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**MEASURING INTRA-REGIONAL INCOME INEQUALITY OF GDP PER CAPITA DURING 1970-2011: A STUDY ON SOUTH ASIA**

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**ABSTRACT**

The present paper has looked into the disparities in GDP per capita of SAARC (South Asian Association for Regional Cooperation) nations using alternative measures of income inequalities. The formation of SAARC as a regional bloc in December 1985 consisting India, Bangladesh, Pakistan, Bhutan, Srilanka, Maldives and Nepal had the basic objective of enhancing economic growth of the member countries by encouraging intra-regional trade. Over three decades later, today, when we evaluate the progress of such regional arrangement, it is not found satisfactory. Comparison of intra-regional trade in SAARC with that in other regional trading blocks across the world reveal the same. Under such circumstances, effort to find out the possibilities for consolidation of the integration process in near future becomes imperative. One possible way to judge it is to check the trend of economic inequality existing among these nations over the years. In relation to that different measures of economic inequality viz. co-efficient of variation, gini index, Atkinson index, Williamson index, coulter coefficient, hoover index and theil index have been estimated for the years 1970 to 2011 which confirms declining trend in inequality among these nations. The results of the inequality measures support the declining disproportions among SAARC and advocate for utilizing the potential scope for further consolidation of the region.

**JEL Classification:** F15

**Keywords:** GDP Per Capita, Gini Index, Inequality, Regional Bloc, SAARC, Williamson Index.

## **1. INTRODUCTION**

The South Asian Association for Regional Cooperation (SAARC) has been formed to felicitate the economic development of the member countries and to take away the internal gaps in the growth of per capita income among these countries. India, Nepal, Bhutan, Pakistan, Srilanka, Maldives and Bangladesh are the seven countries which made the association on 8<sup>th</sup> December 1985. Afghanistan has joined these countries later in 2008, making it a collaboration of eight countries now. The key goal of this economic integration was to lessen the disproportions in the level of development of these member countries. The success of economic integration of SAARC was low in its early period but in the post liberalisation era, the rate of convergence of SAARC countries has been reasonable. Regional economic integration with trade liberalisation can help a region to grow by enhancing intra-regional trade. The member countries in the region can bring benefits to each other and can ensure economies of scale which will further lead to a shift in their production function. The sole objective behind the formation of regional bloc is not only to heighten intra-regional trade but to upsurge economic growth among member countries and also to strengthen their international competitiveness. So, the broader objective of formation of SAARC was to accelerate economic growth, cultural growth, to promote peace and harmony among the member countries and to ensure a minimum standard of living.

Review of the existing literatures on SAARC cooperation and various reports on the same raise the necessity of performing wide-ranging research on the usefulness of the cooperation. So now the question will be: is SAARC still relevant today? SAARC, as a regional bloc, has huge potentials. But these potentials have been hindered even after 30 years of its inception due to the lack of strong bilateral relations in the areas of geographical, economic, and strategic dimensions among eight member countries of SAARC. One major issue contributed to the failure of SAARC is the rising political conflicts between India and Pakistan. Another important reason can be the size of the economies forming the regional integration. Unlike other such groupings namely European Union (EU) or the Association of South East Asian Nations (ASEAN) which consists of similar economies, in SAARC India is the dominant economy which consists nearly 60 per cent of the total population, area, and GDP of SAARC. So, there have been huge differences in GDP per capita of these member countries of SAARC. In this regard, India can play a vital role in facilitating intra-regional trade which can prompt the process of development of each member country of SAARC as it is the only member which shares border with all member countries except Afghanistan. Again, no other country shares a border with any other SAARC countries except India. In both the way it shows the sole importance of India among all the SAARC members. The success of SAARC depends on the willingness of member countries to eliminate their bilateral differences and move forward to implement all the policy initiatives that were there in their summit proposals which also included the abolition of all the trade barriers and to

increase the competitiveness of the member countries to the world economy. The question whether SAARC is a failure or not cannot be answered simply with respect to the overall success of SAARC in its cooperation initiatives. The objective behind the formation of SAARC was not only to be successful as a regional bloc but also to ensure similar level of economic growth for each member. Though it started with unequal size of economies it can be argued from the literature that countries have been converging over the years in terms of GDP per capita. This fact also manifests the continuing consolidation of these economies. In this context, the present paper efforts to investigate the scenario of income inequalities in terms of GDP per capita between these member countries – whether the inequality has reduced over time or not. The declining trend in inequalities will assure the possibility of further consolidation of these economies which can in turn add to the success of forming the economic integration of SAARC. Many studies have also been conducted on different issues related to SAARC which also ensures further the importance of SAARC as a regional cooperation. In their paper (Ratna and Sharma, 2016, pp. 181-199) they examined the possible effects of regional integration between ASEAN and SAARC on various sectors as well as on macroeconomic and trade areas. Again, both the authors (Ekanayake and Perera, 2015, pp.75S-101S), in their article, have found that the regional investment framework is the only useful determinant in attracting FDI for member countries of SAARC. In a paper by (Chary and Bohara, 2010, pp.21-30), the causal relationships between income, energy consumption and carbon emission has been evaluated in major SAARC countries and it has been found that the cause of the emissions are income along with energy consumption.

Different techniques of measuring income inequalities have been applied in the literature to measure the inequality in GDP per capita. In their paper, (Mansoor Mushtaq et al., 2014, pp.1-10) have applied Gini coefficient to measure income inequality. Both Atkinson index and Theil index have been mentioned as a measure of income inequality by Frank Cowell in his discussion paper ‘Measurement of Inequality’. (Lusambo L P, 2016, pp. 1-15), in his work, has used Hoover coefficient and Theil index for measuring inequalities. Theil’s index has been considered as one of the popular generalised entropy measures. Other common Generalised Entropy (GE) measures are the mean logarithmic deviation, half the square of the coefficient of variation and Atkinson’s measure of inequality. Theil’s measure is the most popular of the class of GE measures. It is applied in several studies on global income distributions including the recent works of (Milanovic and Yitzhaki, 2002, pp. 155-178); (Barro and Sala-i-Martin, 2003, p. 672) and (Chotikapanich et al., 2006, pp. 127-147). In their paper, (Choudhury and Haldar, 2009, pp. 258-263) examined regional disparities among Indian states using different income inequality measures like Gini coefficient, coefficient of variation, coulter coefficient, Hoover index, Theil index, Atkinson index and Williamson index. The present paper has considered these measures to get an estimate of inequalities in GDP per capita for SAARC countries over specified period.

## 2. DATA AND METHODOLOGY

Data on GDP per capita for the SAARC countries namely India, Bangladesh, Pakistan, Srilanka, Nepal, Bhutan and Maldives during the years 1970-2011 has been collected from World Economic Outlook (WEO), IMF. Since the data is in current prices (US \$), base shifting method has been used to convert the data from current prices to constant prices. For the unavailability of data for the specific period considered, Afghanistan has not been included in the present study. For measuring income inequality seven commonly used measures like coefficient of variation, Gini coefficient (population weighted and unweighted), Theil index, Atkinson index, Williamson index, Coulter coefficient and Hoover coefficient have been considered in the present study.

$$\text{Coefficient of variation (unweighted) (CV)} : \frac{1}{y} \left[ \frac{1}{n} \sum_{i=1}^n (y_i - \bar{y}) \right]^2$$

$$\text{Theil index (TE)} : \frac{1}{n} \sum_{i=1}^n \log \frac{\bar{y}}{y_i} \left[ \frac{1}{2} \sum_{i=1}^n \left( \frac{A_i y_i}{A_{tot} y} - \frac{A_i}{A_{tot}} \right)^2 \right]^{\frac{1}{2}}$$

$$\text{Hoover coefficient (HC)} : \frac{1}{2} \sum_{i=1}^n \left| \frac{A_i y_i}{A_{tot} y} - \frac{A_i}{A_{tot}} \right|$$

$$\text{Gini (U) (unweighted)} : \frac{1}{2n^2 \bar{y}} \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|$$

$$\text{Williamson index (WI)} : \frac{1}{\bar{y}} \left[ \sum_{i=1}^n (y_i - \bar{y})^2 \frac{A_i}{A_{tot}} \right]^{\frac{1}{2}}$$

$$\text{Atkinson index (AI)} : 1 - \left[ \frac{1}{n} \sum_{i=1}^n \left[ \frac{y_i}{\bar{y}} \right]^{1-e} \right]^{\frac{1}{1-e}}$$

$$\text{Coulter coefficient (CC)} : \left[ \frac{1}{2} \sum_{i=1}^n X_i \left( \frac{A_i y_i}{A_{tot} \bar{y}} - \frac{A_i}{A_{tot}} \right)^2 \right]^{\frac{1}{2}}$$

Here  $A_i$  and  $A_j$  are the population in regions  $i$  and  $j$  respectively and  $A_{tot}$  is the national population.  $Y_i$  and  $Y_j$  are the per capita income of region  $i$  and  $j$ , respectively.  $\mu$  is a country's per capita mean income.  $n$  is the number of regions.  $e$  stands for inequality aversion parameter.  $e$

is the standard Atkinson's preference for equality parameter whose value is taken to be 0.5 for our calculation.

### **3. RELEVANCE OF MEASURES OF INEQUALITIES USED IN THE LITERATURE**

Various Alternative measures of inequalities have been used in the literature for the measurement of income inequality as discussed earlier. But most of them did not raise the question about the appropriateness of these inequality measures. Several factors may be responsible for the changing values of the inequality measures. Two important determinants among them are the distribution of income and the size of the population as discussed by Boris and Daniel in their paper 'Measures of regional inequality for small countries'. The study tested for the suitability of measures of income inequality. In the first test, the authors have checked whether the overall number of regions matter. In the second test, they have checked the responsiveness of inequality indices to the differences in the regional distribution of population. In the final test, they have checked the sensitivity of inequality indices with respect to the sequence in which the regions are introduced into the calculation. They were astounded by the results as none of the indices has passed all the tests. It implies that these measures can give misleading estimates, if used for small regions. Among all the indices, Williamson index and Gini index have shown minor flaws for which they can be considered reliable regional inequality measures. They have tested the appropriateness of inequality measures among regions with varying population size and income distribution. By taking their paper as a reference, it can be generalised that the same holds true for a region consisting of different member countries like SAARC.

### **4. ANALYSIS AND RESULTS**

In this paper, some of the popular inequality measures found in the literature have been calculated by using the methods mentioned above, considering GDP per capita during the period – 1970 to 2011, to examine whether inequality in terms of per capita income in these member countries are falling over the years. SAARC will be a success if the gaps in the per capita incomes of these countries fall after the formation of the regional bloc. Income inequality measures or income distribution metrics are used to measure the economic inequality among the member countries of SAARC. The concept of inequality refers to the dispersion of income.

#### **4.1 Atkinson Index:**

British economist Anthony Barnes Atkinson has developed the Atkinson index to measure inequality in income. Atkinson index varies between 0 and 1. An inequality aversion parameter ( $e$ ) has been introduced in this index to weigh income. When  $e=0$  (no aversion to inequality), it is assumed that no social inequality will be gained by complete redistribution of income and the

value for the Atkinson index will be zero. When  $e=\infty$  (infinite aversion to inequality), it is assumed that infinite social utility is gained by complete redistribution where Atkinson index will be 1.

**Table 1: Atkinson Index:**

Year	Atkinson Index	Year	Atkinson Index
1970	0.056454	1991	0.030131
1971	0.049442	1992	0.022894
1972	0.030228	1993	0.022654
1973	0.031511	1994	0.016312
1974	0.043779	1995	0.016003
1975	0.09967	1996	0.014107
1976	0.054208	1997	0.236057
1977	0.052216	1998	0.009743
1978	0.075937	1999	0.008349
1979	0.062015	2000	0.008155
1980	0.060243	2001	0.005237
1981	0.078903	2002	0.003479
1982	0.073835	2003	0.002486
1983	0.060687	2004	0.002282
1984	0.041045	2005	0.002767
1985	0.039782	2006	0.000654
1986	0.03367	2007	0.001816
1987	0.035792	2008	0
1988	0.034831	2009	0.000532
1989	0.033324	2010	0.001685
1990	0.029811	2011	0.002739

Source: Computed from the data collected from [http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y)

In table 1 the values of Atkinson index show quite fluctuating movement over the years with a declining trend both in the pre-and post-liberalisation periods. However, the value reached a high of 0.236057 in 1997. This rise in value may be due to the long run impact of liberalisation. Another important observation is that after 1997 the value showed continuous decline. The index has reduced from 0.009743 in 1998 to 0.002739 in 2011. This shows that the gap among SAARC countries is on the decline.

**4.2 Theil inequality measure:**

Theil index is a statistic used to measure income inequality. In Table 2, Theil index has been calculated to measure income inequalities among the signatories of SAARC.

**Table 2: Theil index**

YEAR	VALUE	YEAR	VALUE
1970	0.1101	1991	0.0599
1971	0.0948	1992	0.0454
1972	0.0584	1993	0.0460
1973	0.0608	1994	0.0324
1974	0.0885	1995	0.0321
1975	0.2033	1996	0.0284
1976	0.0975	1997	0.0211
1977	0.0892	1998	0.0200
1978	0.1385	1999	0.0174
1979	0.1176	2000	0.0167
1980	0.1122	2001	0.0106
1981	0.1413	2002	0.0071
1982	0.1304	2003	0.0052
1983	0.1070	2004	0.0045
1984	0.0776	2005	0.0054
1985	0.0763	2006	0.0013
1986	0.0639	2007	0.0035
1987	0.0668	2008	0
1988	0.0660	2009	0.0000
1989	0.0638	2010	0.0032
1990	0.0577	2011	0.0053

Source: Computed from the data collected from

([http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y))

The values for Theil index in table 2 clearly indicate the fact that the inequality has been declining over the years. Moreover, with the establishment of regional bloc in 1985 and with economic liberalisation, the drop in the level of inequality has become more substantial.

#### **4.3 Williamson index:**

As stated in the existing literature, Williamson index is considered as one of the most reliable indicators for measuring inequalities. In Table 3, Williamson index has been calculated by taking the values for GDP per capita from the year 1970 to 2011, using the formula mentioned above.

**Table 3: Williamson index**

YEAR	VALUE	YEAR	VALUE
1970	0.3264	1991	0.1906
1971	0.2964	1992	0.219
1972	0.1403	1993	0.2049
1973	0.2272	1994	0.2321
1974	0.3068	1995	0.1679
1975	0.5186	1996	0.1779
1976	0.1987	1997	0.1677
1977	0.1745	1998	0.1521
1978	0.2787	1999	0.1604
1979	0.2649	2000	0.1448
1980	0.2762	2001	0.1483
1981	0.2761	2002	0.1348
1982	0.249	2003	0.11488
1983	0.2326	2004	0.0824
1984	0.197	2005	0.0646
1985	0.2164	2006	0.0689
1986	0.1874	2007	0.0535
1987	0.2056	2008	0.1368
1988	0.2056	2009	0
1989	0.1791	2010	0.0648
1990	0.1819	2011	0.0933

Source: Computed from the data collected from

([http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y))

The values of Williamson index calculated for the year 1970 to 2011 in Table 3 depicts declining proportions of per capita GDP among member countries of SAARC, which is further noticeable after the formation of economic cooperation in 1985. Value drops from a remarkable 0.3264 in 1970 to 0.0933 in 2011. It can, therefore, be inferred that there is a drop in income inequality among SAARC member countries.

#### **4.4 Coefficient of variation:**

In probability theory and statistics, the coefficient of variation (CV) is a standardized measure of dispersion of a probability distribution or frequency distribution. It is defined as the ratio of the standard deviation to the mean.



**Table 4. Co-efficient of variations of GDP per capita (1970-2011)**

YEAR	CO-EFFICIENT OF VARIATIONS	YEAR	CO-EFFICIENT OF VARIATIONS
1970	50.16	1991	37.28
1971	46.31	1992	32.86
1972	35.44	1993	33.16
1973	37.61	1994	27.64
1974	47.20	1995	27.49
1975	72.92	1996	26.08
1976	44.59	1997	22.57
1977	40.65	1998	22.24
1978	53.31	1999	20.80
1979	50.47	2000	20.19
1980	49.00	2001	16.12
1981	53.39	2002	13.26
1982	50.68	2003	11.28
1983	45.53	2004	10.36
1984	40.78	2005	11.18
1985	40.98	2006	5.59
1986	37.22	2007	9.24
1987	37.61	2008	0
1988	37.50	2009	5.21
1989	37.33	2010	8.68
1990	35.92	2011	10.98

Source: Computed from the data collected from

([http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y))

The CV values in table 4 are quite high in the pre-economic cooperation periods with a peak of 72.92 percent in 1975. But after the creation of SAARC (7) in 1985, the Co-efficient of Variation of GDP per capita among SAARC countries has been steadily decreasing and has even come to the lowest of 10.98 in 2011.

**4.5 Gini index:**

Gini index is the most common of all the matrices for measuring income inequality. Gini index has been calculated for the study period from the year 1970 to 2011, by taking GDP per capita as an indicator. The Gini index ranges between 0 and 1 where 0 indicates perfect equality and 1 indicates maximum inequality. Table 5 shows the value of Gini index for the time span mentioned.

**Table 5. Gini Values of GDP per capita during (1970-2011)**

YEAR	GINI CO-EFFICIENT	YEAR	GINI CO-EFFICIENT
1970	0.26	1991	0.19
1971	0.24	1992	0.17
1972	0.18	1993	0.17
1973	0.20	1994	0.14
1974	0.23	1995	0.14
1975	0.34	1996	0.13
1976	0.23	1997	0.11
1977	0.20	1998	0.11
1978	0.28	1999	0.10
1979	0.27	2000	0.10
1980	0.25	2001	0.08
1981	0.28	2002	0.06
1982	0.26	2003	0.05
1983	0.23	2004	0.05
1984	0.21	2005	0.06

1985	0.21	2006	0.03
1986	0.19	2007	0.05
1987	0.19	2008	0.00
1988	0.20	2009	0.03
1989	0.20	2010	0.04
1990	0.19	2011	0.05

Source: Computed from the data collected from

[http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y)

It can be observed from table 5 that the value of the Gini co-efficient has been falling over the years. The value has dropped from the highest 0.34 in 1975 to a substantial low of 0.03 in 2006 and 2009. Steady fall in the values of Gini coefficient has been depicted after 1985 which is the year of economic integration among SAARC nations.

#### **4.6 Coulter Coefficient:**

Another frequently used measure of income inequality is coulter coefficient which has been calculated in Table 6.

**Table 6: Coulter Coefficient**

YEAR	VALUE	YEAR	VALUE
1970	0.80562	1991	0.07546
1971	0.09227	1992	0.06065
1972	0.03506	1993	0.08886
1973	0.06468	1994	0.05434
1974	0.07240	1995	0.06173
1975	0.16307	1996	0.05189
1976	0.04696	1997	0.05199
1977	0.05567	1998	0.05597
1978	0.07813	1999	0.04160
1979	0.06458	2000	0.05558
1980	0.08306	2001	0.05946
1981	0.06806	2002	0.04913
1982	0.06756	2003	0.02472
1983	0.09335	2004	0.01409
1984	0.04517	2005	0.02954
1985	0.06153	2006	0.02889
1986	0.06286	2007	0.08365
1987	0.07882	2008	0
1988	0.05600	2009	0.03542
1989	0.04904	2010	0.06818
1990	0.05367	2011	0.05456

Source: Computed from the data collected from ([http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y))

It can be observed from the values of Coulter coefficient in Table 6 that there has been a drop in inequality among SAARC nations from 0.80562 in 1970 to 0.05456 in 2011 which goes in favour of success of SAARC as a regional trading bloc. Whether the establishment of economic cooperation goes in favour of SAARC nations – cannot be concluded from the results above, because no significant change in the values has taken place after 1985; though the values have steadily been falling, which advocates the positive outcome.

**4.7 Hoover index:**

Among all inequality matrices, Hoover index is the simplest to calculate. It refers to the proportion of all income, which needs to be redistributed to reach perfect equality. ‘Hoover index 0’ refers to the state where no resources need to be redistributed, meaning there is perfect equality. ‘Hoover index 1’ means all the resources must have to be redistributed from an entity to

all the sections, which refers to the state of perfect or maximum inequality. Hoover index has been calculated for the present study in Table 7 using the formula stated above.

**Table 7: Hoover Index**

YEAR	VALUE	YEAR	VALUE
1970	0.86608	1991	0.087376
1971	0.109526	1992	0.073320
1972	0.047382	1993	0.098804
1973	0.079329	1994	0.063371
1974	0.079339	1995	0.071161
1975	0.176396	1996	0.060753
1976	0.057845	1997	0.056241
1977	0.068668	1998	0.057773
1978	0.097813	1999	0.043350
1979	0.079094	2000	0.059485
1980	0.100069	2001	0.056962
1981	0.086017	2002	0.049007
1982	0.088381	2003	0.026241
1983	0.105271	2004	0.012526
1984	0.056693	2005	0.030126
1985	0.076097	2006	0.026510
1986	0.074632	2007	0.061542
1987	0.085757	2008	0.000000
1988	0.067859	2009	0.031993
1989	0.061791	2010	0.056872
1990	0.061912	2011	0.045431

Source: Computed from the data collected from

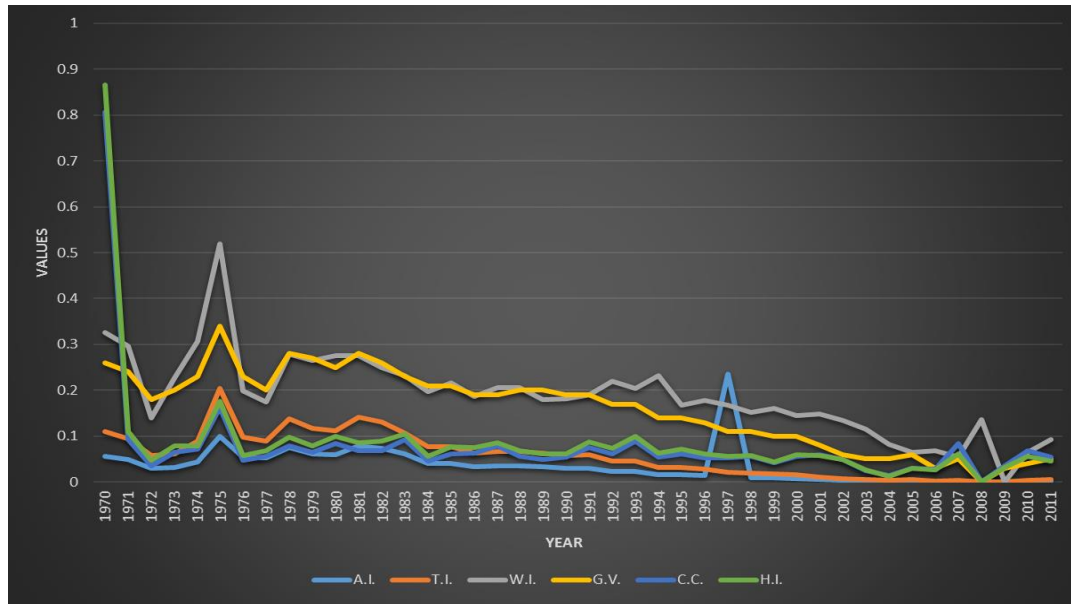
[http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report\\_name=Popular\\_indicators&populartype=series&ispopular=y](http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y)

Like the values of Coulter coefficient, similar trend can be noticed for the values of Hoover index. The overall variation has been falling as the value of the index falls from 0.86608 in 1970 to 0.045431 in 2011. But no prominent change has occurred after 1985 that can strongly support the accomplishment of SAARC as an economic cooperation.

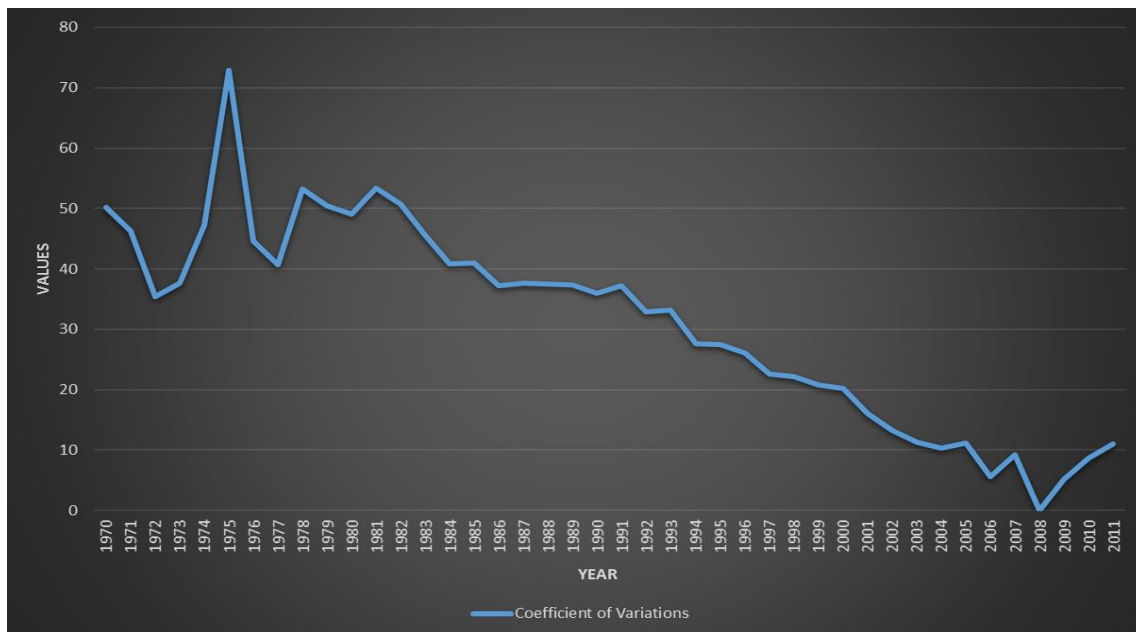
## **5. TREND IN INEQUALITIES OF GDP PER CAPITA FROM THE YEAR 1970 TO 2011:**

In the present paper, the values of different inequality measures of GDP per capita have been calculated for the study period (1970 to 2011). A trend line gives a clear idea about the trend in values of different inequality measures over the years.

**Figure 1: Trend line of GDP per capita for the Inequality Indices from (1970-2011)**



**Figure 2: Trend line of GDP per capita for Coefficient of Variation from (1970-2011)**



It can be readily assured from the trend lines in Figure 1 and Figure 2 that the inequalities of GDP per capita among SAARC nations have been declining over the years, which further

strengthen the possibility of consolidation among SAARC member countries. Because of the large variation in the values of coefficient of variation (CV) from the values of other inequality indices, a separate trend line has been drawn for the values of CVs in Figure 2.

## **6. CONCLUSION**

This paper estimates variation or disparity among seven SAARC countries namely India, Nepal, Bhutan, Pakistan, Srilanka, Maldives and Bangladesh using per capita GDP as the indicator from the year 1970 to 2011. The paper investigates whether income inequality declines overtime within SAARC member countries, which can be attributed as the significant result of economic cooperation. The present study has not considered the factors responsible for such trends of inequality/ equality of GDP per capita among member nations overtime. However, the inequality measures considered here show steady decline in inequality in terms of per capita GDP. As none of the disparity measures included in the present paper showed any positive trend, it can, therefore, be asserted that there has been falling disparity or inequality among SAARC member countries over the years. Whether the establishment of economic cooperation in 1985 contributes in the favour of falling disparity, is still a debatable issue but the results of the inequality measures confirms the declining inequality among SAARC.

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