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EDUCATION ATTAINMENT AND EMPLOYMENT IN INDUSTRIAL SECTOR: SOUTH ASIAN NATIONSWITHSPECIALREFERENCETO INDIA

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Abstract

South Asian nations have observed a hike in labor force participation rate in past few years. This highlights the ability of these nations to achieve higher rates of growth by optimally utilizing demographic dividend. The paper makes an attempt to study South-Asian nations with special reference to India and develop a linkage between education attainment measured as mean year of schooling and employment in industrial sector with poverty. The performance of nations in first section is analyzed on the basis of HDI performance (education and employment) and top three nations are further regressed to obtain it's linkage with poverty. It has been found that education plays a major role in India and further has maximum effect on poverty. India should majorly focus on education i.e. involve in higher expenditure on education provision. Next section deals provide recommendations that may be incorporated so as to combat poverty. The study is limited for a period of 2005-15 due to non-availability of data for most of the variables for further years. The study could be conducted for other nations too, though the paper primarily deals with south Asian nations (excluding Afghanistan).

Keywords:

South Asia;

Poverty;

Growth;

Education;

Employment.

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1. Introduction

Poverty is a challenge for world as a whole. The beginning of addressing this challenge is clear, simple and obvious that is the primary issue with poor is their low income. One of the best ways to alleviate poverty is to boost poor's income via provision of productive employment. One way to increase employment is to make labour more efficient. It implies providing labour with better training and skills; to state it direct, it has to start from scratch, i.e. with educating masses. Education is one way where an individual attains the skills and ability to perform task and attain employment. Increasing employment is a yet another challenge that requires attention specially in developing nations like India.

Education enrollment and education attainment are two terms sometimes used interchangeably, but have difference in their interpretation. The former one is static concept whereas the latter one is a flow concept. Education attainment highlights the process involved in acquiring education, thus it is taken as a measure to view development aspect so as to perform analysis. Further, as per employment distribution of various models it is assumed that skilled labour is required in industrial sector and education attainment is means to attain skills.

Further, developing skill sets via education would help one to occupy better job as an employee in industrial sector which further leads to growth and development, thus, combating with poverty. The paper specifically studies the virtuous cycle of education leading to employment and thus combating poverty for South Asian nations. Labour force participation rate has been highest for South Asia i.e.79.1%. These help nations to better utilize their man power and attain heights in demographic dividend.

According to the World Bank Report (Oct7, 2018) with growth topping 6.9 percent in 2018 and set to increase approximately to 7.1 percent next year, South Asia is firming up its position as world's fastest growing region, further extending its lead over East Asia and the Pacific.

South Asia consists of India, Bangladesh, Pakistan, Nepal, Srilanka, Bhutan, Maldives and Afghanistan. With approximate population of 1.78 billion encloses around two-third of world's poor. One of the biggest challenges faced by these nations is combating poverty. The purpose of the paper is to study the development record of South Asian nations and provide

recommendations for combating poverty. Due to non-availability of most of the data Afghanistan is excluded from the study. India has been performing well for past a decade in regard to human development indicators in comparison to other developing nations. Hence, special reference is given to India in this paper. India is often recognized as a low and middle income nation. In regard to performance in terms of Human Development Index as per UNDP report, India is among three top performing nations of South Asia. Despite the progress the made, the South Asian nation's poverty remains an overriding issue.

Few years back from now, that is, 2012-13, expenditure on education was 3.1% of the GDP. This share fell in 2014-15 to around 2.8% and further a drop to 2.4% was registered in 2015-16. Even though there has been increase in expenditure of social infrastructure, there has been fall in government expenditure on education as a percentage of GDP. India being a developing economy, there is not enough space to critically increase expenditure on education and health. However, given the limited resources, strengthening nation's education and health profile has been of great importance.

Between the years 2009-10 and 2015-16, the additional jobs created exceeded the number of entrants in the job market. With job creation at an aggregate level of 75 million, there were only 61 million people entering the job market (Labour Bureau data). With 3.2% of growth observed in job creation, well exceeded the rate of job seekers growth averaged around 2.4%. On the basis of categorization of labour done by Labour Bureau Survey (2015-16) self-employed individuals had income less than 10,000/month. Further, not enough work was available for individuals employed only part of a year.

The experience of nations, succeeded in accomplishing reduction of poverty significantly, points out the importance of sustained high growth to obtain this result. However, various studies points out that high growth alone is not sufficient to eradicate poverty: pattern, source as well as the manner in which its benefits are distributed are immensely important for achieving the goal of reduction in poverty. And in this regard, importance of education and employment as key linkages between growth and poverty is often mentioned.

While discussing about the pattern of growth that contributes more effectively to reduction of poverty, some studies critically state the importance of labor-intensive growth- World Bank (1990), McKay (1997) and ILO (2003). A linkage of both education and employment in industrial sector is used to analyze the link of economic growth with poverty.

2. Research Method

The methodology used in the present paper involves macroeconomic analysis of the linkage between employment, education and incidence of poverty. The first section of the paper compares and contrast the South Asian nations on the basis of Human Development Index(UNDP report), providing with top three best performing nations. The second section highlights the various dimensions of poverty of the top three performers and India. It involves econometric cross-sectional regression analysis for a decade (2005-15). An attempt has been made to investigate the significance of education and employment in industrial sector as strategic tools for poverty alleviation in India. Variables for the same are poverty (head-count ratio), Education (mean years of schooling) and Employment in industrial sector. The dependent variable will consist of annual percentage change in poverty, given by head count ratio. The regression analysis is followed for the four nations in total, i.e. Top three nations (on the basis of HDI performance) and India.

The study uses secondary data for analysis, taken from UNDP report, 2018, World Bank data for development indicators, Povcalnet.

3. Results and Analysis

The major two dimensions of poverty incorporate ‘consumption poverty’ according to which individuals or households are incapable of achieving consumption requirements. The second is human development dimension that measures degree of mortality, burden due to morbidity, and illiteracy prevailing in society. Between 1990 and 2017, HDI value of India increased from 0.427 to 0.640, the increase is of approximately 50% and it indicates country’s remarkable achievement in elevating a large chunk of population out of poverty.

3.1. South Asian Assessment

In South Asia, HDI of India is above the average of 0.638, compared to Bangladesh and Pakistan with same population size.

An examination of statistics in table-1 that overall India has made progress in terms of higher life expectancy and lower infant mortality rates. If one looks at the HDI values (2017), India lies in the top three HDI performers. Infant mortality rates lies close to that of Maldives. Table-1 indicates that progress lacks uniformity among the South-Asian nations. While Bhutan performed far better than India in terms of life expectancy at birth but it one of the bad performers in case of Infant mortality rates after Nepal. India's recovering growth has driven South Asian nations to the fastest growing region (World Bank bi-annual Report, 2017). Bangladesh has performed well by meeting goals well in time as per World Bank analysis. The country focuses on prioritizing education and health at micro level (UN Report). Pakistan fails to progress the same as Bangladesh. Literacy for Pakistan accompanied by Bhutan has been at 57%, i.e., lowest among South Asian nations. In nineties literacy of both male and female increased (table-2), but still there exist a large gap between literacy of women and men. Pakistan's School enrollment ratio is too lower as compared to other South Asian nations excluding Bhutan with lowest primary enrollment ratio. Though over the past few years, provincial governments has been assigned decision making authority to a great extent. The constitutional amendment (18^{th}) has provided with a larger number of key functions to provinces that focuses on agriculture, education, environment and health (World Bank Report). Moreover, funds have been allocated through NFC so as to enable provinces to perform desired functions. The amendments and progress made, is still far from satisfactory. From HDI trends for India, Srilanka, Maldives, Bhutan and Bangladesh, Srilanka has been towering the list followed by Maldives and India. For the period of 2010-14 HDI has been increasing at faster rate for both Bhutan and Bangladesh, however, this rate of growth observed a downward trend from 2014 onwards. Bhutan's HDI for 2017 is below the average of 0.645 for countries that fall in medium human development group

Table-1 Human development indicators for South Asian Nations

Country	HDI (value)	Life expectancy at Birth (years)	Infant mortality rate
India	0.639832911	70.604	28.4
Sri Lanka	0.770010247	68.803	34.6
Maldives	0.716864351	72.808	28.2
Bhutan	0.612417609	75.485	8
Bangladesh	0.608155837	70.565	26.8
Nepal	0.574038025	77.649	7.3
Pakistan	0.561602586	66.629	64.2

Table-2 Educational development for South Asian Nations

Country	Mean years of schooling	Gov expenditure on education	Adult literacy rate	Primary Enrollment ratio
India	6.4	3.8	69.3	115
Srilanka	10.9	3.5	91.2	102
Maldives	6.3	4.3	98.6	102
Bhutan	3.1	7.4	57	95
Bangladesh	5.8	2.5	72.8	119
Nepal	4.9	3.7	59.6	134
Pakistan	5.2	2.8	57	98

Table-3 Work and Employment for South Asian Nations

Country	Employment In Industrial Sector	Youth Un-employment rate
India	23.78700066	10.5
Srilanka	25.65299988	20.7
Maldives	24.79899979	13.8
Bhutan	9.748999596	10.2
Bangladesh	21.08499908	11.4

Nepal	8.109000206	4.3
Pakistan	23.73500061	7.7

Analysis on the basis of performance of nations in Human Development index, the top three performing nations include Srilanka, Maldives and India in order. Study in following section is based on the top performing South-Asian nations. It involves country wise regression analysis so as to compare performance of nations.

REGRESSION *MODEL*

The paper continues with analysis of top three HDI performing nation and establish relationship between education, employment in industrial sector and poverty. For analyzing relationship time series analysis is used for the selected nations under the period 2005-15.

The regression model is as follows-

$$\Delta POV = \alpha + \beta_1 EDU + \beta_2 GOV + \beta_3 IND + \varepsilon_1 - Srilanka \quad (1)$$

$$\Delta POV = \alpha + \gamma_1 EDU + \gamma_2 GOV + \gamma_3 IND + \varepsilon_2 - Maldives \quad (2)$$

$$\Delta POV = \alpha + \delta_1 EDU + \delta_2 GOV + \delta_3 IND + \varepsilon_3 - India \quad (3)$$

Explanation of variables

ΔPOV = per year % change in poverty, used as dependent variable.

α=Intercept term

EDU= Mean year of schooling measured in terms of years

IND= Employment in Industrial sector measured as percentage of total employment.

GOV= Spending on education by government, measured as percentage of GDP

ϵ_i = Error term, i= 1,2,3

Paper uses Ordinary least square method (OLS) to obtain regression estimates of coefficient from data set. The regression results for countries selected on the basis of HDI performance (time period: 2005-15) is presented in table-1. Each estimate of regression is done for the variables Education (EDU), Government expenditure on education (GOV) and employment in industrial sector (IND). The obtained results are unambiguous and robust. The variables have been tested for multicollinerarity, shown by table variance inflation factor table i.e. table-5. The

table depicts that the model does not suffer from the problem of multicollinerarity, as value of all the coefficients is less than 10. The statistical results are obtained by the help of Gretl software.

Table-4 Regression results (for Srilanka, Maldives and India)

Dependent variable: Head count ratio, Poverty Time period- 2005-15			
Country	**Srilanka**	**Maldives**	**India**
Independent variables	Estimated coefficient	Estimated coefficient	Estimated coefficient
Constant	47.2127** (15.96)	15.3392*** (4.26)	154.879*** (3.74)
Education	-4.32184* (1.43)	-3.25647*** (0.45)	-9.65986*** (2.03)
Government expenditure on Education	-1.53409* (0.78)	-0.91501** (0.32)	-16.278*** (2.55)
Industry	-0.176555* (0.08)	-0.19872*** (0.05)	-1.01455* (0.43)
R-squared	0.83	0.83	0.89
Adjusted R-squared	0.75	0.76	0.88
F-statistics	260.45	274.4473	886.05
P-value	0.000329	1.28E-07	1.63E-09

Standard error in uniformity

*** level of significance at 1 %

** level of significance at 5 %

* level of significance at 10 %

Table-5 Test for Multicollinearity (using Variance Inflation Factor)

Variable	Variance Inflation Factor (VIF)		
Country	Srilanka	Maldives	India
EDU	1.738	1.445	7.731
GOV	1.482	1.434	8.439
IND	1.432	1.019	5.229

Values > 10.00 may indicate problem of collinearity

REGRESSION ANALYSIS

The regression is estimated for three top HDI performers and thus three regression equations are used to interpret results for countries in isolation first and then compare them. The first regression equation is for nation Srilanka with head count ratio of poverty as dependent variable studied in relation with education, employment and government expenditure on education. All the variables are significant at 10% level, presenting a general view of poverty. The estimated coefficients show a negative sign, thus dependent variable is negatively related to the estimated coefficient and can be interpreted as follows.

With an increases in mean year of schooling (a year), poverty falls by 4.32%, on the other hand poverty declines by 1.53% with increasing contribution of government for education measured as percentage of GDP. Furthermore, increasing employment in industrial sector has least contribution to poverty reduction i.e. 0.17%. Since, the coefficient lies near to zero; it holds weak explanatory power to poverty reduction. Though the variable is negative it confirms that increasing employment reduces poverty. These variables explain around 75% variations in the explanatory variable, shown by adjusted R-square. F-statistics for the model is large enough to suggest that modeling for Srilanka is significant.

Around 85% percent of Srilanka's poor live in districts in the rural area, which usually lack access to quality education and such lack of education contributes to widespread unemployment, decreasing the living standard of people as already 45% of Srilanka's population live on less than $5/ day. All this further contributes to malnourishment and stunting, especially in children.

Though Srilanka's performance among South Asian nations is best but is trapped by poverty and one factor that can help nation to combat the evil is education and government participation in

provision of the same. There exist evident disparity across regions of Srilanka, in special regard to teachers, education quality etc (see table- in appendix) and regression table shows that education is a major factor that leads reduction in poverty.

Second regression equation corresponds to South Asian nation Maldives that follows Srilanka in HDI performance. The regression estimates shows that education and industrial employment is significant at 1% where as 5% level of significance prevails for the variable government expenditure on education. All the coefficients are negative, highlighting that there exist negative relationship between dependent and independent variables. Where an additional year of education reduces poverty by 3.2% and increase in public spending for provision of education by 1% of GDP reduces poverty by 0.91%. Similarly, poverty reduces by 0.19% when employment in industrial sector increases by 1% (as % of total employment). Though the coefficient for industrial employment is close to zero, it significantly contributes to reduction in poverty but is a weak contributor.

Maldives is the first South Asian nation labeled as "MDG Plus" nation as it achieved five out of eight United Nations MDGs before 2015. In case of Maldives focus should be laid on education and also allocation of funds towards education.

Third regression equation for the nation i.e. India lies that third among the South Asian nation in terms of HDI performance. The regression coefficients are statistically significant contributors to poverty reduction. Industrial employment is significant at 10% level, whereas, variables like education and government expenditure on education is significant at 1% level of significance. An additional year of schooling reduces poverty by 9.6%, whereas government expenditure on the same contributes more i.e.16.278% towards poverty reduction. On the other hand industrial employment to is negatively related to poverty but contributes less that 2% to the cause of poverty reduction. These variables explain around 89% of variation in poverty and also F-statistics is significantly large to conclude that modeling for the nation India is appropriate.
Education, more specifically provision of education to population may be one important factor that helps nations to combat poverty. Moreover, employment also plays an important role which

is most significant for nation India. The next section thus provides recommendation for improvement in education and employment.

3.2. Policy Recommendations

Education system is one system in the 21st century that ties our present generation with future citizens. In most of the nations, state is responsible for the provision of education to its citizens. Private schools are considered as preserve for elite class, as public education could not meet the needs of their privileged children. Despite strong progress in form of institutions and universities, India's participation is low when compared with nations like Brazil, China and UK. The biggest challenge faced by India is to create educational system for higher studies which would allow youth to achieve optimum potential. Provision of abundant and quality education is twin-challenge of India's government that needs to be addressed. Indian low presently restricts setting of foreign institutions' campus in the country.

Major recommendations for improving education setup

1. Improvement in accountability

Just the allotment of duty gives authority, but lacks responsibility and accountability which is important to ensure achievement of results. Cases have been reported where out of 80,000 students only a single could pass and no public school accounted for such low performance. It could because of lack of incentive or rewards provided to teachers so as to improve performance of students.

Thus, focus should be laid to increase accountability among teachers and this could be done by motivating them to actually be responsible for students' performance.

2. Impartment of skills

An individual studies so as to generate enough income that could maintain steady consumption throughout life. However, students' dropout rate has been unsteady, and one major reason for such staggering rate is inability of secondary level education to guarantee job in future.

It is well said that 'enabling, rather than regulating' is the need of the hour. Vocational studies would help imparting skills among children which include subjects like nursing, retail management etc. For this accountability and clearly stated directions are necessary.

3. Address gaps in Indian education

Only investing in setting of infrastructures for educational institutions is not the target, rather there should exist connect between students and teachers. One initiative for such enhancing such connect includes setting up of smart rooms, that provide environment and help in conferencing, interactive group discussion etc. This only helps students and teachers connect but also enable teachers to improve their teaching method at digital platform.

4. Allowing foreign educational institutions to set up in India

Not franchising and validation, but provision of higher education through bricks and mortar. Building of foreign campus in India will help the nation to achieve optimality in utilization of demographic dividend of the nation. This will free up space in domestic institutional set up as ones who can afford this education would move and then government could increase their expenses towards domestic institutions.

There may exist some years of no or low growth, while there also exist catch-up years in which growth in jobs is faster. According to World Bank, India has been creating approximately 7, 50,000 jobs for every 1% increase in GDP, thus for an average growth rate of 7% there should creation of at least 5.7 million jobs if not more. But the survey has shown a downfall of 3.5 million jobs in previous surveys. The exact point-to-point data cannot presented for which official survey happens only once in 10 years, with matters of base year. It is important to capture data for jobs frequently so that long term trend could be used for to define and solve jobs problems. Thus, it is important at the first hand to put hands on right frequency data.

India is an agrarian economy but it no longer can cater the needs of half of the population, and pressure on jobs is created with migration from rural to urban areas in search of jobs. Technology creates more jobs , but in long run jobs are polarizing. It can been seen that artificial intelligence (AI) and other machine learning jobs fall short of supply, while jobs at the bottom-end are mushrooming. It has been a common site an Amazon, Big basket and Uber delivery man

whizzing past every passing minute. Further, services like house cleaning, haircuts etc are delivered at one's door step. Jobs that would vanish are middle ones like bank branch staff, workers in telecom industry etc.

Remedies for job sector

1. Improving information system for labour market

It's important to provide skill training and certification, this could require public and private partnership that would help to capture demand for skills and further involve in investment towards skill-building process.

2. Labor market reforms

Government could engage is subsidizing social security payment process so as to ensure growth in jobs. It's even important to construct reforms so as to absorb youth and corner benefits from demographic dividend.

3. Focus on medium scale units

Enterprise-to-job ratio for MSE is highest, thus it becomes important for India to take advantage and focus on expansion. For such expansion a deep change in labour laws and focus on credit availability is required.

4. Smart urbanization and change in spending patterns

Concentrated urbanization would do no good and serviced by infrastructure, job growth tend to be at sub-optimal level. Further there is a need to shift government expenditure on farm loans, subsidizing food rather than on public goods. This change in expenditure pattern would help in creation of more jobs. The basis tendency of economy is observed that movement from basic level of poverty to middle and higher levels of income, government grows in size and so employment.

4. Conclusion

The paper lays stress on South Asian nations and compares them on the basis of their HDI performance. Further, the nations are compared and contrasted for their HDI rankings,

educational and employment status. Such comparison provides us with top three HDI performers i.e. Srilanka, Maldives and India, all in performance order. Further, paper deals with regression analysis for these top performers so as to develop a relation of poverty with education, employment and government expenditure on education. It can be seen that education and government role in provision of education plays prime role in poverty reduction for India (see table-1, coefficient- -9.65986 and -16.2782 respectively). Second most important but have less impact on poverty reduction is employment in industrial sector. However, it is important to also focus on employment generation for population so as to develop sources of income and help individuals to combat poverty by achieving minimum consumption needs. Allowance for foreign institutional set up would help decrease load of public institutions and help youth to take advantage of this opportunity and help India to gain from its demographic dividend. Further, in work and employment there is need for labour market reforms and helping medium scale units to progress and foster.

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