EDUCATION AS A DETERMINANT OF SOCIO-ECONOMIC DEVELOPMENT IN INDIA: AN EMPIRICAL INVESTIGATION

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ABSTRACT

Education is regarded as one of the major tools in the development process. Education can go a long way in the growth of productivity, promote employment avenues, better health etc. Education can improve the socio-economic development of a state or a region by providing skilled workforce, higher employment and also helps in reduction of poverty in the society. These in turn help in increasing per capita income, improve people's status, reduce population growth, improve living standards, improve environmental quality and also help in the decision making of the people and thus help in attaining the broader objective of socio-economic development. This paper makes an attempt to examine the relationship between education and socio-economic development in India over the period 2008 to 2018. Education Development Index and Socio-Economic Development Index were developed on the basis of indicators taken under consideration to find out whether there exists any relationship between education and socio-economic development in India. A simple regression was conducted among them and the results shows that there exists a significant association between education and socio-economic development.

Key words: Education, Education Development Index, Socio-Economic Development, Socio-Economic Development Index, Principal Component Analysis.

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1. INTRODUCTION

One of the major tools in improving and enhancing development of any area is promoting education. A qualitative citizenry depends on the positivity in the social changes. The overall development of any region or state is possible thus by educating its citizens. Education can help the people in uplifting productivity, promote employment, better health etc. Economic development depends on the educational status of the people. Socio-economic status of the people can be improved through education. Education provides people with knowledge which

in turn helps in improving their social and economic status. Education can help in promoting economic development either directly or indirectly. In the first instance education helps in increasing the knowledge and skills of the people which further increases productivity. Indirectly, education helps in increasing people's knowledge which in turn helps in taking proper diet, precautions etc. and further helps to stay healthy. This in turn accelerates ability to work of the people and thereby increases economic activity.

Education further helps by making the people aware of the ways and means by which they can move in the right direction by eliminating unnecessary social constraints which hinders the development of the society. Instances may be the discrimination of a new born child on the basis of gender. More the people get educated, the biasness gets reduced and this can go a long way in reducing the social distress and hence promote development. Education further plays a significant role in exploring public information and thereby helps to get rid of the problem of information asymmetry. It also helps to be more concerned regarding health and nutrition (Mukudi, 2003) [6]. T. Schultz (1961) [9] advocated that human capital plays a significant role in promoting economic growth and development. Thus, education can go a long way in enhancing the socio-economic development in any nation or region or state.

2. REVIEW OF LITERATURE

The linkage between education and socio-economic development can be explained in three orders. Education helps in providing skilled workforce, higher employment avenues and it also helps in removing poverty in the society and the whole economy. This is the intermediate impact of education. This first order benefits helps in promoting higher per capita income, improve the status of the people, reduce the growth of population, improve the quality of the environment, increase the living standard of the people and also helps in improving the decision makings of the people. The second order benefit in turn helps in attaining the broader objective of socio-economic development. Thus, education helps in socio-economic development (Paul, 2016) [7].

Few studies were made to establish and examine the relationship between education and some aspects of development which are mentioned below:

Benhabib & Spiegel (1996) [1] made a study to establish relationship between the role of human capital and economic development on the basis of cross country data and found that there is significant relationship between the two.

Gurung (1998) [2] made an assessment on the tribal people to find out whether there is any relationship between the education level and of the tribal people's socio-economic status in the jharsuguda district of Orissa. The study found that higher the education level, the higher was the status of the people in the tribal district under study.

Pradhan (2007) [8] examined the causal relationship between economic development and educational progress for the period 1950-2000 using Error Correction Mechanism (ECM). The finding was that unidirectional causal relationship exists between them.

Swami (2010) [10] made a study to find out the transformations in the rural areas among the tribal community in Wynad through education. He found that many rural transformations took place in Wynad, Karnataka among the tribal community through education.

Halder & Mallik (2014) [3] made a study to find out how human capital can lead to economic growth by taking India as their study area. They found that there is a positive relationship between human capital formation and economic growth in India.

Kainuwa (2014) [4] analyzed the effect of socio-economic status on academic achievement. In this study he found that socio-economic status to certain extent effects the academic achievements.

From the literature review we found that different studies were made on different parts of the world and India but there are only a few studies focusing on education and socio-economic development at all India level. Thus the present paper makes an attempt to study the education and socio-economic development in India as a whole.

3. OBJECTIVES OF THE STUDY

The main objectives of the study are:

- To examine the educational and socio-economic development pattern in India over the period 2008-2018.
- To examine whether there is any relationship between education and socio-economic development in India.

4. RESEARCH QUESTIONS

- Is there any difference in educational and socio-economic development in India over the years 2008-2018?
- Whether there is any significant relationship between educational attainment and socio-economic development in India?

5. METHODOLOGY

The present study is based on data collected from different published secondary sources. These are Directorate of Economics and Statistics, Govt. of India, Indiastat, different published government reports and records, census reports etc. In this study a time frame of 10 years is considered i.e. a duration starting from 2008 to 2018 has been taken into consideration.

A number of indicators are chosen which are being taken as proxy to estimate the relationship between education and socio-economic development in India over the years. An index was computed to obtain the education development index and socio-economic development index with the help of principal component analysis.

The indicators selected to obtain Educational Development Index (EDI) are the same as used by UNDP to calculate the Human Development Index (HDI). These are:

- Mean Years of Schooling (Y_1)
- Expected Years of Schooling (Y_2)
- In order to calculate the socio-economic development index (SEDI) the following indicators are considered:
- Infant Mortality Rate (Y_3)
- Percentage of people below poverty line (Y_4)
- Maternal Mortality Rate (Y_5)
- Per capita availability of power (kilowatt hour) (Y_6)
- No. of Government Hospitals per lakh population (Y_7)
- Per capita Net Domestic Product (Y_8)
- Credit Deposit Ratio (Y_9)

Apart from that, there are some other indicators but due to the constraint in data availability the above mentioned indicators are taken as a proxy for the study.

In order to compute the educational development index (EDI) and Socio-Economic Development Index (SEDI) the following equation is being constructed:

$$EDI = W_1Y_1 + W_2Y_2 \dots\dots\dots (1)$$

Where, W_1 and W_2 are weights assigned to variables Y_1 and Y_2

$$SEDI = W_3 Y_3 + W_4 Y_4 + W_5 Y_5 + W_6 Y_6 + W_7 Y_7 + W_8 Y_8 + W_9 Y_9 \dots\dots\dots (2)$$

Where, $W_3, W_4, \dots, W_9$ are the weights of $Y_3, Y_4, \dots, Y_9$

The weights are being computed using the following method:

$$W_i = F_{ij} \cdot V_j \dots\dots\dots (3)$$

Where,

W_i = Weight of the i^{th} variable

F_{ij} = Factor Loadings of i^{th} variables and j^{th} factor which are representing the correlation between X_i and factor j

V_j = Variation explained by j^{th} factor

The use of principal component analysis is used to compute the factor loadings. In order to fulfill the second objectives i.e. to find out whether there is any relationship between education and socio-economic development the use of regression model is used which is given below:

$$\ln SEDI = \alpha + \beta \ln EDI + u_t \dots\dots\dots (4)$$

Where, $\ln EDI$ and $\ln SEDI$ are the logarithm of Educational Development Index and Socio-economic Development Index, t represents the time period from 2008 to 2018, α is the intercept term, β the coefficients of education development index and u_t is the error term.

This method is used by Kaur & Kaur (2018) [5] to assess the infrastructure role on economic development in the state of Punjab.

6. FINDINGS AND DISCUSSIONS

In order to assess the educational development in India over the period 2008-2018 the Educational Development Index (EDI) were computed which is presented in the table 1 below:

Table 1 Educational Development Index (EDI) in India (2008-2018)

Years	EDI
2008	19.2
2009	20.8
2010	24.9
2011	28.1
2012	28.5
2013	29.0
2014	31.6
2015	32.2
2016	35.7
2017	36.2
2018	41.7

Source: Author's Computations

Table 1 represents the educational development index on the basis of two indicators i.e. mean years of schooling and the expected years of schooling. It must be noted that the speed of progress is slow over the years 2008-2018. It is also found that EDI was only 19.2 in the year 2008 which rose to 29 in 2013 and in 2018 rose to 41.7. There is continuous improvement in educational attainment over the years but the pace at which it is taking place is not satisfactory.

The socio-economic development in India over the period 2008-2018 is presented in table 2:

Table 2 Socio-Economic Development Index (SEDI) in India (2008-2018)

Years	SEDI
2008	92.5
2009	102.7
2010	105.3
2011	119.2
2012	124.7
2013	129.9
2014	130.2
2015	140.7
2016	144.5
2017	144.9
2018	147.2

Source: Author's Computations

Table 2 represents the socio-economic development in India over the period 2008 to 2018. In the table it can be seen that SEDI is improving at a rapid rate. The SEDI was only 92.5 in 2008 which rose to the tune of 129.9 in 2013 and further improved to 147.2 in the year 2018. Thus, in the context of socio-economic development the progress is improving rapidly over the years 2008 to 2018.

Table 3 Results of Factor Analysis

Sl No.	Indicators	Factor 1	Factor 2	Communalities	Weights	Weights (%)
1	Infant Mortality Rate	-0.35	0.125	0.01	0.15	40.31
2	Percentage of people below the poverty line	-0.36	0.13	0.74	0.12	4.22
3	Maternal Mortality rate	0.34	0.28	0.01	0.31	11.20

4	Per capita Availability of power	0.32	0.31	0.00	0.24	10.77
5	No. govt. hospitals per lakh population	0.36	0.11	0.03	0.31	12.12
6	Per capital Net State Domestic Product	-0.23	0.52	0.01	0.39	17.49
7	Credit deposit ratio	0.35	0.38	0.01	0.28	12.9
	Variance (%)	78.32	14.90	Total	2.35	
	Cumulative Variance (%)	78.32	93.22	CV (%)	74.39	

Kaiser-Meyer-Olkin Measures of sampling adequacy= 0.815

Significance of Barlett's Test of Sphericity= 0.0

Source: Author's Computations

Table 3 represents the factor analysis results. The factor analysis is possible as the KMO and Barlett's test is significant. The first and the second factor explained the maximum variance i.e. 78.32% and 14.90% respectively. Total variation explained by these two factors is 93.22%.

Table 4 Regression Model Results

Model	Co-efficient	t-value	p-value	VIF
Constant	-2.23	-2.90	0.02	-----
lnEDI	1.54	10.91	0.00	4.97
R-square	0.89			
F-statistics	94.9%			

Source: Author's Computations

Table 4 shows the results of the regression model. Table 4 shows that the p-value of t statistics is found to be significant at less than 5% level. Thus, it can be inferred that there exists significant impact of educational development index on socio-economic development index in India.

7. CONCLUSIONS

From the above analysis it can be said that education is one of the important tool to accelerate the overall development of a country. It has the power to improve efficiency of the nation both directly and indirectly. In the study, it is found that the educational achievement is not up to the mark. The pace of educational development is slow in India which is visible in the educational development index. The performance in context of socio-economic development however is improving over the years. The analysis also revealed that there is significant relationship between education and socio-economic development. To improve educational status of the

people, different policy measures being taken time to time in India but their execution has not been up to the mark. Efforts are there on the part of the central, state and local governments and the NGOs for the improvement of the system of education throughout the country. Efforts are also there to improve the educational status of the backward classes. However, bad institutions, lack of adequate digital infrastructure have led to the backwardness of the education system in India. Finally, structural, social, ideological restrictions are to be removed to reap the fruits of the educational policies in India.

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