International Labour Migration and Convergence in Human Development: A Study of SAARC Countries

Dipika Basu
Professor of Economics, West Bengal State University

Debamitra Banerjee
Research Scholar, Department of Economics, West Bengal State University

Abstract

The present study examines convergence in human development index and real per capita income across SAARC countries in terms of both the methods of sigma (σ)-convergence and beta (β)-convergence during 1990-2017. The study also analyses patterns and trends in international labour migration of SAARC countries and it tries to assess the role of such labour mobility in human development. There is a clear indication of both unconditional and conditional convergence in human development across SAARC countries. There is a positive role of international labour migration in such convergence in human development. An analysis of panel data regression results reveals that the extent of emigrants from the member countries of SAARC to the developed countries and the trade openness significantly impact human development as well as economic development. Population pressure, income differentials, level of urbanisation and the degree of trade openness are the crucial determinants of emigrants of SAARC countries to the developed countries. India, Pakistan, and Bangladesh are the major contributors to international migrant stocks in the SAARC region. The refugees in the SAARC region are mainly concentrated in Pakistan. The remittance received per emigrant of the member countries of SAARC is found to be greater than the amount they have paid per immigrant. The policy of economic openness, urbanisation and the extent of labour mobility across countries are the very important factors for the improvement of human development as well as economic development.

Keywords: *SAARC Countries, Human Development, International Labour Migration, Remittances.*

JEL Classifications: *O15, F22, F24, J61.*

I. Introduction

In the era of globalization, international labour migration is one of the important aspects of economic integration and development. It is a global phenomenon that includes both hassles and conveniences in the modern economy. Particularly, international labour migration offers livelihood options for many people in developing countries. It has great policy implications for employment, growth and human welfare of both sending and receiving countries. Remittance is a central element of international migration which greatly affects economic development in countries of origin as well as countries of destination. The present study is

trying to explore the role of international labour migration in the convergence of human development in the South Asian Association for Regional Cooperation (SAARC) countries. In this study, we try to analyse the patterns and trends of labour migration in the SAARC countries during the period from 1990 to 2017 and examine the impact of such labour mobility on convergence in human development of the SAARC countries based on UNDP, UNCTAD data and ADB statistics of the SAARC countries during 1990 to 2017. The member countries of SAARC have felt in the same way as the global economy which is trying to tackle the incident of labour migration. The outcome of the above feeling was reflected in the 18th conference of SAARC held in Kathmandu in the year 2014. The summit has decided to validate the SAARC memorandum of labour migration which was considered as an issue in need of collective action.

Objectives of the study

The major objectives of the present study are as follows:

1. To analyse the convergence/divergence in Human Development Index (HDI) and real per capita Gross Domestic Product (PCGDP) of the SAARC countries.
2. To analyse the patterns and trends of international labour migration including the stock of refugees in the SAARC countries for the period of 1990 to 2017.
3. To find out the factors behind the international emigrants from the SAARC countries from 1990 to 2017.
4. To explore the linkages of the trade openness and labour migration to the convergence in human development and per capita income.

II. Conceptual Framework and Literature Review

International labour migration can be defined as the process of movement of people across nations basically to get employment. In the traditional economic theory, migration and trade were treated as the substitute of each other. But the United Nations ESCAP report prepared by Witada Anukoonwattaka and Adam Heal (2016) proved that there is a complementary relationship between migration and trade relations as migration can boost the economic growth of both the origin and destination countries along with improvements in the societal condition of the country if it is managed properly. There is a broad consensus that international labour mobility can contribute positively to economic development and poverty reduction under certain conditions. The ability to earn higher salaries abroad is broadly good for migrants and their families, and communities remaining behind in the sending countries. The causes and consequences of continued internal as well as international migration lie at the heart of the contemporary development problem. Continued internal migration over job opportunities is both a symptom of and contributing factor to the ubiquitous problems of poverty, inequality and unemployment that characterise most contemporary Third World nations (Todaro, 1976). Human Development is giving people more freedom of choice, generating an atmosphere in the society so that people either individually or collectively bring wellbeing for themselves by utilizing optimally their inherent capability and live a quality life simultaneously with the increase in GDP and GDP per capita. In contemporary studies, the centre of concern is based upon a convergence of human development along with the growth of GDP and per capita GDP of the country concerned. An IMF working paper prepared by Randa Sab and Stephen C. Smith (2001) has considered education and health as joint investments and they showed that there is unconditional convergence in health indicators and conditional convergence in all human capital indicators across 100 countries

during 1970-96. In a study (Babini, 1991), it is concluded that there is convergence in education indicators and the highest level of convergence is at a primary level of education. On the other hand, the economic convergence indicates bringing uniformity in the economic variables of the members of the group. We have plenty of literature on human development and migrants (Sagar and Najam, 1998; Kandemir,2012; Mamtani, Lowenfels, Cheema and Sheikh, 2014), income convergence/divergence (Barro, 1991; Mankiw, Romer and Weil, 1992; Sala-i-Martin, 1996), international labour migration (Madhu and Uma,2014; Stark et. al.,1986; Rapoport and Docquier, 2005; Bettin, et. al 2014) separately. There is a gap in the existing literature on the role of labour mobility in convergence in human development index across SAARC countries. The present study tries to fill up some of the gaps in the existing literature on the subject. Here, we are concerned with the convergence of human development of SAARC countries during the period of 1990 to 2017 and try to examine the impact of international labour migration on convergence in human development with the help of a panel data regression model.

III. Methodology

In this study, we consider eight SAARC countries for the analysis of the study based on available data for the period 1990 to 2017. We have taken the database from the UNDP and UNCTAD and ADB statistics. We first analyse the pattern and trend in international labour migration in SAARC countries and then examine the impact of such labour mobility in the human development of SAARC countries. The Human Development Index (HDI) is considered to be the indicator of human development. Some important variables and notations are used in this study. For example, HDI= Human Development Index, GDP= Gross Domestic Product, PCGDP= Per Capita GDP, MS=Migration Stock, RS= Refugee stock.

From the theory of convergence by Sala-i-Martin (1996), sigma (σ) and beta (β) convergences are two indicators for estimating the intensity and the momentum of convergence.

1) σ-convergence: This is the indicator measuring the intensity of convergence or divergence depending upon the value of sample variances. If the cross-sectional standard deviation of values of the variable concerned decreases over time, then σ-convergence is said to exist. Instead of standard deviation (σ), we have calculated the coefficient of variation (CV) of HDI of the SAARC countries for the period from 1990 to 2017. If it is found that $CV_0 > CV_1 > CV_2 > CV_3 \ldots\ldots\ldots\ldots > CV_T$ indicating the fact that SAARC countries have experienced convergence in HDI from 1990 to 2017.

For checking out the diminishing tendency of the cross-sectional variances of HDI we consider the best-fitted curve for the coefficient of variation [$CV_t = f(t)$, where $t=0,1,2,3\ldots\ldots T$] where T =27 and named it as sigma curve for HDI. The regression analysis here is essential to remove the volatility (if any) arising out of the year-wise fluctuation in the economic variable. The annual compound growth rate of CV_T may be used as an indicator of speed/rate/momentum of σ-convergence (Basu and Nandi, 2014).

2) β-convergence: This is the indicator showing the dynamism of the relatively lagged country growing faster than the advanced country. In this case there should be a negative correlation between growth of HDI (g_{HDI}) and the initial level of HDI (HDI_0) indicating that the countries with an initially higher level of HDI have a lower level of HDI growth so that all the country converges toward the same steady-state level of HDI.

There are two types of β.-convergences and the two regression models are as follow:

i) $g_{HDI} = \alpha + \beta \ln(HDI_0) + e$ (unconditional or absolute convergence)

ii) $g_{HDI} = \alpha + \beta \ln(HDI_0) + \gamma X_i + e$ (conditional convergence)

where X_i is are the other explanatory variable that may affect the growth of HDI and α, β and γ are the regression coefficients and e is the error term. In both the model, the negative value of β indicates the convergence. Usually, β-convergence is the necessary condition for σ-convergence.

The above methods are used in this study to examine convergence in HDI and per capita real income (PCGDP).

3) Growth rate calculation: The growth rate of relevant variables in the study for the period 1990-2017 are calculated by using the semi-logarithmic regression equation as follow:

$$\ln(X_t) = a+bt \ldots\ldots\ldots (1)$$

Where X is the concerned variable, t is the time and a, b are the regression coefficients.
This is equivalent to the logarithmic transformation of the compound growth equation

$$X_t = X_0(1+r)^t \ldots\ldots\ldots\ldots (2)$$

Thus, b = ln(1+r) and therefore average annual growth rate (r) is obtained as

$$r = (e^{b^*} - 1) * 100 \ldots\ldots\ldots\ldots (3)$$

where b^* is the least-square estimate of b.

4) Panel data regression (Random effect model) and the BP LM test: In this study, we use a panel data regression model taking the values of eight SAARC countries as cross-section data and the period from 1990 to 2017 as the time series data as follows.

$$Y_{it} = a + bX_{it} + €_{it},$$

where Y is the dependent variable, X is the independent variable, a and b are coefficients, i stands for eight SAARC countries and t is the indicator of time. In a random effect model, $€_{it}$ is the stochastic disturbance term with an assumption of unobserved heterogeneity uncorrelated with the independent variable. We have used Breusch and Pagan Lagrange Multiplier test for the random effect model.

IV. Results and Discussions

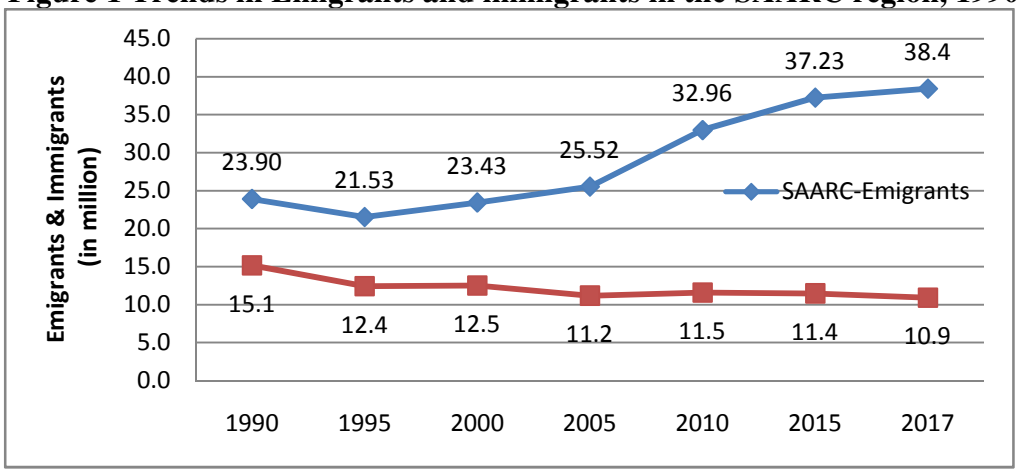
4.1 Patterns and Trends in International Labour Migration in the SAARC countries

By statistical definition, an international migrant includes all persons who reside outside their country of birth, irrespective of the motivation to move. Several countries collect information on foreign citizens only, regardless of their country of birth. Often the term 'migrant' is used to refer to voluntary migrants, who choose to move across international borders, as opposed to forced migrants, who are compelled to leave their communities of origin. According to the 1951 UN Refugee Convention and the 1967 Protocol, refugees are persons who have fled their country because of a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group, or political opinions (UNDP, 2015).

In this section of the study, we are trying to examine patterns and trends of labour migration in the SAARC countries during the period from 1990 to 2017 with the help of United Nations data on Migration stock. International migrant stock is elucidated as the assessment of the total number of international migrants that exist in a country during a period including the stock of refugees. In other words, the stock of migrants present in the country gives an estimate of the number of immigrants present in the country. Naturally, the estimate of the

number of immigrants is very much essential for discussion of development as there will be an outflow of remittances from the country for each immigrant. From the analysis of data, it is revealed that SAARC countries are not so attractive for international migrants rather these countries increasingly access to the international labour markets significantly. International migrants stock or the number of immigrants in the SAARC region decreases from 15.1 million in 1990 to 10.9 million in 2017. International migrant stock as a percentage of the total population in Southern Asia also decreases from 1.6% in 1990 to 0.7% in 2017. Whereas, the number of emigrants of the SAARC countries is increasing significantly from 23.90 million in 1990 to 38.4 million in 2017 (Figure 1).

Figure 1 Trends in Emigrants and immigrants in the SAARC region, 1990-2017.



Source: United Nations Population Division, December, 2017.

4.1.1 Distribution and Growth of Immigrants: SAARC countries

Table 1 depicts the distribution of international migrants stock or immigrants and refugees in SAARC countries in 2017. It also shows the growth of immigrants and refugees in the member countries of SAARC from 1990 to 2017.

Table 1 Distribution and Growth of migrants stock and refugees in SAARC countries, 2017

	Immigrants				Refugees		
	Persons	% share	as % of population	Growth Rate (%)	Persons	% share	Growth Rate (%)
Afghanistan	133612	1.2	0.4	**5.44**	59,996	3.1	**26.94**
Bangladesh	1500921	13.8	0.9	**2.12**	2,76,208	14.3	**29.43**
Bhutan	52296	0.5	6.5	**3.11**			
India	5188550	47.7	0.4	**-1.40**	2,11,101	10.9	**1.39**
Maldives	67026	0.6	15.4	**7.47**			
Nepal	502670	4.6	1.7	**-0.22**	30,651	1.6	**-0.74**
Pakistan	3398154	31.2	1.7	**-1.45**	13,57,416	70.1	**-1.63**
Sri Lanka	40018	0.4	0.2	**-0.16**	1,319	0.1	**20.94**
SAARC	**10883247**	**100.0**		**-0.94**	**1936691**	**100.0**	**-0.58**

Note: Growth rate=Annual average compound growth rate (%) during 1990-2017.
Source: United Nations Population Division, December, 2017.

It is observed that India, Pakistan and Bangladesh share about 92.7 per cent of total migrant stock in the SAARC region. The refugees in the SAARC region are mainly concentrated in Pakistan (70.1% of total refugees in the SAARC). However, India, Pakistan, Sri Lanka and Nepal have experienced negative growth of immigrants during 1990-2017. The annual average compound growth rate of the number of immigrants is estimated to be -1.40% in India, -1.45% in Pakistan, -0.22% in Nepal and -0.16% in Sri Lanka during 1990-2017. International migrant stock as a percentage of the population in the Maldives is very high of 15.4% compared to the other member countries of SAARC in 2017. The Maldives is also attractive for international migrants as the growth of immigrants in Maldives is found to be 7.47% during 1990-2017.

Afghanistan has attached itself to SAARC on 3rd April, 2007 and it had 133,612 immigrants in the year 2017 out of which 44% (59,996) were recorded as refugees. In Bangladesh, 0.8 percent of the population were immigrants (881,617) in 1990 where only 73 immigrants were refugees. In 2005 the percentage of population who were non- Bangladeshi remained the same i.e (0.8%) but the number of refugees has increased to 125,586 in 2005. The number of immigrants was 1,500,921 with 276,206 (18.4%) refugees in 2017. The number of migration stock of Bhutan has increased from 23,807 in 1990 to 52,296 in 2017 and Bhutan is the country free of refugees till 2017. India is experienced a decrease in the migration stock from 74,93,204 in 1990 to 51,88,550 in 2017 but the number of refugees increased from 1,11,146 in 1990 to 2,11,101 in 2017. The Maldives is experienced a rise in the immigrant stock from 8,689 in 1990 which was 3.9% of its population to 67,026 in 2017 accounting for 15.4% of its population in the year. However, the record for the number of refugees is zero during the period concerned for the Maldives. Nepal had a refugee stock of 17,325 out of 4,29,974 immigrants in 1990. In the year 2005, the refugee stock was very high (1,26,436) though it was reduced to 31,651 out of 5,02,670 amount of migrant stock in 2017. Pakistan is the country with the highest number of refugee stock among SAARC during the period. In 1990, 52.6% of immigrants in Pakistan were refugees, and it is almost 40.43% of its total immigrants are refugees in 2017. It had 1,357,416 refugees in 2017. Sri Lanka is another member of SAARC like Bhutan and Maldives with a lesser amount of immigrants as well as refugee stock. In 2017, it had some migrants stock of 40,018 with 1319 refugees.

An analysis of Table 2 reveals a clear view of how the migration stock of the SAARC countries is changing over the period concerned. We have divided the whole study period into five phases like 1990 to 1995, 1995 to 2000 and so on. Afghanistan had a positive rate of change of migrant stock except for the year 2015 to 2017. The last phase has a huge negative rate of change (-64.9%) of migrant stock. Till 2005, there was a decrease in the rate of change of migrant stock and 2010 – 2015 showed a big jump of growth rate of migrant stock to two-digit (31.3%). Bangladesh showed a positive growth rate of migrants over the specified years ranging from 1.1% in 1995-2000 to a maximum of 3.3% in 2000-2005. Bhutan experienced a higher migrant growth rate than Bangladesh. Initially, it is started with a rate of change of 3.2%. India is the largest country in SAARC but it is experienced a negative growth rate of immigration over the whole span of time. Maldives had started with a record rate of change of migrant stock of 15.1% from 1990 to 1995 and maintained a positive rate over the whole span of time. In 2000 to 2005 it stood once again a double-digit score of 10.2% but the rate of change has gradually decreased and from 2015 to 2017 it has recorded a 2.1% rate of growth of the migrant stock. Nepal has experienced the highest (9.5%) rate of change of migrant stock in 1990-1995 and in the consecutive five years the migrant growth rate was just 0.8% and for the rest of the period it is recorded a negative rate of change. Pakistan is initiated a negative of 10.5% rate of change of migrant stock and concluded with a negative of 3.3%.

Only positive score occurred in 1995-2000 and 2005-2010. Sri Lanka is experienced a negative rate of change of migrant stock till 2010 and thereafter the rate of change of migrant stock is positive but it is very low (0.4%).

Table 2: Annual rate of change (%) of migrant stock in SAARC countries, 1990-2017

Country	1990-1995	1995-2000	2000-2005	2005-2010	2010-2015	2015-2017
Afghanistan	4.3	1.2	2.8	3.2	31.3	-64.9
Bangladesh	1.2	1.1	3.3	2.9	1.1	2.7
Bhutan	3.2	2.8	4.5	3.7	1.1	1.2
India	-1.5	-1.6	-1.6	-1.7	-0.7	-0.5
Maldives	15.1	7.6	10.2	3.9	3.2	2.1
Nepal	9.5	0.8	-1.1	-3.2	-2.5	-0.7
Pakistan	-10.5	2.6	-5.5	4.3	-1.7	-3.3
Sri Lanka	-0.3	-0.4	-0.3	-0.3	0.4	0.4

Source: United Nations Population Division, December 2017

4.1.2 Distribution and Growth of Emigrants: SAARC countries

An economic analysis of international labour migration is important in the context of inflows and outflows of remittances. Immigrants are the stock of foreign migrants present in the country. But emigrants are national people who migrate to a foreign country for better employment and send remittances to their relatives present in the home country. Tables 3a and 3b summarize the total scenario of emigrants from SAARC region to different destinations in 2017.

Table 3a Emigrants from SAARC countries to different destinations, 2017

	Destination-wise emigrants (persons)				
Origin countries	Within SAARC countries	Non-SAARC countries	World	Developed countries	Less developed countries
Afghanistan	1523875	3302589	4826464	497551	4328913
Bangladesh	3178887	4321032	7499919	708357	6791562
Bhutan	35147	8823	43970	8804	35166
India	2419636	14168084	16587720	4723840	11863880
Maldives	1606	1277	2883	1106	1777
Nepal	578582	1159860	1738442	244515	1493927
Pakistan	1192606	4786029	5978635	1459298	4519337
Sri Lanka	161324	1565576	1726900	752426	974474
SAARC	**9091663**	**29313270**	**38404933**	**8395897**	**30009036**

Source: United Nations Population Division, December 2017

Table 3b Percentage distribution of Emigrants of SAARC countries, 2017

Countries	Total Emigrants		Emigrants as % of population	Destination-wise emigrants (as % of total emigrants)	
	Persons	% share		SAARC	Developed

				countries	countries
Afghanistan	4826464	12.6	13.3	31.57	10.31
Bangladesh	7499919	19.5	4.7	42.39	9.44
Bhutan	43970	0.1	5.9	79.93	20.02
India	16587720	43.2	1.2	14.59	28.48
Maldives	2883	0.0	0.6	55.71	38.36
Nepal	1738442	4.5	6.3	33.28	14.07
Pakistan	5978635	15.6	2.9	19.95	24.41
Sri Lanka	1726900	4.5	8.2	9.34	43.57
SAARC	**38404933**	**100.0**	**2.1**	**23.67**	**21.86**

Source: United Nations Population Division, December 2017

Afghanistan had a higher number of emigrants than immigrants during the period although the emigration has fallen from 67,24,681 in 1990 to 48,26,424 in 2017. In 2017, 0.4% of the Afghan population were immigrants and 13.3% of it migrated to the world. Bangladesh had 0.85% of its population as immigrants and 5% of the population as emigrants in 1990. The proportion of immigration increased to 0.94% of its population while the proportion of emigration to the population remained almost the same in 2017. Bhutan has more immigrants than emigrants throughout the period. In 2017, Bhutan had a population of 7,45,563 out of which 52,296 were immigrants and 52,296 were emigrants. India is the country with the largest population (75%) among SAARC countries. But its proportion of population as both immigrants and emigrants are very low during the period concerned. For example, 0.4% of the Indian population were immigrants and 1.2% emigrants. Maldives is an exceptional member of SAARC where the proportion of immigration is very high in comparison to the proportion of emigration. For example, about 1% of the population of Maldives were emigrants in 1990, 2005 and 2017 while 3.89% of its population were immigrants in 1990, 14.09% in 2005 and 13.5% in 2017. Nepal had higher emigrants than immigrants throughout the study period. Pakistan also had higher emigrants than immigrants in the period. The same pattern is followed in Sri Lanka too. It had 8.2% of its population as emigrants and 0.19% population as immigrants in 2017.

The estimated annual average compound growth rate of emigrants from SAARC to different destinations is shown in Table 4. It is found that all the SAARC members have experienced a negative growth rate of intra-SAARC emigration except Maldives and Nepal during 1990-2017. The growth rate of emigrants from each SAARC country to Non-SAARC countries and particularly to the labour markets of developed countries is observed to be positive and significant which implies SAARC countries prefer to sending their labour to the non-SAARC and developed regions rather than within the SAARC region. Most of the member countries of SAARC have increasing ability to access international labour markets.

Table 4: Annual compound growth rate of emigrants from SAARC during 1990 to 2017

	Destination-wise growth rate of emigrants from SAARC countries to				
Origin	SAARC countries (within)	Non-SAARC countries	World	Developed countries	Less Developing countries
Afghanistan	-1.39	0.49	-0.27	5.33	-0.57
Bangladesh	-1.24	5.70	1.33	5.60	1.06
Bhutan	-1.38	13.26	-0.57	13.41	-1.38
India	-1.08	3.74	3.72	5.21	3.26

Maldives	0.83	4.99	2.05	5.02	1.08
Nepal	0.08	7.01	3.26	14.48	2.65
Pakistan	-1.40	4.90	2.52	4.49	2.06
Sri Lanka	-2.06	3.80	2.70	3.97	1.94

Source: Authors' calculation

4.1.3 Inflows and outflows of Remittances: SAARC countries

Remittances are defined as the relocation of liquid assets from a foreign country to a home country in the process of international labour migration. Immigrants are the stock of migrants present in the country for whom remittances are paid from country's GDP going outside. Emigrants are the source of foreign currency as they migrate to the foreign country for better employment and send foreign currency to their relatives present in the home. Table 5a and Table 5b summarize the whole scenario of remittance inflows and outflows of SAARC countries from 1990 to 2017 based on available data from UNCTAD and ADB data sources.

Table 5a Receipts and payments of remittances of SAARC countries, 1990-2017.

Countries	1990	1995	2000	2005	2010	2015	2017	Growth
	Remittance Received($ million)							Rate (%)
Afghanistan					346	349	734	**9.10**
Bangladesh	779	1,200	1,969	4,642	10,850	15,296	13,502	**12.58**
Bhutan					8	20	43	**25.77**
India	2,382	6,224	12,845	22,125	53,480	68,910	68,967	**13.44**
Maldives	2	2	2	2	3	4	4	**2.96**
Nepal		57	112	1,212	3,464	6,730	6,928	**26.73**
Pakistan	2,010	1,710	1,080	4,280	9,690	19,306	19,688	**11.13**
Sri Lanka	401	809	1,163	1,976	4,123	7000	7190	**11.54**
	Remittances paid ($ million)							
Afghanistan					789	229	138	**-22.02**
Bangladesh				5	9	32	47	**21.32**
Bhutan					71	55	53	**-4.26**
India	106			1,348	3,829	4,883	6,959	**16.87**
Maldives	8			70	189	348	475	**16.46**
Nepal				66	32	9	33	**-9.70**
Pakistan	1			3	9	30	121	**17.49**
Sri Lanka		16		249	526	896	944	**20.44**
	Net remittance receipt ($ million)							
Afghanistan					-443	120	596	
Bangladesh	779	1200	1969	4637	10841	15264	13455	**12.57**
Bhutan					-63	-35	-10	
India	2276	6224	12845	20777	49651	64027	62008	**13.10**
Maldives	-6	2	2	-68	-186	-344	-471	
Nepal		57	112	1146	3432	6721	6895	**26.74**
Pakistan	2009	1710	1080	4277	9681	19276	19567	**11.12**
Sri Lanka	401	793	1163	1727	3597	6104	6246	**10.86**

Source: UNCTAD Statistics and ADB database.

Most of the SAARC countries have experienced positive net inflows of remittances as the remittance receipts are greater than remittance payments except in Bhutan and Maldives. Afghanistan has fewer immigrants than emigrants. Still, its remittance receipt per emigrants is less than the remittances paid per immigrants. The main reason may be the fact that most Afghan emigrants destined for relatively less developed countries and its intra-SAARC mobility of labours are higher than all other SAARC members. Bhutan is the country where the number of immigrants rises with a fall in the number of emigrants over the years and it is experiencing negative net receipts of remittances during 2010-2017. In Maldives, the number of emigrants is much lower than the number of immigrants and it is also experiencing negative net receipts of remittances during 2005-2017.

Table 5b Remittance received per emigrant and Remittance paid per immigrant in the SAARC countries, 1990-2017.

Countries	1990	1995	2000	2005	2010	2015	2017	**Growth**
	Remittance received per emigrant ($)							**Rate (%)**
Afghanistan					69	72	152	**9.63**
Bangladesh	143	221	362	805	1609	2111	1800	**11.10**
Bhutan					93	454	978	**39.48**
India	355	860	1610	2293	4015	4345	4158	**9.37**
Maldives	912	1186	1686	1138	1083	1413	1387	**0.89**
Nepal		67	115	1077	2520	4034	3985	**22.55**
Pakistan	602	511	318	1098	1935	3260	3293	**8.40**
Sri Lanka	453	874	1186	1739	2878	4306	4164	**8.60**
	Remittance paid per immigrant($)							
Afghanistan					7717	468	1033	**-28.81**
Bangladesh				4	7	22	31	**18.94**
Bhutan					1466	1076	1013	**-5.31**
India	14			228	704	932	1341	**18.51**
Maldives	921			1554	3458	5414	7087	**7.87**
Nepal				97	55	18	66	**-7.34**
Pakistan				1	2	8	36	**19.89**
Sri Lanka		392		6300	13501	22566	23589	**20.57**

Source: Authors' calculation

India is the major recipient of remittances among SAARC countries with 58.9% share of total remittances inflows in the SAARC region in 2017. India's net inflows of remittances increases significantly from 2276 million US$ in 1990 to 62008 million US$ in 2017 with an average compound growth rate of 13.1% per year. India has received 4158 US$ per emigrant and paid 1341 US$ per immigrant in 2017 which implies that India has a comparative advantage in international labour migration. Bangladesh, Pakistan, and Nepal have also experienced with greater amount of remittance received per emigrant than the payment of remittance per immigrant during the study period. The remittance received per emigrant of the member countries of SAARC is found to be greater than the amount they have paid per immigrant (Table 5b).

4.2 Convergence in HDI and PCGDP

According to HDI ranking by the UNDP, Sri Lanka is the best among SAARC countries with 71 ranking followed by Maldives (104 ranking), India (129 ranking), Bhutan (134 ranking),

Bangladesh (135 ranking), Nepal (147 ranking), Pakistan (152 ranking) and Afghanistan (170 ranking) in 2018. The growth rate of HDI is estimated to be highest (2.12% per year) in Afghanistan and it is the lowest in Sri Lanka (0.86% per year) among SAARC countries during 1990-2018 (Table 6). The growth rate of HDI for each member countries of SAARC is found to be greater than that of global HDI (0.78% per year). It is also interesting to note that growth of real per capita GDP is observed to be greater in SAARC countries (4.82% in India, 4.62% in Sri Lanka, 4.03% in Bangladesh, and 5.87% in Bhutan) than the world average growth rate of income (1.62%) except in Pakistan (1.58%) during the study period.

Table 6: Level and growth of per capita GDP and HDI across SAARC countries, 1990-2018

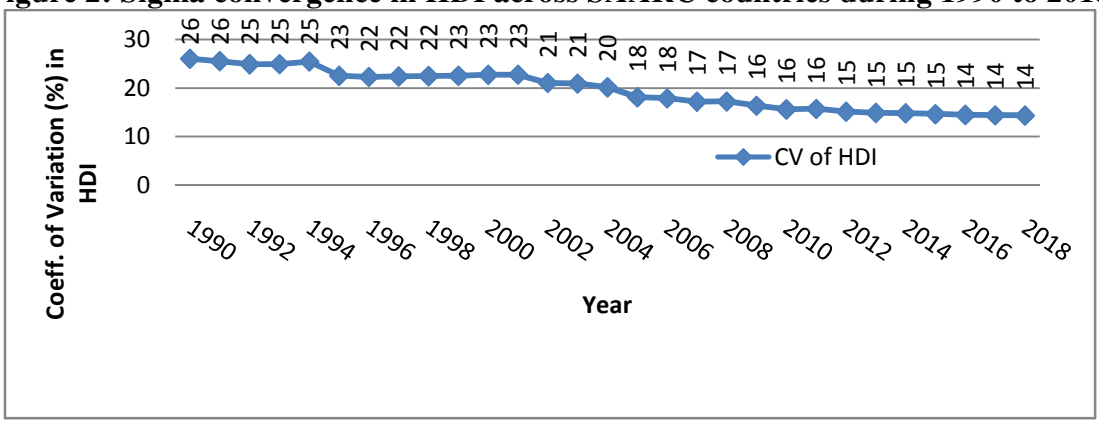
SAARC countries	grpcgdp90-18	pcgdp1990	pcgdp2018	grhdi90-18	hdi1990	hdi2018
Afghanistan	**1.89**	714	611	**2.12**	0.298	0.496
Bangladesh	**4.03**	400	1195	**1.64**	0.388	0.614
Bhutan	**5.87**	768	3357	**1.44**	0.512*	0.617
India	**4.82**	578	2078	**1.52**	0.431	0.647
Maldives	**2.67**	3777	7962	**1.12**	0.546*	0.719
Nepal	**2.94**	357	825	**1.58**	0.380	0.579
Pakistan	**1.58**	730	1174	**1.27**	0.404	0.560
Sri Lanka	**4.62**	1184	4013	**0.86**	0.625	0.780
World	**1.62**	**7141**	**10803**	**0.78**	**0.598**	**0.731**

Note:* HDI figures in Bhutan and Maldives are available for the period 2005-2018 and 1995-2018 respectively. grpcgdp=growth rate of real per capita GDP, pcgdp= real per capita GDP (in US $), hdi=human development index, grhdi= growth of hdi.

Source: Authors' calculation

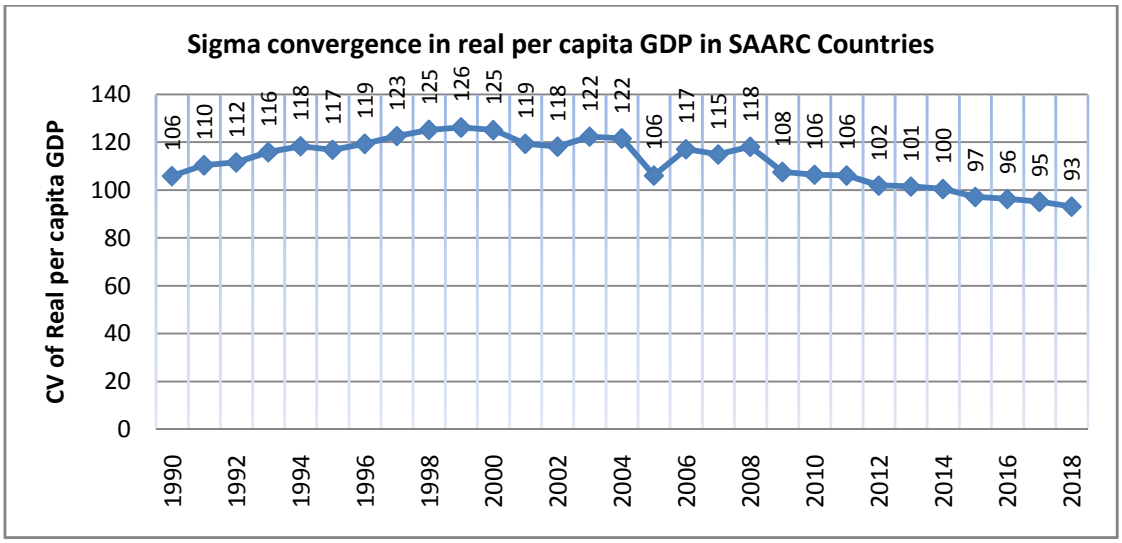
An analysis of both the results of σ-convergence and β-convergence reveals that there is an indication of convergence in HDI across SAARC countries during the study period (Table 7a and Table 7b). The coefficient of variation in HDI across SAARC countries declines from 26% in 1990 to 14% in 2018 (Figure 2). Figure 3 depicts that there is divergence in real per capita GDP among the SAARC countries during 1990-1999 (CV of PCGDP is increasing from 106% in 1990 to 126% in 1999) and thereafter there is an indication of convergence in income among them (CV of PCGDP declines to 93 in 2018).

Figure 2: Sigma convergence in HDI across SAARC countries during 1990 to 2018



Source: Authors' calculation

Figure 3: Sigma convergence in real per capita GDP in SAARC countries



Source: Authors' calculation

From the analysis of regression results of log of CV of HDI on time (year) it is observed that the coefficient of year is estimated significantly negative (-0.024) which implies inequality in HDI among SAARC countries decline at the rate of 2.4% per year during 1990-2018. The regression results of log of real per capita GDP (PCGDP) on year reveal that inequality in income across SAARC countries also declines significantly but at a slower rate (-0.7% per year) than that of in HDI during 1990-2018 (Table 7a).

Table 7a: Regression results on (sigma) convergence in HDI and PCGDP across SAARC countries

Regression results of log of CV of HDI (cvhdi) on time (year)
ln(cvhdi) = 51.316 – 0.024 year (t-value) (26.71) (-25.18) (p-value) (0.000) (0.000) R^2= 0.959, F (1, 27)= 633.8
Regression results of log of CV of PCGDP (cvpcgdp) on time (year)
ln(cvpcgdp) = 19.424 – 0.007 year (t-value) (6.51) (-4.93) (p-value) (0.000) (0.000) R^2= 0.474, F (1, 27)= 24.3

Source: Authors' calculation

Table 7b: Regression results of β-convergence in HDI across SAARC countries.

Unconditional β-convergence in HDI
ln(grhdi90-18) = -.529 - 1.045 ln(hdi1990) (t-value) (-3.17) (-5.36) (p-value) (0.019) (0.002) R^2= 0.827, F (1, 6)=28.68
Conditional β-convergence in HDI
ln(grhdi90-18) = - 0.969 - 1.275 ln(hdi1990) + 0.213 ln(grpcgdp)

(t-value)	(-4.47)	(-7.44)	(2.47)
(p-value)	(0.007)	(0.001)	(0.057)
R^2= 0.922, F (2, 5)=29.52			

Note: ln=log, gr=growth rate, hdi=human development index, pcgdp= real per capita GDP.
Source: Authors' calculation

The regression coefficient of growth rate of HDI on the initial value of HDI (1990) is found to be significantly negative (-1.045) which implies the convergence in HDI among SAARC countries during 1990-2018 (Table 7b). Conditional β-convergence regression results also indicate convergence in HDI; the coefficient of initial HDI is negative (-1.275) and it is statistically significant.

4.3 Analysis of Panel Data Regression results

The role of international labour migration (emigrants) and economic integration (trade openness) in human development is examined with the help of panel data regression analysis. The regression results are summarised in Table 8. An analysis of regression results reveals that the labour mobility across countries, particularly emigrants to developed countries from SAARC countries and the degree of trade openness significantly promote human development of the member countries of SAARC. The regression coefficients of these variables on the human development index are statistically significant. There is also a positive impact of trade openness and emigration on economic development (real per capita GDP) of the SAARC countries; regression coefficients are being statistically significant. It indicates that there is a positive role of international labour migration in the convergence of human development across countries. Thus, there is an urgent need of ensuring a regional conducive environment to access international labour markets and economic development in the SAARC region.

Table 8 Impact of labour mobility(emigrants) and trade openness on HDI and PCGDP in SAARC Countries

(Results of panel data Random-effects GLS regression*)

	Dependent variable= log of HDI (lnhdi)			Dependent variable= log of PCGDP (lnpcgdp)		
Independent Variables	Coef.	z-value	p-value	Coef.	z-value	p-value
log of emigrants* (lnemidev)	0.059	4.13	0.000	0.143	2.44	0.015
log of trade openness(lnto)	0.227	9.38	0.000	0.447	3.94	0.000
Constant	-2.106	-14.84	0.000	3.890	6.77	0.000
R-sq:						
within	0.887			0.629		
between	0.001			0.265		
overall	0.211			0.010		
Wald chi2	314.62	Prob>chi2=	0.000	68.79		0.000
BP test: chibar2(01)	110.68	Prob>chibar2=	0.000	111.47		0.000

Note: * emigrants from the member countries of SAARC to the developed countries.
HDI=Human development Index, PCGDP= Per capita real GDP,
Number of obs= 56, Number of groups=8, Obs per group= 7.

Source: Authors' calculation.

Further, an analysis of panel data regression results (summarized in Table 9) also shows that population pressure, income differentials, urbanisation and the policy of economic openness (in terms trade openness) are the crucial determinants of international labour migration (emigrants) of SAARC countries. The regression coefficients of all the models are statistically significant. Holding the size of population constant, the greater the income difference of a SAARC country from the world average income, the higher is the number of emigrants from that country. Trade openness (defined as percentage share of exports plus imports in GDP) positively promotes emigrants; the size of the population remains constant. The elasticity coefficient of income differentials (dgdp) is found 2.57 and that of trade openness variable is 0.941 and these are statistically significant. Another regression results of emigrants (emidev) on income differentials (dgdp) and level of urbanisation (urban) show that the income gap and the extent of urbanisation significantly influence international labour migration. The elasticity coefficient of urbanisation is significantly estimated to be 2.625. Thus, the higher the level of urbanisation (network) the higher is the ability to access international labour markets.

Table 9 Determinants of emigrants from SAARC to developed countries
(Results of panel data Random-effects GLS regression*)

	Dependent variable= log of emigrants (lnemidev)					
Independent	Model 1			Model 2		
log of Variables	Coef.	z-value	p-value	Coef.	z-value	p-value
Population('000)	0.96	5.69	0.000	1.158	8.58	0.000
Income difference (dgdp)	2.57	4.08	0.000	---	---	---
Trade openness(TO)	---	---	---	0.941	6.21	0.000
Constant	-20.72	-4.26	0.000	-3.252	-2.38	0.017
R-sq:						
within	0.594			0.673		
between	0.896			0.906		
overall	0.872			0.891		
Wald chi2	105.02			149.19		
Prob>chi2	0.000			0.000		
BP test: chibar2(01)	72.950		0.000	98.94		0.000

Note: *Log-Log Model, Income difference (dgdp)= world average PCGDP-SAARC country's PCGDP, Number of obs= 56, Number of groups=8, Obs per group= 7.

Model 3

ln(emidev) = -18.718 + 2.075 ln(dgdp)+ 2.625 ln(urban) R-sq: within=0.8817
(z-value) (-4.05) (4.08) (7.57) between=0.0003
(p-value) (0.000) (0.000) (0.000) overall=0.025
BP test: chibar2(01)=139.66, Prob>chibar2= 0.000
Where, emidev= emigrants from the member countries of SAARC to the developed countries, dgdp=income difference from the world average income, and urban= % of urban population.

Source: Authors' calculation.

V. Conclusions

The study examines convergence in human development index and real per capita income across SAARC countries in terms of both the methods of sigma (σ)-convergence and beta (β)-convergence during 1990-2017. The study also analyses patterns and trends in international labour migration of SAARC countries and it tries to assess the role of such labour mobility in human development. The analysis of the results of the study reveals that there is a clear indication of convergence in human development in the SAARC region. There is a positive role of international labour mobility in convergence in human development across countries. An analysis of panel data regression results reveals that the extent of emigrants from the member countries of SAARC to the developed countries and trade openness significantly impact on human development as well as economic development. Most of the member countries of SAARC have a comparative advantage to access labour markets of developed countries. The number of emigrants from each of the member countries of SAARC to Non-SAARC developed countries increases significantly during the study period and it positively promotes convergence in income and human development. Population pressure, income differentials, urbanisation and the policy of economic openness (in terms of trade openness) are the crucial determinants of emigrants of SAARC countries to the developed countries. India, Pakistan, and Bangladesh are the major contributors to international migrant stocks in the SAARC region. The refugees in the SAARC region are mainly concentrated in Pakistan. The remittance received per emigrant of the member countries of SAARC is found to be greater than the amount they have paid per immigrant. Thus, there is an urgent need to ensure a more conducive environment in the SAARC region to access international labour markets for greater economic integration and human development. The policy of economic openness, urbanisation and the extent of labour mobility across countries are the very important factors for the improvement of human development as well as economic development in the SAARC region.

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