

# Determinants of School Enrolment in Pakistan

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## Abstract

Education is always considered as the significant determinants for the development of any economy. School Enrolment shows that how much education is common within the children of the country. Taking the importance of enrolment, the current study examines the influence of variables like government spending and numbers of schools on the student school enrolment in Pakistan. Time series data has been collected on student enrolment, government spending and numbers of schools for the period from 2001 to 2010. Model is estimated through regression. The results of study show positive association of numbers of schools and government spending with student enrolment in Pakistan. At the end of study give some policy implications that government should increase expenditure in term of education for higher school enrolment rates in Pakistan and re-opening of ghost schools all around the country so more and more children in urban and rural areas children access school education.

**Keywords:** Government expenditure, Enrolment, Pakistan, Numbers of School, Ghost School

## 1. Introduction

School education is at the base of pyramid of education and today it is fundamental human right. Also, it has several social and economic effects. As important component of human capital, school education plays a vital role in the economic growth and development of country<sup>1</sup>. It means that through getting and completing primary education will also result in increase of earning. Like difference others developing countries, the condition of education sector in Pakistan are not very encouraging due to main reason is poverty and fluctuate economic condition in country. So, it is necessary the proportion of GDP spending on education must be increased. Also, very high proportion of education budget is spent on salaries rather than very small amount is spent of quality improvement, like teachers training, increase numbers of schools and supervision and additional funds should be allocated for this purpose.

Government of Pakistan has prepared every policy document with the aim of attaining universal primary education. The NER (Net enrolment rate) at primary level shows that we are still far from the target set by the government. The failure of policy for the past fifty years in acquiring universal primary education require a careful review, one of the aspect is to analyze the main factor of determining enrolment in primary schools and with this come up with policy options and proper strategy to achieve the objective.

The present paper is an effort to study whether numbers of schools and government spending on education increases, decrease on no impact on primary school enrolment. The study is organized as follow: next section review on theoretical and empirical past studies, after that data and methodological issues discussed, and estimation results and conclusion and policy implications discussed in the last.

## 2. Literature Review

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<sup>1</sup> Colclough in 1982, a review of evidence related to the impact of primary schooling on economic development. In Pakistan, empirical proof on forgone growth due to under investment in education is reported in Birdsall *et al* in 1993.

## *2.1 Review of theoretical literature*

In individual learning process starts with the birth of child. It starts at home by copying the elders and observing their activities. Though child learns different basic skills at home, but child requires learning more to face complexities of life and mainly educational institutions are the best side for his/her further development. The schools are the first stage of socializing individuals which help him/her in developing certain competencies in the society. School environment is resulting in interacting with teachers, students, head teachers and learning activities with the objective of preparing young generation for having successful future.

Importance of education especially schooling in developing countries like Pakistan, the target 2.A of Millennium Development Goal ensure by 2015, children everywhere will able to complete primary school education (CRPRID, 2006) and article 28 of UN (United Nation) convention on the right of child. Particular are : make compulsory primary free education and available to all, different form of secondary education should be encouraged, including vocational and general education and make them accessible and available to every child and take proper measures of free education and also offering finance assistance if need, take control measures to encourage regular school attendance and reduce school drop-out rate (UN, 1989)

Lack of schools and social and cultural norms has plays a vital role to keep children away from schools and results in less numbers of net school enrolment. Also due to very minimal amount of government spending and increase poverty ratio cause reduction in school enrolment. School child is reflecting by the parent decisions and also major part is their income. Mainly high cost keep some children out of school and this is particularly significant for countries like Pakistan where free primary education is limited by resources constraints. Children are not making their choice independently rather they are under control and dependent on their parents. Parents maximize their utility that based on numbers of children, the human capital of children and spending on house hold income and consumption of composite goods, income and time constraints for the house hold members and production function (Becker and Lewis, 1973).

The performance of Pakistan in basic school enrolment is below satisfactory and if these trends are continue as there is proof that situation is getting worse , Pakistan will host second largest out of school population of children after Nigeria by 2015 (according to Education for all, Global Monitoring Report, 2009). The report also conclude that Pakistan and Nigeria, poor governance with respect to education was responsible for limiting progress and keep millions of children's out of schools.

There are different factors that affect the student learning in schools like teachers qualifications and experience, teachers guidance to students, physical facilities (school infrastructure), student own abilities and socio-economic background. Parental qualification, family size, teacher guidance and school liking have impact on the achievement of students (Saeed et al. 2005).

Studies shows that importance of age when child start school education (Glewwe and Jacoby, 1995, Glewwe et. al. 1998). The minimum the age of the child attending school, the more quickly he or she completes schooling, the lower is the private cost of schooling the longer is the period in which to earn these returns. Age of child is very important variable in determining child schooling (Durrant 1998). There exist a strong link between parental education and their child schooling decision (Ravallion and Wodon, 2000). Parents who themselves acquired school education are more likely to invest in the education of their children (Alderman et. al. 1996).

## *2.2 Empirical Studies*

Literature reviews covers determinants of education or determinants of school enrolment have discussed many times in the past internationally and nationally. These studies tested different variables and combination of variables to determine their impact and variations over the years. Factors like poverty, gender and primary school enrolment in Pakistan (G.M Arif, 1999). This paper suggests that poverty exerts significant negative influence on primary school enrolment and also if income increases school enrolment will increase as well.

Another study attainment of higher enrolment rates in Pakistan (Farrukh Bashir, 2011) it examine the macroeconomic variables on various levels, primary, secondary, higher, college and university enrolment in Pakistan. Time series data used consumer prize index, government revenue, employed labor force, government expenditure and health expenditure are variables. The results conclude positive association of employed labor force, government and health expenditures with enrolment at all levels in Pakistan and consumer prize index and government revenue inversely impact on enrolment at various levels.

Research study determinants of child enrolment (Nadeem A. Burney, 1995) using regression analysis and conclude that household income and parent education have positive association with the child enrolment. Determinants of schooling in rural areas of Pakistan (Ali, 1999) in this literature low school enrolment and higher gender inequality have been addressed and investigated the determinants of schooling of children total and separately male and female using primary data of rural household. The findings are that enrolment of school children is delayed and more severe for girls and exist gender inequality. The head of household education significantly increase the ratio of overall child schooling and greater affect on boy schooling and not matter in girls schooling. Parental education also significantly increase child schooling. Household high income and ownership of asset increase probability of school attendance.

The effectiveness of government expenditure on education and health care in the Caribbean (Roland Craigwell, 2012) in this paper examine usefulness of public spending on health care and education by evaluating the life expectancy and school enrolment rate of 19 Caribbean countries. Health care data from 1995 to 2007 and 1989 to 2009 education and Panel Ordinary least square model are used. It conclude that health expenditure has significant positive effect on health care while spending on education has no substantial influence on school enrolment.

Determinants of enrolment in primary education (SHAHID\*, 2008) this paper examine primary school enrolment in the city of Lahore and estimated the impact of household quantitative characteristics on enrolment decision. In this paper used primary data and both OLS and Logit models are used for computation. Factors like family size, house ownership, education expense, literacy ratio and dependency ratio have significantly positive effect on net enrolment of children at primary level.

### **3. Methodology**

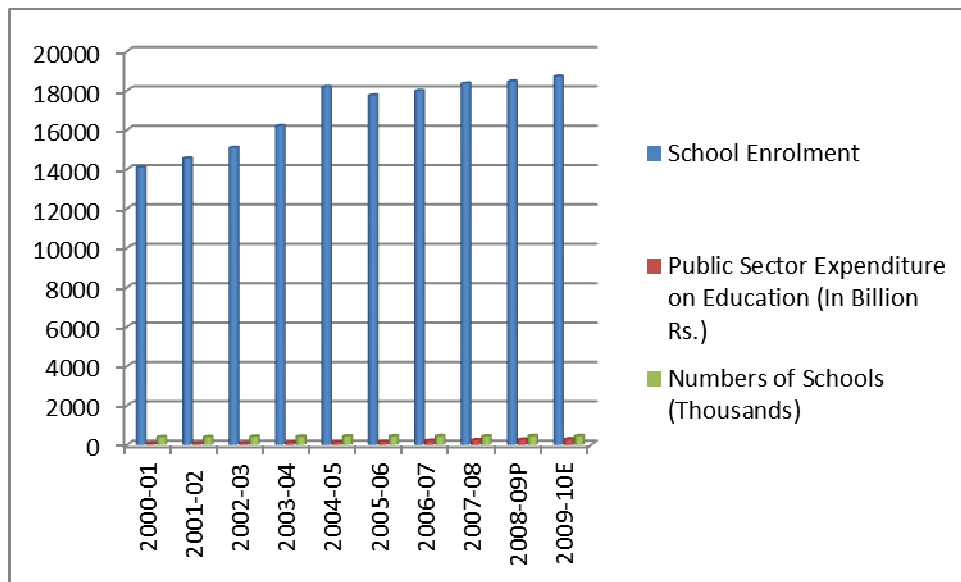
The secondary data sources used in this study is the Social Indicators of Pakistan 2001, 6th Edition carried out by Federal Bureau of statistics (FBS). It consists of last ten years of net school enrolment of four provinces of Pakistan and number of total schools. The data used on Government spending on education is taken from Pakistan Economic Survey from 2001 to 2010. Time series data is carried out in the present analysis. Limitation in the data is due to available resources like government spending on education data is available from 2001-10 and before it very little information is available. Education in Pakistan had been a low priority of national government. In 2009 it was 2.1 % of GDP and in 2010 it was only 2 %. Which shows serious measures should be taken in order to increase literacy rate in Pakistan and should invest on human capital. Statistics are shown in the below table.

Table -1

Year	School Enrolment	Public Sector Expenditure on Education (In Billion Rs.)	Numbers of Schools (Thousands)
2000-01	14105	75.9	408.9
2001-02	14560	78.9	413.9
2002-03	15094	89.9	433.5
2003-04	16207	124.2	432.2
2004-05	18190	140	450.1
2005-06	17757	170.8	454.2
2006-07	17993	216.5	456
2007-08	18360	253.7	452.6
2008-09P	18468	275.5	465.3
2009-10E	18715	301	466.5

(Sources: Social Indicators of Pakistan 2011 & Pakistan Economic Survey)

The graph shows that school enrolment increases steadily but strange fully decline during 2005-06 and the arose again also there is very less amount of GDP spend on the education and very little numbers increase in the numbers of School which shows that there is very less focus by the government and which need to be increase gradually.



### 3.1 Modeling Framework

The objective of the study is to analyze the factors affecting on school enrolment in Pakistan. For that purpose, we have included two variables numbers of schools and governments spending in the paper to attain higher school enrolment in Pakistan and operational model are specified as follow:

$$SE = \alpha_0 + \alpha_1SCH + \alpha_2GOV + \mu$$

Where:

SE = School Enrolment

SCH= Numbers of Schools

GOV= Government Spending on Education

Expected Sign:

$\alpha_1 > 0, \alpha_2 > 0,$

H0: Numbers of schools and government spending have negative impact on school enrolment

H1: Numbers of schools and government spending have positive impact on school enrolment

In above model, school enrolment is dependent variable and numbers of schools and government spending are independent variables.

#### 4. Data Analysis

Time series data is used and estimation results obtained by using E-views software. Descriptive statistics are in below table:

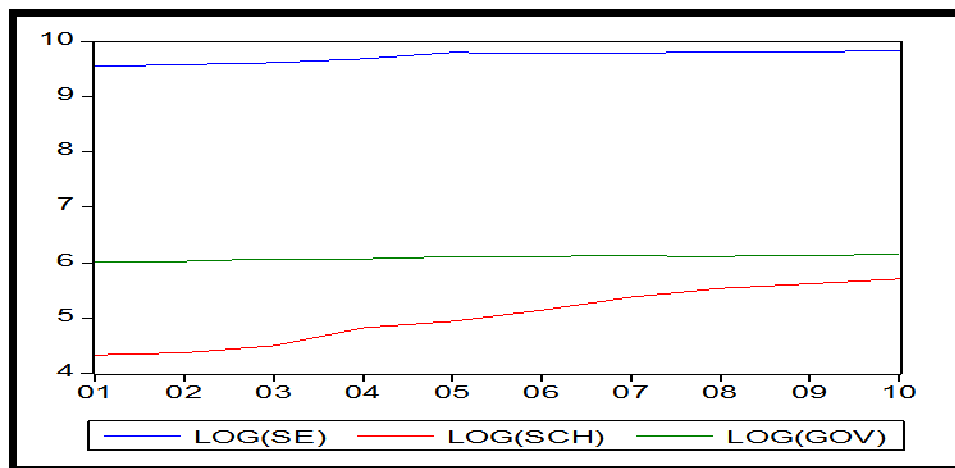
Table 2 Descriptive Statistics

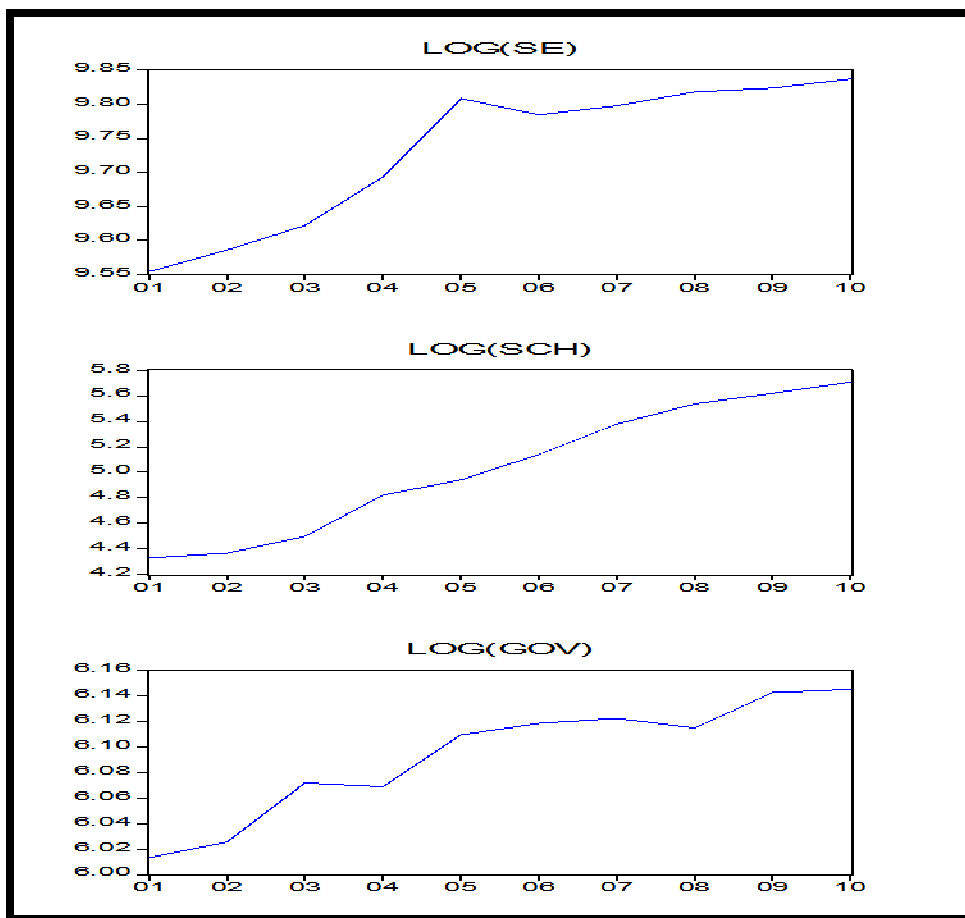
	SE	SCH	GOV
Mean	16944.9	154.72	172.64
Median	17875	156.95	155.4
Maximum	18715	158.4	301
Minimum	14105	147.7	75.9
Std. Dev.	1779.107	3.972	84.299
Skewness	-0.575	-0.842	0.269
Kurtosis	1.635	2.014	1.586
Jarque-Bera	1.329	1.588	0.954
Probability	0.515	0.452	0.621
Sum	169449	1547.2	1726.4
Sum Sq. Dev.	28486997	142.016	63957.8
Observations	10	10	10

Table 3 Correlation Matrix

	SE	SCH	GOV
SE	1	0.961286366	0.881314
SCH	0.961286366	1	0.782055
GOV	0.881313803	0.782054773	1

Graph





## 5. Regression Results

Table 4 Estimation Equations

Dependent Variable: LOG(SE)				
Method: Least Squares				
Sample: 2001- 2013				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.06166	2.753777	-1.47494	0.1837
LOG(SCH)	2.657248	0.570861	4.654808	0.0023
LOG(GOV)	0.079094	0.028356	2.789359	0.0269
R-squared	0.969653	Mean dependent var		9.732527
Adjusted R-squared	0.960982	S.D. dependent var		0.108672
S.E. of regression	0.021466	Akaike info criterion		-4.60139
Sum squared resid	0.003225	Schwarz criterion		-4.51061
Log likelihood	26.00695	F-statistic		111.8324
Durbin-Watson stat	2.689719	Prob(F-statistic)		0.000005

Descriptive statistics in (table 2) shows standard deviation (ST) of government spending on education (GOV) is 84.29 a moderate figure and has importance in analysis of results. While, ST of SCH is fairly small.

Estimation equation (Table 4) adjusted R<sup>2</sup> shows overall model to be .96, which explain that 96% of variation of dependent variable (SE) from the independent variables. Probability of F-statistics further strengthens the validity of results as it shows 0.00 significance of regression model. The results and supporting data for government spending and numbers of schools have significantly positive impact on school enrolment thus H<sub>0</sub> is accepted.

## 6. Conclusion and Policy Implications

The present study focuses on determinants of school student enrolment in Pakistan at primary level. The conclusion drawn from the estimated results reflect the importance of student enrollment increases by increasing numbers of schools and Government spending. There is need to implement certain revolutionary measures like re-opening of ghost schools all around the country, increase Government spending 2% to at least 5 to 7% and some legislative measures should be implemented to make school education compulsory to bring all the children of respective age to school to achieve the goal of educated Pakistan.

## 7. Direction for Further Research

Further research on determinants of school enrolment in respect to the micro and macro economic factors and separately study the school enrolment of male and female child in Pakistan in order to evaluate the equality education. Also increase number of independent variables and use primary data in order to evaluate more accurate results which will be helpful in making strategies.

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