115	122	127	126	115

Table 8 shows the ranking of the first pillar of the GCI index for South Asian countries. India was at position 6 among the stage-1 and ranked 60 at global GCI ranking. Pakistan's global ranking was 119th and at position 24th among the countries of stage-1 development level. The country is only above the level of Bangladesh among the 4 South Asian countries. It is important to note that all four South Asian countries have almost the same ranking over the last ten years, although other ranking positions were changing during the last 10 years. It is noticeable that Pakistan's position has deteriorated for the ranking of this GCI pillar, as has that of all the other from South Asian countries.

Second Pillar - Infrastructure

There are nine different indexes, which are broadly divided into transport infrastructure, and electricity and telephony infrastructure. Schwab and Sala-i Martín (2016) argued that a high-quality road, railways, ports and air transports is a guarantee of security and in time delivery of goods and services to the markets. Furthermore, uninterrupted electricity supply and efficient telecommunication networks increase economic activities.

The GCI report assesses the quality of transport infrastructure which includes both international and domestic transport networks. In addition to the physical infrastructure, digital infrastructure is also taken into consideration. Franklin, Stam, and Clayton (2009); Brynjolfsson, Hitt, and Kim (2011) have shown that Information and Communication Technology (ICT) improve productivity through facilitating innovation and providing complete information to the decision-makers. Aschauer (1989) has proved that the availability and public investment in the infrastructure of streets, airports, mass transit, highways, and water and sewerage system, etc. improve productivity.

Table 9
Ranking of second Pillar of GCI - Infrastructure

Stage-1 ranking		2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
1	India	81	87	85	84	89	86	76	72	67	62
15	Pakistan	117	119	121	116	115	110	89	85	72	69
19	Bangladesh	123	127	132	134	134	133	126	122	120	100
27	Nepal	131	132	144	143	141	139	131	132	128	117

Table-9 shows that the Ranking of the countries of the stage-1 development level has shown negative development. India though, has the top ranking among stage-1 countries but gradually has decreased in the ranking. Similar is the case with other South Asian countries. Bangladesh and Nepal have almost similar rankings during the period of ten years, while Pakistan which has second pillar ranking of 117th and is at 15th position among stage-1 developmental level, has shown a deteriorating trend. The country has seen a lowering of its ranking from 72 to 117.

Third Pillar - Macroeconomic Environment

This pillar consists of indicators namely, government budget balance, gross national savings, inflation, government debt and country credit rating. GCI assesses the macroeconomic stability in the context of its impact on productivity only.

GCI considers low inflation is the first element of a stable macroeconomic environment. However, they agreed that empirical research found inflation has a nonlinear relationship with economic growth (Omay & Kan, 2010; Seleteng, Bittencourt, & Van Eyden, 2013). These research studies found that to a certain level there a positive relationship; however, afterward the relationship becomes negative. The second element of a stable macroeconomic environment is uncertainty about public finance. Fischer (1993) argued that a high level of public debt implies budget deficits. This phenomenon further creates a perception of economic instability. The country's credit rating reflects a nation's ability and readiness to services its financial (external and internal) commitments. Credit rating agencies, while assign rating, consider a combination of economic and social and political factors. These ratings are useful for countries to acquire public debt. The researchers have analyzed its importance mostly for the performance of stock markets and capital flows. Longstaff, Pan, Pedersen, and Singleton (2011) are of the view that change in sovereign credit affects the cost of and flow of capital. Chen, Chen, Chang, and Yang (2016) identified that change in the credit ratings of developing countries substantially responded to their per capita GDP via capital outflow and interest rate channel. Negative credit rating change would lead to lower yield on sovereign bonds stimulate capital outflow and consequently, the country experiences poor economic growth.

Table 10
Ranking of third Pillar of GCI - Macroeconomic environment

Stage-1 ranking		2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
1	Nepal	37	37	41	56	50	86	86	90	85	76
3	Bangladesh	49	72	79	100	75	80	84	101	87	69
17	India	91	101	110	99	105	73	96	109	108	86
31	Pakistan	128	137	145	139	138	133	114	116	101	84

Above table 10 shows countries from South Asia which are listed in the stage-1 development level have not shown impressive performance. Nepal, which has rank 37 is at the top in the list. The country has improved its ranking from 90th ranking, in 2007-08 to 37 in 2015-16. Bangladesh is 3rd, while India and Pakistan are at the 17th and 31st position, respectively, in the list of stage-1 countries.

Only Pakistan's ranking is seen to have declined during the last 10 year period, its rank was 84 in 2006-07, which fell to 145 (among 148 countries) in 2013-14 and gradually rose to 128th in 2015-16. This implies that GCI assessment for Pakistan about its macroeconomic environment which improves productivity, is at very low.

Fourth Pillar - Health and Primary Education

This pillar consists of ten indexes, among which eight are related to health and two related to primary education. Schwab and Sala-i Martín (2016) argued that healthy workers are highly important for a country's productivity and competitiveness. Unhealthy workers are inefficient and perform below the desired level of productivity. Similar is the case with basic primary education, which improves the efficiency and productivity of the workers.

There are various empirical research available (Cole & Neumayer, 2006; UNIDO (United Nations Industrial Development Organization), 2007; Tompa, 2002) which show that better health improves productivity. Therefore healthier nations would have a higher productivity level. Education is the other important factor which improves productivity level. Barro (2001) found a direct and significant relationship between year of schooling and economic growth and productivity.

Table 11
Ranking of fourth Pillar of GCI - Health and Primary education

Stage-1 ranking		2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07
1	Nepal	75	75	88	109	115	109	106	107	107	102
2	Tajikistan	78	83		87	91	97	99	101	104	94
3	India	84	98	102	101	101	104	101	100	101	92
9	Bangladesh	101	102	104	103	108	106	105	105	105	97
24	Pakistan	127	129	128	117	121	123	113	116	115	108

Table 11 shows ranking for 4th pillar, according to which among the countries of Stage-1 development Nepal is at the top ranking, Tajikistan and India are at 2nd and 3rd position, respectively in this group. These three countries have improved their ranking. While Bangladesh and Pakistan, which are at position 9 and 24 in stage-1 and 101 and 127 in the world ranking, have deteriorated their ranking over the last ten years.

We have also calculated a correlation between the pillars (first four) and export concentration for the countries of stage-1 development for the year 2015. The results are given in table 11. Table 12 shows the correlation between Export Diversification (HHI index) and scores of GCI's four pillars, separately. The result shows a moderate relationship of export diversification with Health/Education and infrastructure, while for the macroeconomic environment there is a weak correlation. However, with institution, the correlation is closed to nil. All these four pillars for stage-1 countries have a moderate or weak correlation with export diversification. This result is very much consistent with the result given in table

8.5, which shows an overall moderate correlation between overall GCI and HHI for the countries of stage-1 developmental level.

Table 12
Correlation between Export Diversification and first four pillars of GCI

	Pillars	Correlation
4th	Health/Education	-0.4171
2nd	Infrastructure	-0.3269
3rd	Macroeconomic	-0.2263
1st	Institution	-0.1195

Note: Negative relationship shows a positive relationship with export diversification.

Table 12 shows the correlation between Export Diversification (HHI index) and scores of GCI's four pillars, separately. The result shows a moderate relationship of export diversification with Health/Education and infrastructure, while for the macroeconomic environment there is a weak correlation. However, with institution, the correlation is closed to nil. All these four pillars for stage-1 countries have a moderate or weak correlation with export diversification. This result is very much consistent with the result given in table 8.5, which shows an overall moderate correlation between overall GCI and HHI for the countries of stage-1 developmental level.

There are some serious considerations or issues with the measurement of the competitiveness issues and its impact on economic development. We have mentioned earlier that the GCI has 114 variables under ten different pillars. Our analysis focused on four pillars of GCI which has 60% of the weights for calculating GCI for the countries listed in Stage-1 of development level.

It is very important to note that first pillar institution, which consists of 21 different variables, is purely measured on the basis of opinion surveys, while second pillar infrastructure, consist of 9 variables out of which only three variables (i.e., 1. available airline seats kilometers, 2. mobile telephone subscription and 3. fixed telephone lines) have numeric data. The third pillar macroeconomic environment, which has five economic variables, have numeric data. The fourth pillar Health and Education have five numeric variables while the other five have measured through opinion surveys. This implies that countries of stage-1 development level are given 60% of the scores for GCI on the basis of total 40 variables out of which 27 based on opinion surveys. The report 2015-16 reveals that there were 236 respondents in India, 56 in Bangladesh and 114 in Pakistan.

Conclusion

The above analysis shows a moderate correlation between competitiveness and export diversification. This correlation is relatively stronger for the countries which are classified at stage-1 and transition from the stage-1 level of development. However, for Pakistan, this relationship was found stronger and negative with export diversification. This result confirms that the analysis of Competitiveness is relevant to the export diversification analysis. The analysis shows that Pakistan, India, Nepal and Bangladesh are in the same group

which the World Economic Forum has divided according to their per capita GDP. These countries are placed in Stage-1 of the level of development, where 60% weight is assigned to the first four pillars out of 12 of the competitiveness index. These pillars are (1) institutions, (2) infrastructure, (3) macroeconomic environment and (4) health and primary education. These four pillars considered basic requirements for competitiveness. Pakistan is at a very low ranking with regard to GCI scores, although it is gradually improving its score during the last 3 years, but the pace of the development is very marginal. In addition, Pakistan's rank position in all the four pillars indices has not changed significantly during the last 10 years, hence its competitiveness is stagnant. Not only Pakistan, but other countries of the region have shown almost the same situation. This is especially in the case of India the competitiveness index is not very impressive, it's export performance has been outstanding with exports growing at an average annual growth rate of 11.5% during 2006 to 2015, which is one of the highest export growth in the world.

The study illustrates that competitiveness, as measured by the GCI, is not necessarily a major determinant of export performance. This may because of reason that the components of GCI global indices and sub-indices not accurately measuring competitiveness or is competitiveness a relatively minor determinant of national export performance.

References

Aschauer, D. A. (1989). Is public expenditure productive? *Journal of Monetary Economics*, *23*(2), 177–200.

Balavac, M., & Pugh, G. (2016). The link between trade openness, export diversification, institutions and output volatility in transition countries. *Economic Systems*, *40*(2), 273–287.

Barro, R. J. (2001). Human capital and growth. *American Economic Review*, *91*(2), 12–17.

Brenton, P., Hoppe, M., & Newfarmer, R. (2008). *Economic partnership agreements and the export competitiveness of Africa*. The World Bank.

Brynjolfsson, E., Hitt, L. M., & Kim, H. H. (2011). Strength in numbers: How does data-driven decisionmaking affect firm performance? working paper.

Chen, S.-S., Chen, H.-Y., Chang, C.-C., & Yang, S.-L. (2016). The relation between sovereign credit rating revisions and economic growth. *Journal of Banking & Finance*, *64*, 90–100.

Cheptea, A., Gaulier, G., & Zignago, S. (2005). World trade competitiveness: A disaggregated view by shift-share analysis. *CEPII*, *23*, 1-47.

Cole, M. A., & Neumayer, E. (2006). The impact of poor health on total factor productivity. *The Journal of Development Studies*, *42*(6), 918–938.

Detotto, C., & Otranto, E. (2010). Does crime affect economic growth? *Kyklos*, *63*(3), 330–345.

Detotto, C., & Pulina, M. (2013). Assessing substitution and complementary effects amongst crime typologies. *European Journal on Criminal Policy and Research*, *19*(4), 309–332.

Dunning, J. H. (1992). The competitive advantage of countries and the activities of transnational corporations. *Transnational Corporations*, *1*(1), 135–168.

Farole, T., Reis, J., & Wagle, S. (2010). Analyzing trade competitiveness. *A Diagnostics Approach.(World Bank Policy Research Working Paper, WPS5329). Washington DC: World Bank*.

Franklin, M., Stam, P., & Clayton, T. (2009). ICT impact assessment by linking data. *Economic & Labour Market Review*, *3*(10), 18–27.

Haddad, M., Fane, G., Nuansavanh, K., Brenton, P., & Schuler, P. (2006). Building export competitiveness in laos: Background report. *Washington, DC: World Bank*.

Klein, L. R. (1988). Components of competitiveness. *Science*, *241*(4863), 308–313.

Krugman, P. (1994). Competitiveness: A dangerous obsession. *Foreign Aff*, *73*, 28-44.

Lall, S. (2001). Competitiveness indices and developing countries: An economic evaluation of the global competitiveness report. *World Development*, *29*(9), 1501–1525.

Longstaff, F. A., Pan, J., Pedersen, L. H., & Singleton, K. J. (2011). How sovereign is sovereign credit risk? *American Economic Journal: Macroeconomics*, *3*(2), 75–103.

North, D. C., & Thomas, R. P. (1973). *The rise of the western world: A new economic history*. Cambridge University Press.

Omay, T., & Kan, E. Ö. (2010). Re-examining the threshold effects in the inflation–growth nexus with cross-sectionally dependent non-linear panel: Evidence from six

industrialized economies. *Economic Modelling*, *27*(5), 996–1005.

Pant, B., & Panta, R. K. (2009). Export diversification and competitiveness: Nepal's experiences. *NRB Economic Review*, *21*, 52–78.

Petrylė, V. (2016). Does the global competitiveness index demonstrate the resilience of countries to economic crises? *Ekonomika (Economics)*, *95*(3), 28–36.

Schwab, K., & Sala-i Martín, X. (2016). The global competitiveness report 2015–2016: Full data edition..

Schwab, K., & Sala-i Martín, X. (2017). The global competitiveness report 2016–2017: Full data edition..

Seleteng, M., Bittencourt, M., & Van Eyden, R. (2013). Non-linearities in inflation–growth nexus in the sadc region: A panel smooth transition regression approach. *Economic Modelling*, *30*, 149–156.

Tompa, E. (2002). The impact of health on productivity: Empirical evidence and policy implications. *The Review of Economic Performance and Social Progress*, *2*.

UNIDO (United Nations Industrial Development Organization). (2007). *Determinants of total factor productivity: A literature review. research and statistics branch staff Working Paper No. 02/2007. Vienna: UNIDO.*

Xia, R., Liang, T., Zhang, Y., & Wu, S. (2012). Is global competitive index a good standard to measure economic growth? A suggestion for improvements. *IJSS*, *8*(1), 45–57.