

# Effects of Education on Economic Growth: Evidence from Pakistan

Hina Ali<sup>1, \*</sup>, Aasma Jabeen<sup>2</sup>

Department of Economics, the Women University, Multan, Pakistan

## Abstract

Deliberations on the issue reveal the significance of education in improvement of economic condition by disseminating quality education. The observations gathered by developing countries evince that education greatly influences economic development. The work chiefly aimed at identifying share the key macroeconomic variables contributed towards the growth of Pakistan's economy during the period from 1973-2013. Particular emphasis was laid down on four cardinal education levels specifically speaking Preliminary School Enrolment (PSE), Middle School Enrolment (MSE), Higher School Enrolment (HSE) and allied educational institute enrolment playing instrumental role in aggregate output. Several variables determine Basic Health Units (BHUs) as fundamental macroeconomics variables. It has been derived that the psychological behaviour of individuals emerges a chief driving force for financial development instead of ordinary school fulfilment, individual income and circulation of salary. The required size of progress makes it clear that end to the financial hole with mechanical nations will force major basic changes in educational organizations.

## Keywords

Gross Domestic Product, Education, Economic Growth, Pakistan

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## 1. Introduction

The studies conducted in the past stress emphatically on investing in early education so as to reaping out utmost advantages stemming out of it. The economic growth has tremendous significance for any country as the structure of its sustenance rests thereupon. The consistent struggles are continued in every country to find out new ways and means / eras giving impetus to the economy. The economists have recently realized that human stock is greatly instrumental in boosting up economic growth of a country. As such, emphasis is being laid down on strengthening human stock so as to attain an enviable level of economic growth of a country.

The investment in education, or "human capital," is important source of economic growth. The educational contribution towards labor comes approximately to between 13%-30 % of the total economic augmentation according to various studies.

(Policy Brief#153). Regardless of contribution of education towards the previous growth, investment in other forms of capital may raise their importance because of our move to a post-industrial and knowledge-based economy.

A more educated working force is more mobile and adaptable in learning new tasks and skills, applying a wider range of newly emerging technologies and sophisticated equipment and has more innovative approach in smoothing away affairs. The entire qualities make availability of highly skilled and industrious worker and provide to employers opportunity to organize their work places appropriately and adjust them suitably to changes necessitated by competition, technical advancements or consumer's varying demands.

Better performance of a firm equipped with educated workers results in better performance of economy in these dimensions. The benefits of having more educated workforce accrue to everyone, not just to the organization where these individuals

\* Corresponding author

E-mail address: [hinaali@wum.edu.pk](mailto:hinaali@wum.edu.pk) (H. Ali)

happen to work. Besides, less criminal and healthier surroundings are created by more skilled work force which helps institutions in better functioning and directing flow of benefits towards business sector from that environment.

The multidimensional impact of education on economy enhances its necessity in the area of policy formulation. Escalating nations are required to mould educational policies for flourishing yield in diverse segments of economy through inducting fully competent manpower and resolving the issues hindering industrialization process currently found in lukewarm condition. Pakistan government is actively inclined to upraise the level of meaningful education by making available requisite conveniences in the shortest time span. The aggregate literacy rate ran upward to 55 % in 2006-2007 as against 45 % in 2001-02 demonstrating 10 % rise over the period of merely six years. Source: Pakistan Integrated Household Surveys (PIHS) issues.

Education is considered as extremely significant constituent of fiscal development. On reviewing the relationship existent between education and economic progress, some prominent economists have opined that education is an effective factor of economic advancement.

## 2. Literature Review

The education is a foundation stone in the process of economy development. It brings improvement in the socio-economic condition of a country. Many studies have been presented in this direction at national as well as international level. The literature review of some of them is described below:

Sawhil et al. (2006) highlighted the effects of investing in early education and economic growth. In their contemplation, regardless of commitment of training to previous development, interests in human capital might rise significantly with respect to interests in different manifestations of capital because of our move to a post-modern and information based economy. Those characteristics had just not made more exceedingly talented labourer more profitable than a less gifted one additionally empowered managers to compose their work.

Afzal et al. (2010) managed to explore impact of school education on economic rise in Pakistan in the long-run and short-run. The time series data generated on real GDP, real physical capital, inflation and common school registration during the period 1970-71 to 2008-09 was thoroughly manipulated. As a result, the co-integration and direct correlation between school education and economic development in Pakistan surfaced both in the long-run and short-run. Additionally, the findings indicated that macroeconomic volatility prevailing due to inflationary

conditions impeded the economic development both in the long and short-run whereas it obstructed merely school education in the long-run. School education and economic development were found inversely related to each other only in the short-run. School registration rate directly affected economic growth both in the long and short-run.

Danacica, Belascu & Llie (2010) analyzed the data spread over the period from 1980 to 2008 in order to ascertain temporary relationship of advanced education with economic progress of Romania. Their observation proved that there existed LR correlation of advanced education to economic augmentation. However, the study faced serious drawbacks as in it, Johansen & Juselius (1990, 1995) technique had been used on 28 observations with 4 optimal lag lengths. Because of small sample, the technique might mislead the results and also caused loss of the degree of freedom.

Moav & Neeman, 2008 suggested increasing savings and investing them in education sector<sup>1</sup>. Fabre & Augersaud-Veron (2004) found that the prevailing system provided low quality education, which deteriorated the economic growth.

Emazadeh et al. (2000), Nill & Nafisi (2003), Mohamadi (2006), and Komaijani & Memernejad (2004) analyzed the effect of education on economic growth in case of Iran and found that education had a positive and significant effect on economic growth of Iran.

Hanushek and Kimko (2000) showed that quality of education had a remarkable impact on productivity and national growth rates. Bils and Klenow, (2000) observed that the countries where the percentage of school registration was greater, recorded tremendous boost in per capita income as upward trend in school registration rate substantiated productivity considerably.

The later study by Dale Jorgenson and Kevin Stiroh estimated the commitment of training to financial development at 8.7 % of aggregate development over the period 1959 to 1998 and 13 % of development in yield every specialist.

Gemmell (1996) determined both the human capital and their growth rates as main determinants of economic growth. De Meulmester and Rochet (1995) concluded that the relationship was always positive between education and economic growth.

Benhabib and Spiegel, (1994) acknowledged the human capital development as a source of economic growth. Barro (1991) found a positive relationship between education expenditures and economic growth. The neoclassical or exogenous development studies portrayed above expect that the prompt effect of expanding the measure of training every labourer by 10 % would be to build GDP by just around 4 to 5 %.

<sup>1</sup> Such type of investment would result in growth of national economy by developing human capital of a country.

### 3. Relationship of Education with Economic Growth in Pakistan

Education opens various ways to register economic growth all over the world with particular reference to developing

countries. In the most part of the universe, education and economic growth are positively related and have consistency to each other. The past economic performance of Pakistan remained unsatisfactory because of certain unavoidable factors such as droughts, unsustainable debt, macroeconomic vagary and alarming security conditions in Pakistan.

**Table 1.** Human Capital Measures for Pakistan, 1973-2013.

Year	1973	1983	1993	2003	2013
Indicator					
Primary Schooling Enrolment	232	239	327	375	329
Middle Schooling Enrolment	54	58	97	97	110
Higher Enrolment	23.32120582	24.25531915	37.13831479	39.47826087	49.61349262
Life Expectancy	55	59	62	64.7	67.45813
Fert	6.9	6.9	5.6	4.1	3.3

Source: Pakistan economic survey

**Table 2.** GDP Growth rate and literacy in Pakistan during 1973-2013.

Years	Literacy	GDPpc
1973	4.1	19.6
1974	0.6	19.7
1975	1.2	19.73
1976	20.	21.16
1977	0.7	22.21
1978	4.6	27.98
1979	0.4	23.08
1980	6.6	24.18
1981	4.3	24.78
1982	3.0	26.2
1983	3.2	26.98
1984	1.6	27.07
1985	4.0	28.80
1986	2.0	28.99
1987	3.0	29.07
1988	4.2	29.69
1989	1.8	32.70
1990	1.4	33.8
1991	2.2	34.90
1992	4.9	36.0
1993	-0.8	37.2
1994	1.1	39.6
1995	2.3	40.9
1996	2.1	42.2
1997	-1.6	43.3
1998	-0.1	45.0
1999	1.1	47.1
2000	1.9	49
2001	-0.1	50.5
2002	1.3	51.6
2003	3.0	53
2004	5.5	53
2005	5.7	54
2006	4.2	55
2007	2.9	56
2008	-0.2	57
2009	1.0	56
2010	-0.2	57.68
2011	1.0	57.94
2012	1.8	58
2013	2.7	60

Source: World development indicators

Figure 1 clearly shows that education has a positive connection with GDP. With the rise in educational level, the level of GDP shows steady and reliable growth from 1973 to 2013. Besides, graphs specify that no fall occurred during this period.

### 4. Relationship Between Three Indicators of Education and Growth Rate of GDP

(a): Preliminary Ratio as Total Employed Labour Force and Growth Rate of GDP

Figure 2 shows a positive relation; primary school registration, as a ratio to total job - engaged people and GDP growth rate. When the primary school registration, as a ratio to total job-engaged force increase, GDP growth rate also increase. On investigating, it is more likely to say that both the variables generally have an upward trend.

(b): Middle Ratio as Total Employed Labour Force and Growth Rate of GDP

Figure 3 shows the progress rate of GDP and elementary School percentage and depicts the positive relationship between elementary school ratio and the growth rate of GDP but the gap between these two variables is wider than that in primary education and GDP growth rate.

(c) High Ratio as Aggregate Engaged Working Power and Growth Rate of GDP

Figure-4 shows that the increase in higher education calculated as the ratio to aggregate workmen also widens gap between higher education level and GDP growth rate. As an indicator of educational attainment, the assessment is obviously inadequate.

Educational level excepting that of primary education is not

getting civilized with the passage of time and governmental financing to higher level is not adequate. Though education levels are not largely civilized overtime but growth rate with

similar difference are getting improved showing that the variables other than education are also equally important. The detail thereabout is not affordable in this study.

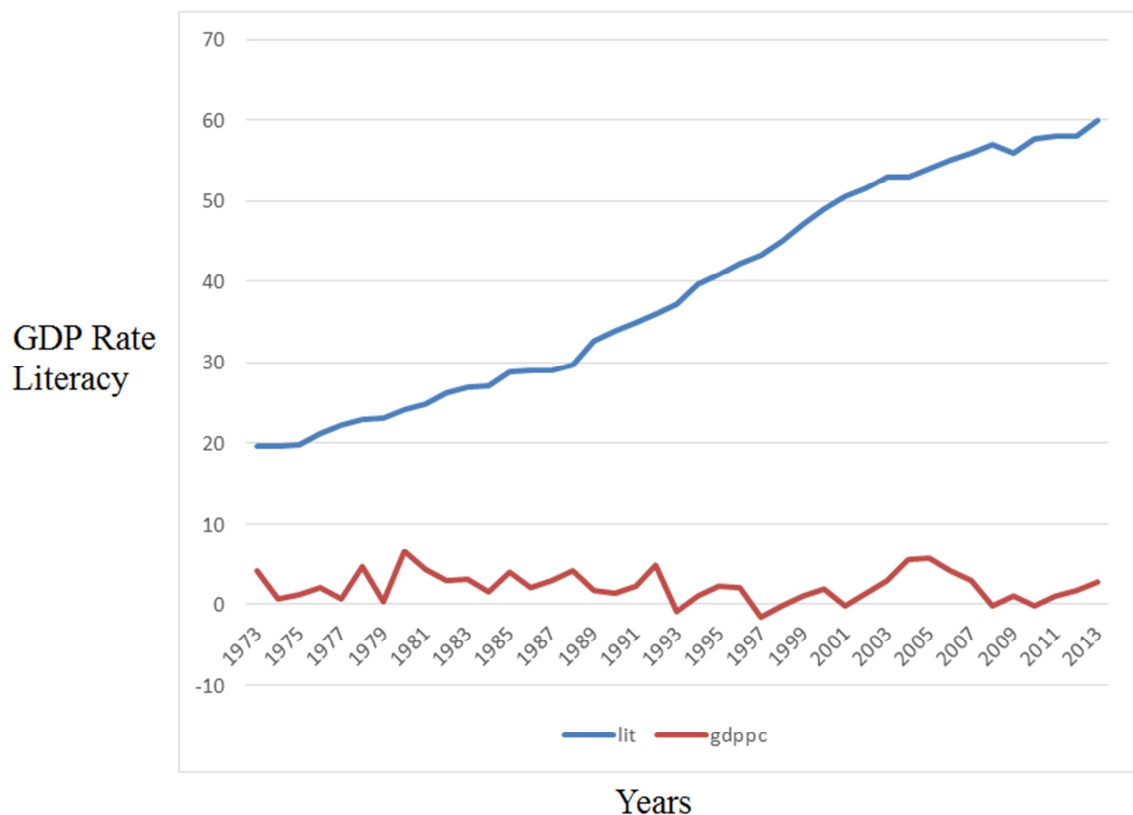


Figure 1. Comparison of GDP growth rate and literacy rate.

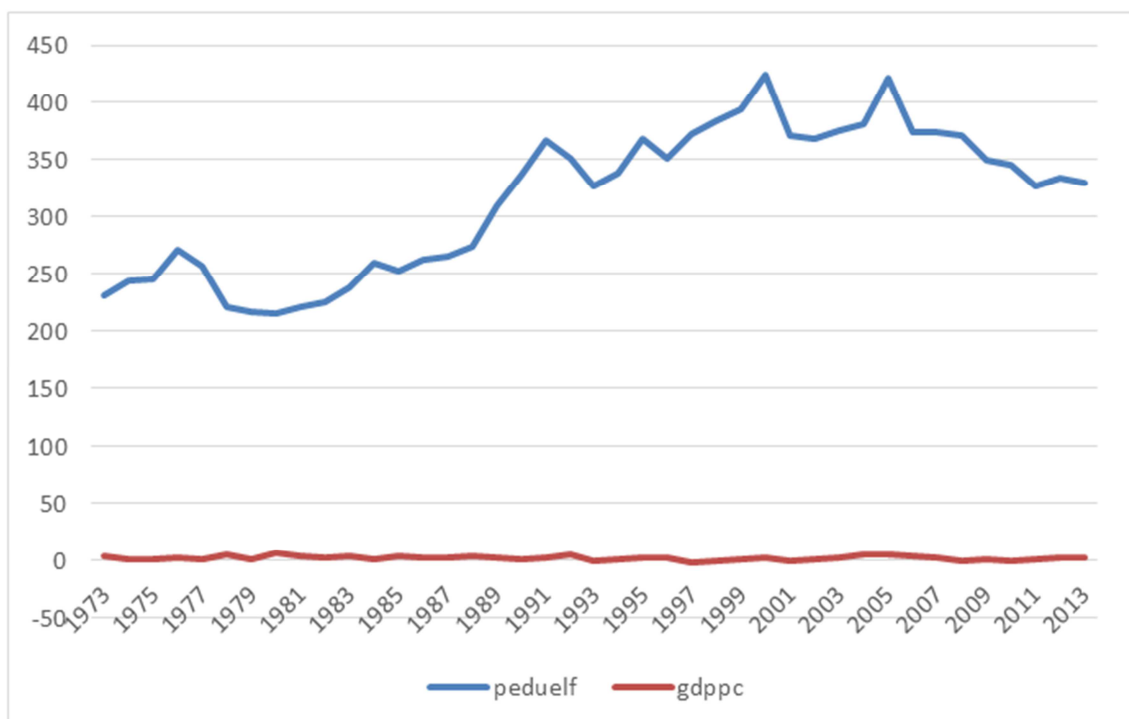


Figure 2. Preliminary ratio and growth rate of GDP.

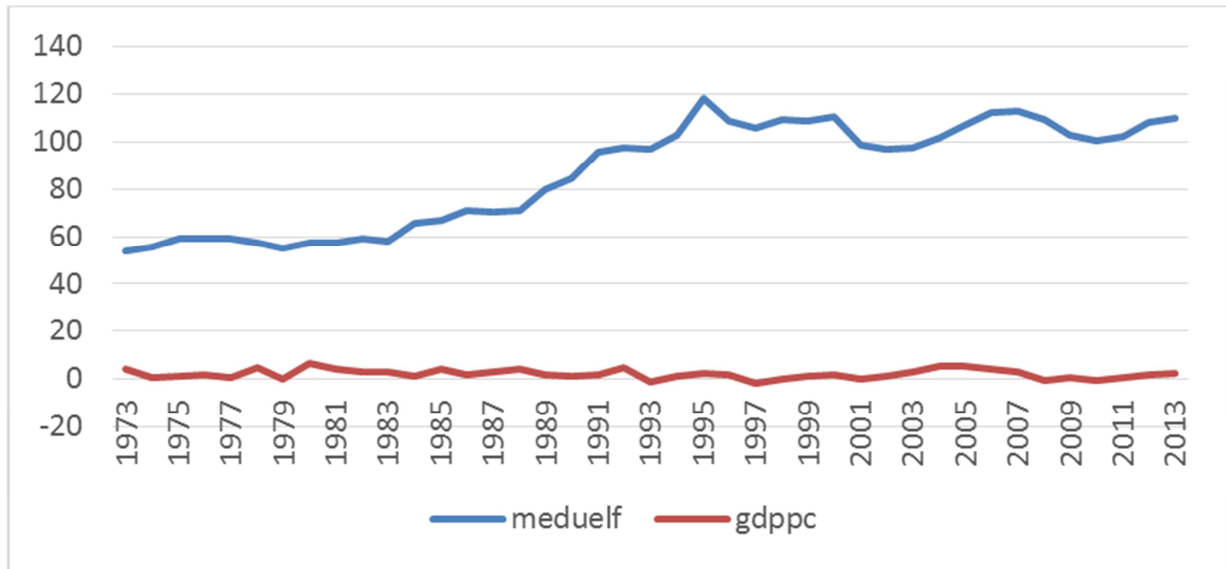


Figure 3. Middle Ratio and Growth Rate of GDP.

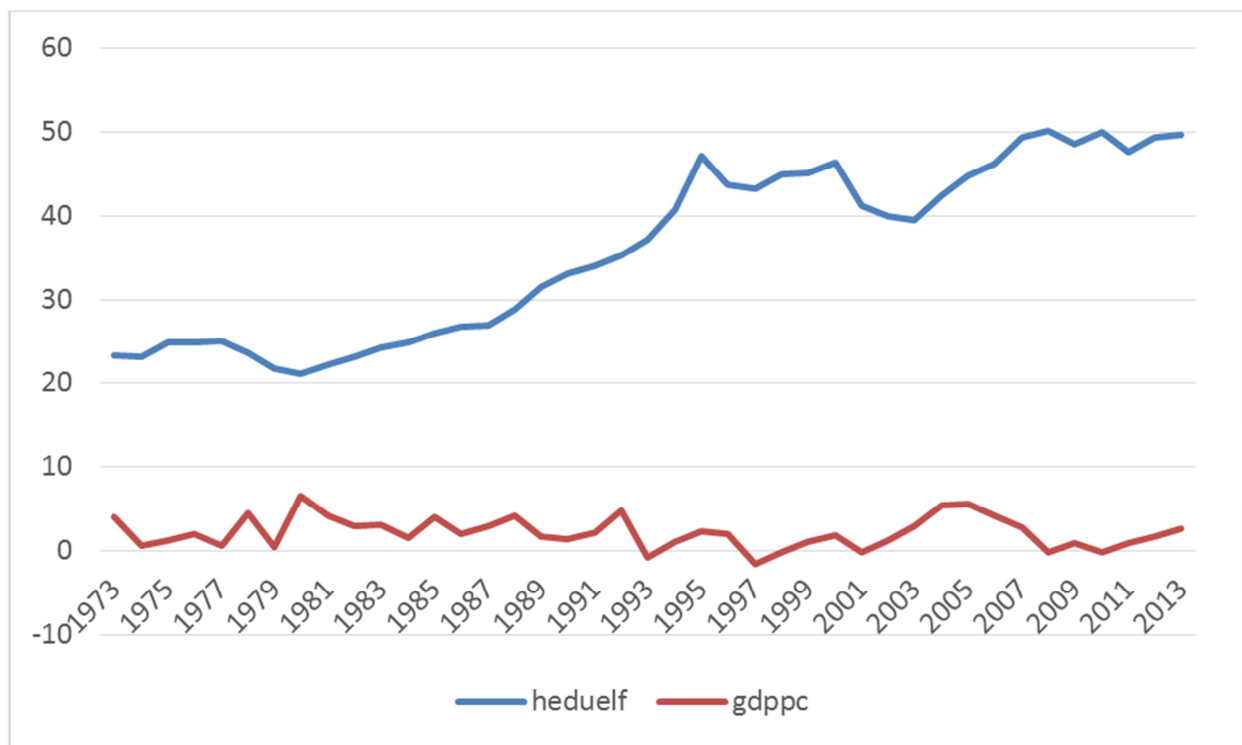


Figure 4. High Ratio and Growth Rate of GDP.

## 5. Variable Organization

Based on the study (1973-2013), the following variables have been taken which are instrumental in evaluating educational impact on economic environment:

### (a) Gross Domestic Product:

GDP represents the market value of final goods newly produced by whole of the nation during fixed period of time.

### (b) Education Indicators:

Education being cardinal factor of the economic progress occupies a significant place in research work. The educational contribution to the economic development is largely dependent on elementary school registration, middle school registration, high school registration and other school registration.

The study includes primary school registration, elementary school registration, and secondary school registration each as

a percentage to aggregate workmen.

*(c) Health:*

For the development of the economy, good health is considered as a driving force. The primary health centres fall into the list of approved doctors, nurses etc.

*(d) Literacy Rate:*

Literacy rate denotes a percentage learned from the Pakistan Household Integrated Survey PIHS (various issue).

*(e) Workmen performance:*

Labour force is divided into two parts, vastly trained workmen and nominally trained workmen. Vastly-trained workmen earn higher wages and face lower unemployment risk, are most likely better informed and as compared to low educated workers they make wider decisions. Furthermore, a highly skilled labour force may also raise economic growth through more productivity attractive innovations and a superior acceptance of new technology.

Number of studies for example, Denison (1984), Schultz (1981), Psacharopoulos (1973), Becker and Lewis (1992) and Barro (2001) found that higher education is more important than other types of education level.

## 6. Inferences and Policy Percussions

To ensure stability in economic productivity, variances in the workingmen market need a thorough review together with watching prudentially the economic requirements about necessary understanding and working capability. The entire educational system should be modified so as to produce capable and innovative workmen who could effectively contribute towards economic progress. Venturing in the field of education not only amounts to inflate human capital but is also indispensable to manage envious living standard.

The economy of Pakistan has been witnessing startling condition in terms of development. The economists, planners and alien financiers are greatly shocked over its dwindling inclination during the current period. The major objective underlying the study was to spot the implications the macroeconomic variables had on augmentation of Pakistan's economy. The computable facts specify that real GDP rise has clear connection with the primary school registration-workingmen percentage. The primary education is instrumental in raising economy. Therefore, primary education must be imparted at levels indiscriminately by the government for fastening the economic growth pace in Pakistan.

Higher education inclusive of other school registration–

working people percentage has played a great role in the economic growth. Correspondingly, workmen contribution variable, being a significant indicator of economic growth, would be auxiliary to up-growing of real GDP. Accordingly, we suggest to the Government to manage workmen involvement in economic amelioration by enticing them with jobs prospects, improved health cares to ensure continual progress in economy.

Likewise, literacy revealed very solid impact on economic growth which appears to be an optimistic insignia of sustainable fiscal increase and supports the educational yield of economy to some extent. The policy makers lay down emphasis on designing such strategies as could prove to be helpful in improving the primary education system in Pakistan, thereby attaining a universal enrolment rate in this specific area in future. Additionally, prompt remedial measures are also required to be taken to raise the literacy rate in the country to give impetus to the economy in Pakistan.

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