

Maninder Sarkaria, Shiwani

## Relationship between Expenditure on Education and Indicators of Economic Development (NSDP and PCI) in Punjab

<sup>1</sup>Maninder S. Sarkaria, <sup>2</sup>Shiwani

<sup>1</sup>Deputy State Project Director, RMSA, Punjab

<sup>2</sup>Assistant Professor, S.G.A.D. College,

Khadur Sahib, Tarn –Taran, Punjab.

<sup>1</sup>mssarkaria@hotmail.com, <sup>2</sup>Shiwani.319@gmail.com

### Abstract

The significance of education for the prosperity of mankind can never be overlooked. Its contribution has been acknowledged and applauded by all societies in all times. It plays progressive role in every sphere – be it mental, moral, economic, social, cultural, or political and as such education is widely referred to as engine of growth. This paper examines the relationship between expenditure on general as well as technical education and two Indicators of economic development viz. Net State Domestic Product (NSDP) and Per Capita Income (PCI). The results of correlation of expenditure on general education (in absolute terms as well as in terms of percentage of total outlay) with PCI and NSDP reveal positive and statistically significant relationship. However, the relationships of expenditure on technical education (in absolute terms as well as in terms of percentage of total outlay) with PCI and NSDP are not found to be statistically significant. The paper concludes with the emphasis that the public expenditure in education sector of India should be duly enhanced.

### Introduction

As literacy and education is now acknowledged as the key to development, all the countries cutting across different development levels have been assigning priority to education and taking steps to expand and update their education system. The international bodies like the World Bank and UNESCO have also been focusing on the development of education sector. However, despite according high priority to education, developing countries have failed to allocate adequate funds to education. While the developed countries spend around 6 percent of the GNP on education, developing countries are still hovering around 3 to percent (Atal 2007).

Education may be taken as a factor of production. It is prime mover of growth and development of an economy and is widely described as an agent of economic and social transformation. Both,

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Maninder Sarkaria, Shiwani

the economists and the educationists have shown interests to study the relationship between economic development and education. It has been observed that, by and large, developed countries perform better on educational indicators and also enjoy better social status. This paper examines the relationship between expenditure on general as well as technical education and two indicators of economic development viz. NSDP and PCI.

### Objectives

The major objective of this paper is to study the relationship between expenditure on education and economic development in Punjab. Specifically, the paper seeks:

1. To investigate the outlay on education in Punjab;
2. To analyse the trends in NSDP and PCI in Punjab state; and
3. To examine relationship between expenditure on education and NSDP & PCI in Punjab.

### Data Base and Methodology

To achieve above listed objectives of the study, the data regarding expenditure on education, Net State Domestic Product (NSDP) and Per Capita Income (PCI) have been collected from secondary sources such as Statistical Abstract of Punjab, Census of India, NSSO, etc. Relationship between expenditure on general as well as technical education and Indicators of Economic Development (NSDP and PCI) has been analysed by employing Pearson Correlation.

### Outlay and Expenditure on Education

Table 1 and Figure 1 contain the outlay and expenditure in different five-year plans on general education (all stages).

**Table 1**  
**Punjab: Outlay and Expenditure in Different Five-Year Plans on General and Technical Education (₹in Lakh)**

Plans	Approved outlay on General education (% age of total outlay)	Technical Education (Percentage of total outlay)	Expenditure on Education
Fourth Five Year Plan (1969-74)	2100.00 (7.16%)	85-00 (0.28%)	2307.69
Fifth Five Year Plan (1974-78)	4327.00 (4.21%)	125-25 (0.12%)	3056.43
Sixth Five Year Plan (1980-85)	5300.00 (2.71%)	300-00 (0.15%)	5470.58
Seventh Five Year Plan (1985-90)	7637.00 (2.32%)	2504-00 (0.76%)	6371.27
Eighth Five Year Plan	21683.00 (2.62%)	19600-00 (2.98%)	23714.82

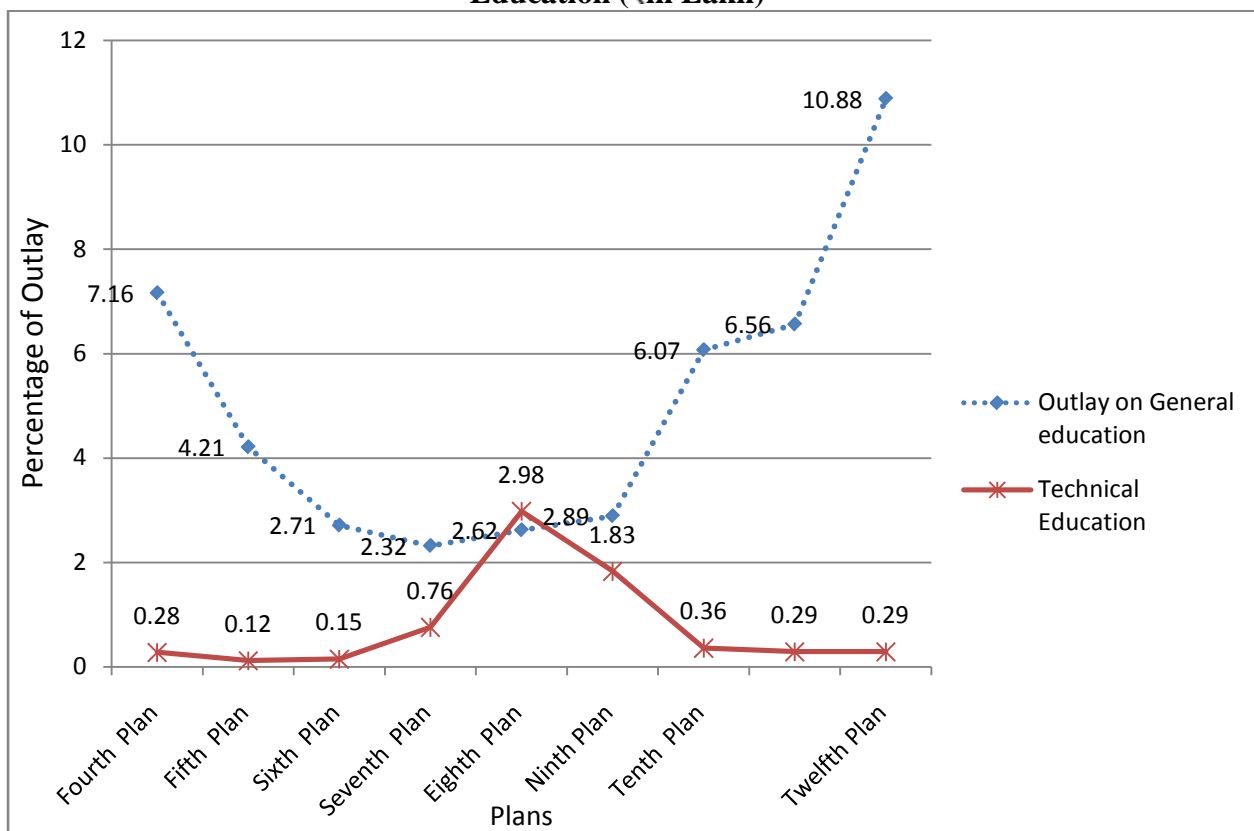


Maninder Sarkaria, Shiwani

(1992-97)			
Ninth Five Year Plan (1997-2002)	41310.49 (2.89%)	26202-50 (1.83%)	81532.22
Tenth Five Year Plan (2002-2007)	141089.77 (6.07%)	6688.00 (0.36%)	54097.14
Eleventh Five Year Plan (2007-2012)	189892.00 (6.56%)	9575.11 (0.29%)	239447.37 (7.32%)
Twelfth Five Year Plan (2012-2017)	1001746.27 (10.88%)	26285.00 (0.29%)	-

**Source:** Statistical Abstract of Punjab (1970-2014), different Plans and also recorded from department of higher and technical education.

**Punjab: Outlay and Expenditure in Different Five-Year Plans on General and Technical Education (₹in Lakh)**



**Figure 1**

Figures in Table 1 indicate that there has been a regular increase in the allocation of funds to general education as well as technical education from the Fourth Plan to the Ninth Plan and the expenditure on education has also been on rise during these plans. But the allocations have been low for technical education during the next two plans. However, in terms of percentage of total outlay there is a declining trend as to the outlay on general education; it has declined to 2.89 percent in the Ninth Plan from 7.16 per cent in the Fourth and 4.21 percent in Fifth Plan. Hence, it is obvious that the education sector did not get deserving importance in successive five years until



Maninder Sarkaria, Shiwani

the Ninth Plan. The percentage outlay has increased significantly in the Tenth Plan; it is more than 6 percent from Tenth to Twelfth Plan which is quite satisfying. As for the technical education, except during Eighth and Ninth Five Year Plans it got paltry allocations.

### State Domestic Product

The Punjab state's economic performance has been different during different time periods. The economy of the state grew at the rate of 4.8 per cent during 1965-66 to 1975-76, while the growth rate was 3.5 per cent in the national economy during this span (Department of Planning)<sup>3</sup>. Thereafter, the state economy grew at a pace slower than the other states as well as the Indian economy. In the 1980s, Punjab economy grew at the rate of 5.3 per cent per annum as against 5.5 per cent of the national economy. During 1991-92 to 1997-98, the state economy grew at the rate of 4.71 per cent per annum as against 6.9 per cent of the national economy. The state achieved growth rate of 9.25%, 6.55% and 7.84% in 2007-08, 2008-09 and 2009-10 respectively, as per the new series of National Accounts. The corresponding figures for the country's growth stand at 9.34%, 6.76% and 7.96%<sup>4</sup>.

**Table 2**  
**PCI and NSDP: Punjab (1980-81 to 2009-10)**

Year	NSDP (in rupees crores)	PCI (in rupees)
BASE YEAR 1980-81		
1980-81	4449	2674
1981-82	5285	2848
1982-83	5838	2906
1983-84	6456	2904
1984-85	7381	3011
1985-86	8347	3249
1986-87	9174	3302
1987-88	10816	3410
1988-89	12495	3526
1989-90	15055	3730
1990-91	16738	3737
1991-92	20245	3841
1992-93	23280	3932
1993-94	27547	4022
BASE YEAR 1993-94		
1993-94	27068	12710

<sup>3</sup> [http://planningcommission.nic.in/plans/stateplan/sdr\\_punjab/sdrpun\\_ch1.pdf](http://planningcommission.nic.in/plans/stateplan/sdr_punjab/sdrpun_ch1.pdf)

<sup>4</sup> <http://pbplanning.gov.in/pdf/Writeup%20AP%202011-12.pdf>, also referred to at <http://www.pbplanning.gov.in/pdf/Speech%20Meeting%20at%20New%20Delhi%20on%2023-5-2011.pdf> retrieved on 30-04-2012



## Maninder Sarkaria, Shiwani

1994-95	30528	12784
1995-96	34218	13812
1996-97	39112	14333
1997-98	43099	14809
1998-99	49612	15145
1999-2000	54257	15210
BASE YEAR 1999-2000		
1999-2000	61139	25631
2000-01	67779	25992
2001-02	71260	25955
2002-03	73494	27075
2003-04	79840	27905
2004-05	85761	32948*
2005-06	96108	33741*
2006-07	107591	36759*
2007-08	128303	39296*
2008-09	148008	41108*
2009-10	173993	43539*

\* Base Year 2004-05

Data contained in Table 2 on PCI and NSDP shows that Punjab's NSDP as well as PCI have rising trend. The state had been ranked first in terms of per capita income since its formation in 1966. However, after the introduction of economic reforms in the 1990s, it lost that place.

### **Relationship between Expenditure on Education and Indicators of Economic Development (NSDP and PCI)**

In this section we have sought to see the association of expenditure on education with NSDP and PCI. NSDP is one of the primary indicators used to gauge the health of a state's economy. PCI indicates the financial health of the state at the micro level. We expect that expenditure on education in the state would have positive association with its NSDP and PCI. Table 3 contains data on expenditure on general education and technical education in the state in absolute terms as well as in terms of percentage of total outlay. Both PCI and NSDP are made comparable by converting them on the basis of 1980-81 as base year. A cursory look at the data reveals that expenditure on general as well as technical education are positively associated with NSDP as well as PCI; which means increase in expenditure on education enhances NSDP and PCI.

**Table 3**  
**Punjab: Expenditure on General Education and Technical Education(₹ in Lakh)**



## Maninder Sarkaria, Shiwani

Year	General Education	%age of Total Outlay	Technical Education	%age of Total Outlay
1980-81	626.60	2.09	15.01	5.05
1981-82	900.32	2.65	37.71	0.1
1982-83	1000.43	2.60	27.67	0.08
1983-84	1330.00	3.02	60.00	0.14
1984-85	1705.00	3.49	82.50	0.17
1985-86	643.56	1.30	151.13	0.31
1986-87	763.73	1.12	343.77	0.51
1987-88	1246.00	1.66	440.00	0.59
1988-89	2400.00	2.82	597.00	0.70
1989-90	2129.26	2.69	525.00	0.66
1990-91	1647.50	1.82	1000.00	1.10
1992-93	1572.74	1.84	2867.59	3.35
1993-94	5091.00	4.07	3427.00	2.74
1994-95	5138.02	3.62	3633.83	2.56
1995-96	5130.23	3.23	4141.50	2.61
1996-97	7780.01	6.22	4541.82	3.63
1997-98	9879.21	4.91	3073.16	1.53
1998-99	15582.50	7.77	2677.70	1.34
1999-2000	18224.86	10.40	4363.04	2.49
2000-01	19935.65	7.38	5106.50	1.89
2003-04	6237.66	3.92	203.48	0.48
2004-05	10227.07	5.23	216.67	0.11
2005-06	15549.30	4.14	278.80	0.07
2006-07	17277.92	3.0	238.04	0.04
2007-08	15549.30	4.14	278.80	0.07
2008-09	53565.02	7.73	851.76	0.12
2009-10	37559.02	7.55	2659.54	0.54
2010-11	62761.11	7.54	2977.44	0.36
2011-12	64282.87	8.62	3086.37	0.41
2012-13	165376.89	12.44	4315.00	0.32
Revised outlay				
2013-14	122228.94	10.35	1412.52	0.11
Actual outlay				
2014-15	114254.74	7.56	2657.09	0.17
Actual Outlay				
2015-16	182085.13	8.60	3146.55	0.15
Approved Outlay				
2015-16	181134.18	9.01	4755.33	0.24
Revised Outlay				
2016-17	210653.81	8.27	3174.00	0.12
Approved Outlay				

**Source:** Statistical Abstract of Punjab (1970-2014), Annual Plans

Maninder Sarkaria, Shiwani

We have computed Pearson correlation to estimate the direction and extent of correlation between expenditure on education and NSDP&PCI. The results are contained in Table 4. Expenditure on general education in absolute terms as well as in terms of percentage of total outlay is positively and significantly associated with PCI and NSDP. The extent of correlation of PCI and NSDP with expenditure on general education in absolute terms are +0.813 and +0.833 respectively. While the extents of correlation of PCI and NSDP with expenditure on general education as a percentage of total outlay are comparatively low and are statistically significant at lower level of significance; specifically the coefficients are +0.498 and +0.491 respectively, no statistically significant relation is revealed between expenditure on technical education in absolute terms as well as in terms of percentage of total outlay with PCI as well as with NSDP.

**Table 4**  
**Correlations: Expenditure on General Education, Expenditure on Technical Education, NSDP and PCI**

	PCI	NSDP	Gen Edu.	Gen Edu.%	Tech Edu.	Tech Edu. %
PCI	1	.975**	.813**	.498*	.276	-.090
NSDP	.975**	1	.833**	.491*	.181	-.135
EXP <sub>Gen</sub>	.813**	.833**	1	.799**	.476*	.023
EXP <sub>Gen%</sub>	.498*	.491*	.799**	1	.637**	.218
EXP <sub>Tech</sub>	.276	.181	.476*	.637**	1	.623**
EXP <sub>Tech%</sub>	-.090	-.135	.023	.218	.623**	1

No. of observations= 24

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### Summary and Policy Implications

There has been a regular increase in the allocation of funds to general education as well as technical education from the Fourth Plan to the Ninth Plan and the expenditure on education has also been on rise during these plans. But the allocations have been low for technical education during next two plans. However, in terms of percentage of total outlay there is a declining trend as to the outlay on general education; it has declined to 2.89 percent in the Ninth Plan from 7.16 per cent in the Fourth and 4.21 percent in Fifth Plan. Hence, it is obvious that the education sector did

Maninder Sarkaria, Shiwani

not get due importance in successive five years until the Ninth Plan. The percentage outlay has increased significantly in the Tenth Plan; it is more than 6 percent from Tenth to Twelfth Plan which is quite satisfying. As for the technical education, except during Eighth and Ninth Five Year Plans it got paltry allocations. The results of correlation of expenditure on general education (in absolute terms as well as in terms of percentage of total outlay) with PCI and NSDP reveal positive and statistically significant relationship.

It is widely acknowledged that the countries which consider education a public good they reap benefit of greater economic and social progress. Although the National Education Policies of 1968 and 1986/92 had recommended 6% of GDP as the norm for the national outlay on education but the actual expenditure on education has remained below this level. NEP 2016 (Draft Report) has once again brought into focus the need to enhance allocations to the education sector to reach the desired target. It is rightly reiterated in the NEP 2016 (Draft Report) that education, in Indian context, should be considered a public good and there is a need for greater public investment in the sector and that the government will take steps for reaching the long pending goal of raising the investment in education sector to at least 6% of GDP as a priority.

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