

THE PRIVATE RATES OF RETURN TO  
EDUCATION IN PAKISTAN

MOHAMMAD FAROOQ

UNIVERSITI SAINS MALAYSIA

2010

THE PRIVATE RATES OF RETURN TO  
EDUCATION IN PAKISTAN

by

MOHAMMAD FAROOQ

Thesis submitted in fulfillment of the requirements  
for the degree of  
Doctor of Philosophy

May, 2010

## **DEDICATION**

This effort is dedicated to a common worker who struggles for his livelihood honestly in a most unfavorable and biased economic and political environment of Pakistan.

## **ACKNOWLEDGEMENT**

I am very grateful and thankful to my thesis supervisor, Prof. Dato' Jamalludin Sulaiman, for his strong support, encouragement, and guidance in the production of this thesis. I am also indebted to my co-supervisor, Prof. Madya Abdul Fatah Che Hamat, for his valuable suggestions and supervision through out this research process.

It would be injustice if I do not mention here about Dr. Jehanzeb Khan, Associate Professor, department of Economics University of Peshawar, Pakistan, who provided me academic help in data analysis, and other methodological issues related to the objectives of the thesis. I am also thankful to Mr. Ibaad-ul-Haq, assistant manager research, in an NGO—Save the Children, Islamabad, Pakistan, for his technical assistance while analyzing the data through SPSS version 15.0.

Finally, I am also thankful to the Universiti Sains Malaysia (USM) in general, and to my School of Social Sciences in particular, where I found an excellent academic environment to accomplish my PhD thesis.

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## **LIST OF ABBREVIATIONS**

ANOVA	Analysis of Variance
ASEAN	Association of South East Asian Nations
CSS	Central Superior Services
EDI	Education For All Development Index
EFA	Education For All
ESS	Explained Sum of Squares
FBS	Federal Bureau of Statistics
FDI	Foreign Direct Investment
GDS	Gross Domestic Savings
GDI	Gender-Related Development Index
GER	Gross Enrolment Rate
GDP	Gross Domestic Product
GNP	Gross National Product
GNS	Gross National Savings
GoP	Government of Pakistan
HDI	Human Development Index
HEC	Higher Education Commission
HIES	Household Integrated Economic Survey
HPAEs	Highly Performing Asian Economies
HPI	Human Poverty Index
HSSC	Higher Secondary School Certificate
ICT	Information and Communication technology
ILO	International Labor Organization
IMF	International Monetary Fund
IRR	Internal Rate of Return
ISI	Inter-Services Intelligence
LDCs	Less Developed Countries
MDG	Millennium Development Goals
MEF	Mincerian Earnings Function
MNCs	Multi-National Corporations
MRA	Meta Regression Analysis

MTDF	Millennium Term Development Framework
NEP	New Education policy
NER	Net Enrolment Rate
NGOs	Non-Governmental Organizations
NIEs	Newly Industrializing Economies
NWFP	North West Frontier Province
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
PCGDP	Per Capita Gross Domestic Product
PCGNP	Per Capita Gross National Product
PCS	Provincial Civil Services
PIDE	Pakistan Institute of Development Economics
PIHS	Pakistan Integrated Household Survey
PLM	Population, Labor Force and Migration Survey
PRSP	Poverty Reduction Strategy Papers
PSLM	Pakistan Social and Living Standard Measurement Survey
R & D	Research and Development
RSS	Residual Sum of Squares
SAP	Social Action Program
SBP	State Bank of Pakistan
SSC	Secondary School Certificate
TI	Transparency International
UNESCO	United Nations Educational Scientific and Cultural Organization
UNO	United Nations Organization
UK	United Kingdom
USA	United States of America
WB	World Bank
WHO	World Health Organization

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# **KADAR PULANGAN “PRIVATE” DARIPADA PENDIDIKAN DI PAKISTAN**

## **ABSTRAK**

Pembangunan model insan, terumanya melalui pendidikan dan persekolahan dianggap sebagai faktor utama dalam menjana pembangunan sesebuah negara. Secara am, faktor model insan dipercayai berfungsi sebagai input dan benefisiari dalam proses pengeluaran. Secara teori dan empirik terbukti bahawa tahap pendidikan dan persekolahan adalah penting untuk pembangunan dan kemajuan sesebuah negara. Oleh itu, kajian ini berusaha mengenal pasti impak daripada pelbagai tahap pendidikan terhadap pendapatan tenaga buruh di Pakistan dengan menggunakan data tinjauan 2004-2005 untuk membuktikan kepentingan teori model insan ini.

Kajian ini menggunakan model Mincer (1974) untuk mengkaji kesan pendidikan terhadap pendapatan bulanan tenaga buruh. Pemboleh ubah lain yang digunakan termasuklah pengalaman kerja, perbezaan kategori pekerjaan, pelbagai kumpulan industri, organisasi atau institusi tempat berkerja, daerah dan wilayah (bandar/luar bandar).

Kajian terbaru ‘Pakistan Social and Living Standard Measurement (PSLM) 2004-05’ telah membekalkan data berkaitan, yang digunakan dalam penyelidikan ini. Keputusan yang diperoleh daripada penggunaan kaedah Mincer menunjukkan bahawa kedua-dua pemboleh ubah iaitu persekolahan dan pengalaman, mempunyai kesan positif terhadap pendapatan bulanan tenaga buruh. Pekali persekolahan menunjukkan bahawa tambahan satu tahun persekolahan meningkatkan pendapatan

pekerja sebanyak 5.54 peratus, manakala pekali pengalaman menunjukkan peningkatan 8.11 peratus berdasarkan tambahan satu tahun pengalaman dalam pasaran buruh.

Anggaran yang berasingan juga dibuat bagi tenaga buruh lelaki dan wanita dengan menggunakan model Mincer (persamaan 4.5). Keputusan menunjukkan bahawa tahap persekolahan rendah meningkatkan pendapatan pekerja lelaki dengan sebanyak 3.04 peratus, manakala bagi pekerja wanita pula dengan sebanyak 2.12 peratus. Pulangan bagi para pekerja berpendidikan menengah, matrikulasi, ijazah pertama, sarjana, doktor falsafah dan doktor perubatan adalah masing masing: 2.63, 7.40, 6.0, 10.30, 9.40, 4.10 dan 2.73 peratus bagi pekerja lelaki. Pola yang sama diperhatikan bagi pekerja wanita. Walau bagaimanapun, kadar pulangan bagi pekerja wanita adalah lebih tinggi daripada pekerja lelaki terutamanya bagi tahap pendidikan pertengahan, ijazah pertama, dan sarjana.

Pendapatan bulanan pekerja wanita yang mempunyai ijazah doctor perubatan (MBBS) bertambah 28.20 peratus dibandingkan dengan pekerja lelaki sebanyak 8.30 peratus. Ini menunjukkan bahawa pekerja wanita mempunyai prospek yang lebih baik untuk menyertai profesion ini. Berdasarkan kajian ini, secara amnya, pekerja yang bekerja di kawasan bandar memperoleh .pendapatan yang lebih baik dibandingkan dengan yang bekerja di kawasan luar bandar.

Dalam kajian ini, didapati bahawa pulangan yang dijangkakan terhadap pendidikan di Pakistan adalah lebih rendah jika dibandingkan dengan negara-negara lain. Berdasarkan pola pulangan pendidikan yang dikaji di seluruh dunia yang



menunjukkan bahawa kadar pulangan adalah lebih tinggi untuk pendidikan rendah, sedangkan di Pakistan dan kadar pulangan bagi pendidikan rendah dan pertengahan adalah yang terendah.

Kajian ini juga turut menghuraikan perbezaan pendapatan di antara pekerja lelaki dan wanita dengan menggunakan kaedah Oaxaca (1973). Berdasarkan keputusan regresi lelaki bagi menunjukkan diskriminasi, secara purata pekerja lelaki Pakistan memperoleh pendapatan bulanan 172 peratus berbanding pendapatan purata pekerja wanita. Sebaliknya, berdasarkan keputusan regresi wanita, pekerja lelaki dengan ciri-ciri yang sama akan memperoleh 123 peratus daripada pendapatan bulanan pekerja wanita, atau, pekerja lelaki akan memperoleh Rs.100 berbanding Rs.82 yang diperoleh oleh pekerja wanita. Kebarangkalian ini menunjukkan terdapatnya diskriminasi terhadap pekerja wanita dalam pasaran buruh di Pakistan. Kajian ini menegaskan bahawa dasar pekerjaan di Pakistan sama ada di sektor awam mahupun swasta perlu dikaji semula untuk mengurangkan diskriminasi gender ini.

Ketidaksamarataan dalam taburan pendapatan turut dikira menggunakan pekali Gini. Dapatan menunjukkan bahawa ketidaksamarataan ini adalah tinggi bagi pekerja lelaki (0.513) berbanding pekerja wanita (0.454) di Pakistan. Pekali Gini bagi kawasan luar bandar adalah 0.317, manakala bagi kawasan bandar pula adalah 0.362. Disebabkan wujudnya perkaitan yang songsang (*inverse relationship*) di antara ketidaksamarataan pendidikan dan pendapatan, maka dapat dikatakan bahawa situasi di Pakistan sudah bertambah baik. Untuk menambahbaik lagi situasi selanjutnya, lebih banyak perhatian perlu ditumpukan terhadap pemboleh ubah persekolahan, terutamanya bagi kalangan kaum wanita di Pakistan.

## **THE PRIVATE RATES OF RETURN TO EDUCATION IN PAKISTAN**

### **ABSTRACT**

The development of human capital especially through education and schooling is regarded as the main factor promoting the over all development of nations. The human factor is generally believed to be both an input in the production process as well as the beneficiary of production. It is theoretically and empirically proven that certain level of education and schooling is crucial for the development and progress of any nation or country. Therefore, this study has attempted to see the impact of various levels of education on earnings of the labor force in Pakistan using the 2004-05 survey data to reaffirm the importance of human capital theory.

This study used the Mincerian Model (1974) to study the impacts of education on the monthly earnings of the labor force. The other explanatory variables included were: work experience, different categories of occupations, various industrial groups, organizations or institutions where the worker is employed, provinces, and regions (rural/urban).

The recent Pakistan Social and Living Standard Measurement (PSLM) Survey 2004-05 provided the necessary data, which was used for this research. The results obtained using the Mincerian method shows that both schooling and experience have a positive influence on monthly earnings of the labor force. The coefficient of schooling indicate that an additional year of schooling raises the earnings of a worker by 5.54 percent, while the coefficient of experience shows an increase of 8.11 percent by an additional year of experience in labor market.

Separate estimations were made for male and female labor force using the fully extended Mincerian model (equation 4.5). The results showed that primary schooling raises the earnings of the male worker by 3.04 percent while that of female worker by 2.12 percent. The returns for middle education level, matric, intermediate education level, bachelor, masters, M.Phil and doctoral are: 2.63, 7.40, 6.0, 10.30, 9.40, 4.10 and 2.73 percent respectively for male workers. A similar pattern was observed for female workers. However, the rates of return were higher than males especially for intermediate education level, bachelor, and masters.

The degree in medicine (MBBS) raises the monthly income of females by 28.20 percent as compared to 8.30 percent for the male workers showing a greater prospect for females to join this profession. Generally, workers working in the urban areas earn more than workers in rural areas, according to the study.

The estimated returns to education in this study for Pakistan are lower when compared with other countries. Contrary to the world-wide pattern of the rates of return to education studies where returns are higher for primary education, returns to primary and middle standard education in Pakistan are the lowest.

The study also decomposed the earnings differentials between male and female labor force using the Oaxaca (1973) methodology. Using the male regression results for discrimination, the average male in Pakistan earns 172 percent of the average female's monthly earnings. On the other hand, using female regression results, a male worker with the same characteristics as the female would earn 123 percent of

female's earnings, or female worker would earn Rs.82 compared to Rs.100 earned by male worker. This probably indicates discrimination against female workers in the Pakistani labor market. There is probably a need to review the employment policy of both the public and private sectors to reduce this gender discrimination.

Inequality in the distribution of earnings was also calculated using the Gini-coefficient. The results indicate that inequality is higher in males (0.513) as compared to females (0.454) in Pakistan. The Gini coefficient for rural areas is 0.317 while for urban areas it is 0.362. Due to an inverse relationship between education and earnings inequality, the situation in Pakistan has improved. To improve the situation further, more emphasis should be given to schooling of females in Pakistan.

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The development of human resources through education and training is seen as the central factor boosting national development of any country. The human factor is believed to be both an important input of the productive process as well as the beneficiary of production. Various empirical examples suggested that an acceptable level of literacy is necessary to stimulate economic growth, to improve production, to enable the individuals acquire of new skills, to introduce and invent new technology and to enhance developmental changes in general. Among a number of third world countries, such as South Korea, Taiwan, Singapore, Malaysia, and Brazil, both higher rates of literacy and improving human resources have preceded their development to the point that they have now acquired the status of newly developed countries (Hanif, 1990). According to Ogawa *et al.*, (1993, pp. 2-3):

*“In case of Japan, 45 percent of the population was literate even before the Meiji restoration in 1868. A compulsory educational system was established in 1872. Subsequently, primary school enrollment rose at an unprecedented rate—even when compared with nineteenth century industrializing nations—reaching 100 percent in 40 years. This rapid increase in school enrollment contributed to widening and strengthening the human resource base which, in turn, facilitated the adaptation of advanced technologies borrowed from the West during the early industrial revolution in the late Meiji period.”*

Historically, in the decade of 1950s the main barrier to development in certain nations was considered to be the lack of capital goods. Most of the economists

argued that resources should be directed towards investment in capital goods if the underdeveloped countries were to grow (Nurkes, 1955). As a result, underdeveloped nations focused more attention to investment in capital goods. However, after acquiring sufficient level of physical capital, it was realized that human capital and skills were also needed to operate these capital goods. The stress was shifted to the lack of human skills in these underdeveloped countries. During the process of search for possible solutions to human capital shortages, economists begin to develop conceptual clarification of the role of human capital in the process of economic growth and development and to the recognition of the economic importance of education. Until this change in emphasis occurred, the type of human resource essential to economic growth and development was thought to be simply the physical labor of the human beings.

The theoretical and empirical findings in the decade of the sixties revolutionized thoughts about human capital. In the beginning, relatively large amount of financial resources that were devoted to investment in physical capital formation did not yield the expected rate of return. The reason for this low level of return was considered a lack of qualified human resource. That is why in the decade of the fifties it was found that increases in capital and labor explain only a part of the total rate of economic growth (Lee *et al.*, 1994 and Carnoy, 1992).

Denison (1962) was one of the earliest economists who used the concept of a production function in order to identify the contribution of various inputs into the production to the increase in the gross national product (GNP) of the United States of America between 1910 and 1960. His preliminary analysis showed that increases in the quantity of labor and physical capital in the United States did not explain the total

increase in GNP. The remaining unexplained part of the economic growth was at first attributed to technology (Solow, 1956). But in the same analysis Denison pointed out that improvements in the quality of the labor force, including increased education were important together with other factors such as technological progress and economies of scale. His analysis then led to the conclusion that increases in the level of education of the labor force accounted for as much as 23 percent of the annual rate of growth of GNP in the United States between 1930 and 1960. He concluded that additional education played a significant role in increasing the growth in the United States. Schultz (1959 and 1961) was also working on the same lines and came to the conclusion that education plays a very crucial role in enhancing the productivity of labor force.

Myrdal (1968) pointed out the value of education and health in the process of development. He writes that besides being an independent value, both education and health have influential value in the development process of a country. Similarly, Goode (1959) also considers human capital as much important as physical capital for development. According to him, most of the economic literature on development as well as economic planning especially in South Asian countries is based on the hypothesis that investment in physical capital is the engine of economic growth and development; however, an increasing number of economists now regarded development as an educational process. They are of the view that human resources are equally important factor in the growth and development especially in the underdeveloped countries. Parnes (1962) while reviewing the role of education in economic growth and development says that both economists and policy makers have shown a fresh and growing interest in the role of education in economic growth and social development. The role of education and training is as important as that of

physical capital, manpower and other such factors. It has also been noticed that education plays a greater role in the process of production on the presumption that its role is probably greater than the physical capital (Parnes, 1962).

It is generally believed that education is the key to the national progress and development as there is a positive relationship between education and development. The more education the people receive, the more rapid would be national progress and development. Todaro (2000) perceived human resources as the ultimate source in determining the economic and social development of a country. Human resources provide the strongest foundation for the prosperity and material progress of any nation. Human resources unlike physical capital and natural resources (passive factors of production) are the active factors; they not only put all other resources to the best use but also contribute to the national development (Todaro, 2000). A country virtually lives on its skilled manpower; otherwise it lags behind and suffers from poor economic growth and development.

It is now a well-established fact that education, a human capital variable, plays a crucial role in contributing to the economic growth and development of a country. Economists are of the view that countries with higher level of education are those countries with higher income. Education contributes to economic growth through the productive labor force in the markets. It is a general agreement that education and earnings are closely related. It is generally believed that individuals with more education will earn higher average income than those persons with less education even they are employed in the same occupation in the same industry (Blaug, 1972). According to Blaug, modern social sciences have proved this generalization beyond any doubt in both the capitalist and socialist economies.



As a result of all these earlier studies and researches, it becomes clear that the differences in exogenous technology among different nations could not explain alone the variations in the rates of economic growth of different countries. These studies revealed that technical progress could be endogenized through investment in human capital, which leads to both higher productivity and higher capital accumulation as well.

The main purpose of this study was to estimate the impact of human capital and other relevant non-human capital variables on the monthly earnings of the labor force in Pakistan for the year 2004-2005 using the data of the most recent Pakistan Social and Living Standard Measurement (PSLM) survey 2004-05. It was also intended in this study to know about the earnings differentials between employed male and female labor force in Pakistan. The study decomposed these earnings differentials following the Oaxaca (1973) methodology while for the estimation of the rates of return to human capital and other non-human capital variables, the study followed the Mincerian (1974) model. Based on the belief that education and schooling tends to produce a considerable positive skewness in the distribution of income, it was intended to measure the Gini-Coefficient in order to know about the income distribution in Pakistan. This study can serve as useful instrument for manpower planning, which in turn is a necessary step in the development of human resources. The rates of return to different levels of education may be compared with the rate of return to investment in physical capital. This comparison may indicate areas of human resource shortages and surpluses and thereby lead to sound educational planning and policy making in the country.

In order to maintain equilibrium both in the labor and capital markets, there should be a coordination between physical capital and human capital formation because this coordination is very essential for a balanced growth of the economy. For operating all machines and equipments, the skilled labor in the form of scientists, engineers, managers, technicians and other office bearers are the prerequisites. These skilled human resources and all other physical resources are complementary of each other (Parnes, 1962).

It means that the shortage of human capital may weaken the efficient utilization of capital goods or physical capital. There may exist unused capacity, which can not be utilized due to lack of manpower. So, the investment will tend to fall and discourage production of capital goods, which in turn will reduce the rate of growth and development. Shortages of manpower will intensify economic shortages and imbalances. Shortages may also lead to a more unequal distribution of income, if growing demands for limited supplies of manpower increase earning differentials over a period of time. In order to avoid shortages of manpower and the consequences these may have on growth and income distribution, attention must be given to the role of education and training. We must search for the ways to coordinate investment in physical capital and the process of skill generation.

The theory of human capital provides a theoretical basis for coordinating investments in human and physical capital. The theory of human capital basically leads to a consideration of the costs and benefits of education and training programs. There is no way to avoid a cost-benefit analysis to the planning and programming of education and training (Higgins, 1968).

The theory of human capital, which provides an economic rationale for investment in human capital, was first formally acknowledged by Becker (1962 and 1964). The study of on the job training provides a beginning framework for the economic explanation of investment in human capital. Profit maximizing firms do not spend funds on training programs unless they can collect returns in a form of higher future trainee productivity. Firms are generally more interested in specific training programs than in general training, on which they will spend funds only when they can collect benefits in excess of costs incurred on. Businesses will spend on training programs only the amount they will be able to recover later on. The same factors play a role in the decision of individuals to acquire and spend on education. Expenditures on education are made with the expectation to obtain benefits in future. The future job market and earning possibilities are among the factors involved in such decisions. This viewpoint gives education expenditures the characteristics of investment.

The failure of the programs initiated to increase growth of output and to decrease poverty in the last 40 years in developing countries has been widely accepted (Hicks, 1980). Various alternative programs such as employment creation and rural development have been proposed and recommended to redress this problem. In the decades of 1960s and 1970s, much attention had been directed to provide the poor with essential goods and services as a supplement to programs aimed at raising the productivities and incomes of the poor (Isenman, 1978 and Streeten, 1979). Particular emphasis is given to improvement in health, nutrition, and basic education especially through improved services, such as rural water supply, sanitation, and provision of primary schools. Proponents of this approach argue that the direct provision of essential goods and services will be a more workable way of alleviating

poverty, but at the same time they emphasized the redistribution of public services so as to serve the poor more efficiently. The primary objective of this approach was to alleviate poverty. It soon became clear that a basic needs approach would also improve the quality of the labor force through the effects of improved education and health. Education which is considered one of the dominant factors enhancing human capital is also critical in reducing poverty, promoting social equity and social cohesion. Since the early 1990s' poverty reduction strategies have increasingly focused on education, especially basic education in developing countries, as a means to enhance the use of productive labor, which is the most abundant asset for the poor. Thus the emphasis has shifted away from basic meeting needs towards improving the productivity of human resources by investing in human capital.

## **1.2 Education Sector in Pakistan**

Most economists and researchers are of the view that it is the lack of investment in human capital that has been responsible for the slow growth of the developing countries (Khilji, 1996). Education is the key to change and progress. It performs both economic and non-economic functions in any society. It is also a prime factor in economic growth and development of a country. It yields returns and benefits to both individual and society. Khilji (1996) lists some of the benefits as follows:

- a) Education raises the productivity and income of the people other than those who receive education.
- b) Education promotes technical change (and thus ultimately productivity and output growth) in various ways ranging from the undertaking research and development to the spread of knowledge through literacy.

- c) Education increases allocation efficiency by increasing the flexibility and mobility of the workforce in response to change in the demand for labor.
- d) Education brings about many other benefits of a social as well as economic character, increases social cohesion, stability, demographic values etc.
- e) Education is one of the major aspects of human resource development and economic advancement. Without investment in education, it is inconceivable to produce human beings for various trades and professions.

An additional role for human capital is the engine for attracting other factors such as physical capital investment, which also contributes to per capita income growth (Lucas, 1990). Recent experiences of poor countries which attempt to accumulate physical capital rapidly realize the need of human capital as effective use of physical capital is dependent on human capital. Lucas (1990) suggested that physical capital fails to flow to poor countries because of their relatively poor endowments of complementary human capital. Thus education seems to be the most important investment for any program of socio-economic development. No uneducated society has ever achieved the height of economic and political power. No educated nation has ever been left behind in any field of life. Economic history together with recent econometric research confirms the belief that investment in education can contribute to economic growth and development.

Pakistan has basically inherited its education system from the British rule in the Indian sub-continent. Since independence of the country in 1947, Pakistan has shown slow progress in the education sector due to low priority given to the development of the social sectors by the respective governments. The development planning in Pakistan has been based on the premise that social well-being would follow

economic growth through the trickle down effect (Mahmood, 1999). As a result, social sectors including education received little share of the total budget expenditure. Low investment in education sector has not kept pace with rapidly increasing school age population, thus literacy and level of education remains poor for a significant proportion of population.

Table 1.1 below illustrates first to 8<sup>th</sup> five years plan of national development budget and GNP allocation for education sector.

Table 1.1 Percentage of GNP allocated to education sector in five year plans of Pakistan

Five Years Plans	Percentage of GNP allocated to education sector
Ist (1955-1960)	0.88%
2 <sup>nd</sup> (1960-1965)	1.55%
3 <sup>rd</sup> (1965-1970)	1.38%
Non plan period (1970-1978)	1.53%
5 <sup>th</sup> (1978-1983)	1.50%
6 <sup>th</sup> (1983-1988)	2.10%
7 <sup>th</sup> (1988-1993)	2.20%
8 <sup>th</sup> (1993-1998)*	2.30%

Sources: Ahmad (1993); \* Mahmood (1999)

Table 1.1 shows the percentages allocated to education in the different plans. The average percentage of GNP devoted to education in Pakistan is 1.66 percent and is less than 4 percent of the GNP recommended by the UNESCO for the developing countries (Haq and Haq, 1998).

The consequence of this low investment may also be noted in the school enrolment rates shown in table 1.2.

Table 1.2 Enrolment ratios by level of education in some of the South and Southeast Asian countries.

Country	Primary enrolments				Secondary enrolments				Tertiary enrolments			
	1970	1980	1990-91*	2000-01*	1970	1980	1990-91*	2000-01*	1970	1980	1990-91*	2000-01*
Afghanistan	28	30	29	15	7	10	10	-	0.7	1.7	2	-
Bangladesh	52	63	80	99	19	15	20	46	2.1	3	4	7
India	73	70	99	99	26	28	44	48	8.1	8.8	6	11
Indonesia	75	99	114	110	15	40	45	57	-	-	9	15
Malaysia	91	95	94	97	34	50	56	69	-	-	7	27
Nepal	26	91	114	117	10	21	33	40	2.3	3.2	5	5
Pakistan	40	44	65	73	13	15	25	24	2.3	2	3.5	2.8
Sri Lanka	99	100	113	109	47	51	77	84	1.2	2.5	5	-

Sources: Khan *et al.*, (1986); \*UNESCO (2003)

Pakistan's position is among the lowest as shown in table 1.2. Primary school enrolment rates were 40 and 44 in 1970 and 1980 respectively. It increases to 65 and 73 in 1990-91 and 2000-2001. Secondary enrollments in 1970 and 1980 were only 13 and 15 percent, increased to 25 and 24 in 1990-91 and 2000-2001 respectively, while tertiary enrollments were only 2.3 and 2.0 in 1970 and 1980 increased to 3.5 and 2.8 in 1990-91 and 2000-2001 respectively.

### 1.3 Labor Force in Pakistan

The population of Pakistan has grown at an average rate of 3 percent per annum since 1951 until mid 1980's and then it slowed down to an average rate of 2.6% per annum during 1985-86 until 1999-2000 (Economic Survey, 2004-2005). However, since 2000-2001, Pakistan's population grew at an average rate of 2.2 percent per

annum. The demographic scene in Pakistan shows that there is a declining trend in fertility and population growth.

An increase in population consequently leads to an increase in labor force as well. This is evident from Pakistan's labor force figure of 45.23 million in 2003-04 as compared to total labor force figure of 42.39 million in 2001-02 (Labor Force Survey, 2003-04). Table 1.3 shows us the total civilian labor force, employed and the unemployed labor force in Pakistan.

Table 1.3 Pakistan's employed and unemployed civilian labor force (million)

Area	2001-02			2003-04			2005-06		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>Pakistan</b>	42.39	35.57	6.82	45.23	37.13	8.1	50.05	39.97	10.08
Rural	28.84	23.63	5.21	30.71	24.3	6.41	34.32	26.22	8.1
Urban	13.55	11.94	1.61	14.52	12.83	1.69	15.73	13.75	1.98
<b>Employed</b>	38.88	33.19	5.69	41.75	34.69	7.06	46.94	37.81	9.13
Rural	26.66	22.19	4.47	28.64	22.93	5.71	32.48	25.01	7.47
Urban	12.22	11	1.22	13.11	11.76	1.35	14.46	12.8	1.66
<b>Unemployed</b>	3.51	2.38	1.13	3.48	2.44	1.04	3.11	2.16	0.95
Rural	2.81	1.44	0.74	2.07	1.37	0.7	1.84	1.21	0.63
Urban	1.33	0.94	0.39	1.41	1.07	0.34	1.27	0.95	0.32

Source: Labor Force Surveys (2001-02, 2003-04 and 2005-06)

Pakistan's total labor force increased from 39.4 million in 1999-2000 to 42.39 million in 2001-2002, to 45.23 million in 2003-2004 and which further increased to 50.05 million in 2005-06. Similarly the number of people employed registered an increase of more than 7 percent from 2001-2002 to 2003-2004, where as unemployment has increased only by 0.3 million during the same period. The number of unemployed labor force decreased from 3.48 million in 2003-04 to 3.11 million in 2005-06 across the area and gender during this period. The



number of employed persons increases from 41.75 million in 2003-04 to 46.94 million in 2005-06 across the gender and area.

Table 1.4 shows the percentage distribution of total population by literacy and educational levels.

Table 1.4 Percentage distribution of population in Pakistan by gender, literacy and by levels of education

Age-groups (Years)	Illiterate	Literate	Primary Education but below Middle	Middle but below Matric	Matric but below intermediate	Inter but below degree	Degree, Post-graduate, M.Phil/PhD
<b>Total</b> (all ages)	59.19	40.81	12.03	7.28	6.97	2.86	2.64
Total (10 years and above)	46.93	53.07	17.19	10.4	9.96	4.08	3.77
Total (5 years and above)	52.53	47.47	14	8.47	8.11	3.32	3.07
<b>Male</b> (total all ages)	50.5	49.5	14.03	9.47	8.64	3.42	3.33
10 years and above	35	65	20.08	13.56	12.37	4.9	4.77
5 years and above	42.57	57.43	16.28	10.99	10.02	3.97	3.86
<b>Female</b> (total all ages)	68.29	31.71	9.94	4.99	5.23	2.26	1.92
10 years and above	59.38	40.62	14.17	7.11	7.45	3.22	2.73
5 years and above	63.03	36.97	11.59	5.82	6.1	2.64	2.23

Source: Labor Force Survey (2005-2006)

According to the Labor Force Survey (2005-06), total literate population is only 40.81 percent while 59.19 percent are illiterate. Only 12.03 percent of the population has primary education and 7.28 percent have middle level of education. At higher level of education, the percentage of educated population decreases even more. There is a vast disparity between male and female with 49.50 percent literate males compared to only 31.71 percent females. In other words, the percentage of illiterate female is 68.29 percent while that of male is 50.50 percent. According to the figures in table

1.4, the situation in Pakistan is not very encouraging. It is now important to know about the percentage distribution of employed people by the level of education. Table 2.5 shows the percentage of employed literate people by region (rural/urban).

Table 1.5 Percentage of employed individuals (10 years and above) in Pakistan by level of education

Level of Education	Pakistan (10 years and above)	Pakistan (Urban)	Pakistan (Rural)
<b>Total Literates</b>	53.33	74.22	44.59
Male	48.82	67.38	41.06
Female	4.5	6.84	3.53
<b>Primary education</b> (both sexes)	15.49	15.7	15.4
Male	14.2	14.63	14.02
Female	1.29	1.07	1.38
<b>Middle</b> (both sexes)	9.72	12.37	8.61
Male	9.17	11.46	8.22
Female	0.55	0.91	0.39
<b>Matric</b> (both sexes)	12.19	18.51	9.54
Male	11.29	17.2	8.82
Female	0.89	1.31	0.72
<b>Intermediate</b> (both sexes)	3.77	7.39	2.25
Male	3.34	6.48	2.03
Female	0.42	0.92	0.22
<b>Bachelor:</b> B.A/B.Sc/LLB/MBBS/Eng/Agri/Computer Sc. (both sexes)	5.34	11.63	2.71
Male	4.74	10.19	2.46
Female	0.6	1.44	0.25
<b>P.graduate M.A/M.Sc</b> (both sexes)	1.42	3.26	0.65
Male	1.13	2.5	0.56
Female	0.29	0.76	0.09
<b>M.Phil, Ph.D</b> (both sexes)	0.04	0.07	0.03
Male	0.04	0.07	0.03
Female	-	-	-

Source: HIES (2004-05, pp.38-39)

It is clear from table 1.5 that the percentage of educated labor force is very low in Pakistan. Out of total employed labor force, 15.49 percent of both sexes have only primary education of which 14.20 percent is male and only 1.29 percent is female. The percentage of labor force having the middle standard education is 9.72 percent in which 9.17 percent is male and 0.55 percent is female. The percentage of labor force with secondary level schooling of both the sexes is 12.19 percent, 11.29 percent male and 0.89 percent female. The gap between male and female remains high up to postgraduate level of education. The percentage of people with higher levels of education in the labor force is low. Table 1.5 reveals that the share of female workers in the employed labor force is less as compared to male workers. There is a regional disparity too. The total number of literate employed population in urban areas is 74.22 percent while in rural Pakistan, it is 44.59 percent. In terms of gender, the percentage of male employed people with primary education in urban areas is 14.63 percent while in rural areas it is 14.02 percent. The percentage of female employed population with the same level of education is too low, only 1.07 percent in urban areas and 1.38 percent in rural Pakistan. It is very noticeable that the percentage of employed female in rural areas is greater than the urban. This shows that the percentage of literate females in urban Pakistan is greater than the literate females in rural areas. The percentage of employed female with higher level of education shows a decreasing trend. The percentage of the total employed males in urban areas with middle standard education is 11.46 percent while in rural areas it is 8.22 percent. In the same category, the percentage of female workers is just 0.91 percent in urban and 0.39 percent in rural Pakistan. From table 1.5, it can be concluded that the ratio of literate labor force is low in Pakistan. It also reveals a gap between male and female workers and also regional disparity in Pakistan.

Labor force registered nearly constant growth of around 2.2 percent over the past several years (Economic Survey, 2004-2005). Due to the demographic transition in Pakistan, the percentage of old age population decreased by 1.5 percentage points (Economic Survey, 2004-2005). This change in demographic structure owes heavily to a steady decline in population growth since 1981. With further slow down in population growth, Pakistan may see its shares of working age population rise while that of young age population decline. Demographic transition provides an opportunity for raising economic growth and increasing prosperity. Pakistan may succeed in mobilizing sufficient investment and use it efficiently with the rising working age population. However, this will depend upon largely on government's socio-economic policies. If the workforce is better educated, it will be better placed to contribute to economic growth. If government's macroeconomic policies are such that lead to job creation, the country will more likely to realize the benefits of demographic transition in terms of higher economic growth.

#### **1.4 Socio-economic Development**

The impact of low priority given to education sector in the past several decades may be felt by looking at the socio-economic indicators in Pakistan. Pakistan became independent in 1947 but is still struggling to win over its socio-political and economic problems. Table 1.6 shows some of the important statistics from 1984 till 2005 of Pakistan.

Table 1.6 Key economic ratios and long term trends in Pakistan economy

Economy	1984	1985	1994	1995	2003	2004	2005
GDP(US Billion)	31.2	31.1	51.9	60.6	82.3	96.1	110.7
GDS/GDP	6.7	5.9	16.8	15.8	17.3	18.4	12.2
GNS/GDP	25.9	22.7	22.2	21	22.9	23	16
Exports (US million)	2669	3249	6685	9628	10889	15123	17725
Imports (US million)	5994	7106	8685	13023	11333	17714	25557
Exports of goods & services/GDP	11.1	10.4	16.3	16.7	16.9	16	15.3

Source: World Bank (2007)

\* GDS is Gross Domestic Savings, and GNS is Gross National Savings

According to table 1.6, the GDP of Pakistan was a US\$ 31.2 billions in 1984, US\$ 51.9 billions in 1994, US\$ 82.3 billions in 2003, US\$ 96.1 billions in 2004 and US\$ 110.7 in 2005. The growth in the GDP remains very low. Its exports are lower than imports in all years. The total amount of exports was US\$ 2,669 million in 1984 which increased to US\$ 17,725 million in 2005. So, US\$ 15,056 million were added to the national income due to increase in exports during the same period. Exports increased by 84.94 percent in the same period. On the other hand, total imports increased from US\$ 5,994 million in 1984 to US\$ 25,557 million in 2005, meaning that goods and services were imported worth of US\$ 19,563 million more during 1984-2005. Imports increased 76.54 percent during the same period.

The impact of less priority given to education by the successive governments in the past and the low school enrolment ratios may be felt in the transformation of the structure of the economy of Pakistan. Table 1.7 shows us how low and slow the transformation process of the economy during the 1984-2005 periods.

Table 1.7 Structure of the Pakistan economy

%age of GDP	1984	1985	1994	1995	2003	2004	2005
Agriculture	27.9	28.5	25.6	26.1	23.6	22.3	21.6
Industry	22.7	22.5	24.3	23.8	23	24.9	25.1
Manufacturing	16.1	15.9	16.8	16.3	16.2	17.6	18.2
Services	49.4	49	50.2	50.1	53.4	52.7	53.3

Source: World Bank (2007) estimates.

It is evident from table 1.7 that the structure of the economy changed very slowly. The share of the agricultural sector was 27.9 percent in 1984, 25.6 percent in 1994, which further decreased to 21.6 percent in 2005. The contribution of agriculture sector to GDP dropped 6.30 percent during 1984-2005. Industrial sector share rose from 22.7 percent in 1984 to 25.1 percent in 2005. The manufacturing sector share slightly increased from 16.1 percent in 1984 to 18.2 percent of the GDP in 2005. The percentage contribution of industrial and manufacturing sectors increased by 2.40 percent and 2.10 percent between 1984 and 2005. Aurther (1994) says that human resource development is an important factor in economic growth as well as for the changes in the economic structure of the economy. A substantial literacy base was a necessary prerequisite for the massive economic transformation that occurred in the northern hemisphere during the eighteenth and nineteenth centuries (Foster, 1987). Material standard of living, the character of social and cultural life and the well-being of the masses are widely recognized to be associated with human resource development.

Since the inception of Pakistan in 1947, almost all governments in the past have failed in providing sufficient social services to the people of this country. In support of this, a comparison of the social sectors of some of the comparable selected nations

is presented in table 1.8.<sup>1</sup> Countries like India, Sri Lanka, Pakistan and Bangladesh of the South Asia share similar histories. They are also members of the South Asian Association for Regional Cooperation (SAARC). China is included in this comparison because it is a key player in the region and used to have GNP per capita close to that of Pakistan in 1993. Two other nations, Ghana and Nigeria, not from South Asia are because Nigeria has a large population and Ghana has a GNP per capita in 1993 close to equal to that of Pakistan's (Zaidi, 2005).

In table 1.8, the first three columns show us the populations of these countries for the years 1993, 2001 and 2005 respectively. China has the largest population in all these countries followed by India, Pakistan and Bangladesh. The fourth and fifth column shows GNP per capita in US dollars for the years 1993 and 2002, while in column number six and seven shows the ranking of these countries according to GNP per capita for the same years. It is evident from table 1.8 that China had a GNP per capita of US\$ 490 in 1993, compared to Pakistan's US\$ 430 in the same year. China has improved its position and increased GNP per capita to US\$ 940 while that of Pakistan decreased to US\$ 410 in 2002 during the same decade. Five out of eight countries in this comparison have improved their GNP per capita during 1993-2002. Pakistan, Ghana and Nigeria lagged behind as shown in table 1.8.

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<sup>1</sup> The idea of constructing table 1.8 has been taken from Zaidi (2005, p. 385).

**Table 1.8**

Comparisons of the Social Sectors of Some of the Selected Countries

Country	Population (million)			GNP Per Capita		GDP Per Capita Rank		Adult Literacy Rate			Primary Enrplment Rate				Secondary Enrolmant Rate				Higher Enrolment rate			Female Urban Literacy Rate				Public Expenditure on Education as %age of GDP				HDI <sup>1</sup>		HDI Rank <sup>2</sup>			Gender Related Development Index (GDI) <sup>3</sup>		Human Power IndexRank <sup>4</sup>		ED <sup>5</sup>	
	1993	2001	2005	1993	2002	1993	2002	1970	1993	2001	1970	1992	2001	2005	1970	1992	2001	2005	1995	1995	2005	1995	2001	1970	1980	1990	1995	2005	1995	2005	1993	2003	2007	2003	2004	2003	2007	2008		
Pakistan	122.8	146.3	158.1	430	410	31	30	20	35.7	44	40	46	80	87	13	21	40	26	2	3	4.6	22.3	28.8	1.7	2	2.6	2.6	2.3	0.453	0.553	128	144	138	120	124	65	77	120		
Bangladesh	115.2	140.9	153.3	220	360	12	27	25	36.4	40.6	54	77	89	108	-	19	43	47	-	6	6.5	22.4	30.8	-	1.5	2	-	2.5	0.371	0.547	146	139	140	112	120	72	93	107		
India	898.2	1033.4	1134	300	480	20	38	34	49.9	58	73	102	-	119	26	44	-	56	5	7	11.4	35.4	46.4	2.6	3	3.9	3.4	3.8	0.451	0.619	134	127	128	103	112	53	62	105		
China	1176.4	1285.2	1314	490	940	33	53	52	79.3	85.8	89	121	93	112	24	51	-	74	-	5	20.3	69.8	92.5	1.2	2.5	2.3	2.3	-	0.65	0.777	111	104	81	83	72	26	29	61		
Ghana	16.4	20	22.5	430	270	30	18	-	60.7	72.7	64	74	58	88	14	38	31	43	1	1	5.2	49	64.5	4.3	3.1	3.3	-	5.4	0.473	0.561	129	129	135	104	116	46	66	113		
Nigeria	105.2	117.8	141.4	300	290	21	22	21	52.5	65.4	37	76	-	103	4	20	-	34	0	4	10.2	42.1	57.7	-	-	0.1	0.9	-	0.391	0.483	141	152	158	124	138	54	80	111		
Sri Lanka	17.9	18.8	19.1	600	840	39	50	80	89.3	91.9	99	107	96.9	98	47	74	-	82	2	5	-	85.8	89.3	4	2.7	2.7	3	-	0.716	0.743	97	99	99	80	88	34	44	-		
Vietnam	71.3	79.2	85	170	430	5	32	73	91.9	92.7	-	108	96	96	-	33	62	75	-	4	16	88.7	90.9	-	-	-	-	-	0.56	0.733	120	109	105	89	90	39	36	79		

Note: 1. The higher the rank the better – the poorest country is ranked 1.

2. The lower the rank the better – the best country is ranked 1, the worst is 175<sup>th</sup>.

3. The best is ranked 1, the worst is 175<sup>th</sup>.

4. The best is ranked 1, the worst is 94<sup>th</sup>.

5. The best is ranked 1, the worst is 129<sup>th</sup>.

Sources: The World Bank: World Development Reports, various issues; UNDP, Human Development Reports, various issues; World Bank (2000) Table G Statistical Appendix; UNESCO (2008) Annex table 1, p. 202.



According to the GNP per capita ranking Pakistan was 31<sup>st</sup> poorest country in 1993 out of 132 nations, while Vietnam was the fifth poorest country in the same year. Vietnam rose to 32<sup>nd</sup> poorest nation from fifth position, however, Pakistan declined to 30<sup>th</sup> poorest nation in 2002. China tops this ranking with 53<sup>rd</sup> position followed by Sri Lanka with 50<sup>th</sup> and India with 38<sup>th</sup> position respectively in 2002. India has improved its position from 20<sup>th</sup> in 1993 to 38<sup>th</sup> in 2002.

GNP per capita is very simplistic measure of social development. The Human Development Index (HDI) is a larger and better composite indicator which includes much more than just per capita income. This index contains three important components: life expectancy at birth, representing a long and healthy life; educational attainment, comprising adult literacy with two-third weight, a combined primary, secondary, and tertiary education enrolment ratios with one-third weight; and the real GDP or income (UNDP, 1995).

The HDI based on the values of HDI shows a reverse order: the higher the number, the worse the nature and extent of social development in that country. Pakistan's rank was 128<sup>th</sup> out of 174 countries in 1993, showing a lack of social development. The position of Pakistan has further fallen to 144<sup>th</sup> and 136<sup>th</sup> in 2003 and 2007 respectively. Sri Lanka was the best of the eight countries selected (97<sup>th</sup>) and Bangladesh (146<sup>th</sup>) the worst in 1993. The performance of China is outstanding in these selected countries. Its position was 111 in 1993, falls to 81<sup>st</sup> position in 2007, showing an impressive improvement in its social sector. China tops the table with 81<sup>st</sup> followed by Sri Lanka (99<sup>th</sup>), Vietnam (105<sup>th</sup>). Nigeria has become the worst with 158<sup>th</sup> position in terms of HDI ranking in 2007. Again Bangladesh, India, China and Vietnam have improved their ranking in HDI during 1993 to 2007; however,

Pakistan has fallen down the HDI ladder during the same period. Interestingly in the selected countries, with a GDP per capita of US\$ 430 in 2002, Vietnam is 32<sup>nd</sup> poorest nation in the world, yet its position is 109<sup>th</sup> and 105<sup>th</sup> in terms of HDI ranking in 2002 and 2007 respectively. Pakistan's human and social profile is very unsatisfactory. Even Nepal, Bangladesh and Bhutan have better human and social statistic than does Pakistan.

Adult literacy is considered to be a fairly good indicator of social development in any country. In new growth theories, where human capital formation is a pre-requisite for growth, literacy acts as an important proxy for many key ingredients. Table 1.8 reveals that Pakistan's record is very poor for all the education statistics. In 1970, literacy rate in Pakistan was 20 percent which increased to 35.7 percent in 1993 and 44.0 percent in 2001, showing an increase of 120 percent during the same period, however, still remains the lowest in this comparison. In all other countries given in this table, literacy rates in 1970 and 2001 as well, seem good and satisfactory as compared to Pakistan. Nigeria did well, increased its adult literacy from 21 percent in 1970 to 65.4 percent in 2001. Vietnam tops this comparison with 92.7 percent literacy in 2001, followed by Sri Lanka's 91.7 percent and China with 85.8 percent in the same year.

The column for the gender-related development index (GDI), an index created by UNDP, measures the inequalities between men and women showing difference of life expectancy, adult literacy; primary, secondary and tertiary enrolment rates; and a standard of living. According to table 1.8, Pakistan and Nigeria out of 175 countries, performed the worst, while in Sri Lanka and China, the gender difference between men and women is less severe with 88<sup>th</sup> and 72<sup>nd</sup> position in 2004.

The second last column of table 1.8 presents human poverty index (HPI) which measure deprivations of the people in terms of vulnerability to early death, exclusion from the world of learning and knowledge as measured by literacy, the lack of access to basic health and water facilities. According to the ranking, Pakistan tops the ranking. Pakistan's position was 65<sup>th</sup> while Bangladesh's rank was 72<sup>nd</sup> in 2003. In 2007, Pakistan's position was 77<sup>th</sup> while the worst performer is again Bangladesh with 93<sup>rd</sup> position in HPI. The best performer is again China with 29<sup>th</sup> position in HPI.

The last column of this table shows Education for All Development Index (EDI). The index included 129 countries. Pakistan's position again very low (120<sup>th</sup>), only nine countries are behind Pakistan. China tops the selected countries in this table with 61<sup>st</sup> position followed by Vietnam (79<sup>th</sup>). India is ranked at 105<sup>th</sup>, Bangladesh 107<sup>th</sup>, Nigeria 111<sup>th</sup>, while Ghana's position is 113<sup>th</sup> out of 129 nations (UNESCO, 2008, Annex table.1). The placement of Pakistan at lower category has been attributed to low primary school participation, adult illiteracy rate, gender disparity and inequalities in education.

Pakistan's social sector development has been poor as compared to other countries of the world. Even less developed and poorer countries have developed their social sectors well ahead of Pakistan.

The position of Pakistan regarding the level of corruption in the country is also not very good and encouraging. According to the latest Transparency International (TI)<sup>2</sup>

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<sup>2</sup> Berlin-based Transparency International was founded to combat corruption around the world, ranks countries on a scale of "0" to "10" with the most corrupt countries close to zero and most honest at 10.

corruption report of 2005, the position of Pakistan is 144<sup>th</sup> in the world (Sharif, 2005). The ranking of India and Iran is 88<sup>th</sup>, Malaysia's 39<sup>th</sup>, Oman got the top (1<sup>st</sup>) position in the Muslim world and Bangladesh has a very bad position in the globe, while Iceland obtained the 1<sup>st</sup>, Finland and New Zealand got 2<sup>nd</sup> position each in the world.

Writing on Pakistan's educational system, Looney (2003) says that Pakistan remains a country where most educational plans and policies have failed to make any major contribution to increase literacy rate, improve employment opportunities and boost up the quality of life for the poor. Further he writes that currently around 33 percent of the country's population can be classified as poor. According to him, fight against poverty in Pakistan is complicated by two main factors:

(1) high population growth rate, and (2) limited resources devoted to education, only a very small proportion, around 2 percent of the GNP goes to education. This is considerably below even the minimum of 4 percent called for by UNESCO (Haq and Haq, 1998). Roughly 75 percent of school age children go to primary school, only 25 percent obtain a completion certificates. The position of Pakistan regarding the literacy situation is 142<sup>nd</sup> among 167 countries of the world. He concluded that if Pakistan wants to improve the standard of life of the people, has to invest more in education. The public sector must invest heavily in improving the quality of the human resource. This includes not only reaching the goals of universal primary education for boys and girls but also providing secondary and tertiary education to a significant portion of the population.

## 1.5 Cost of Low Investment in Education to Pakistan

From the preceding discussion, it can be initially concluded that Pakistan appears to have foregone fairly high returns and economic growth due to low enrolment ratios in education and literacy rate as a whole. For this purpose, Birdsall *et al.*, (1993) have tried to quantify the opportunity cost of low investment in education in terms of foregone income. They have used the model and equation of Barro (1991).<sup>3</sup>

Table 1.9 shows the real GDP per capita of Pakistan, Indonesia, Malaysia and Korea from 1960 to 1985 respectively.

Table 1.9 Real GDP per capita (US\$) in Pakistan, Indonesia, Malaysia, and Korea

Country	1960	1980	1985
Indonesia	493	1063	1255
Korea	690	2396	3056
Malaysia	1103	3121	3415
Pakistan	558	989	1153

Source: Birdsall *et al.*, (1993)

Birdsall, *et al.*, (1993) used Barro's equation, which implies that due to low school enrolments, Pakistan has foregone substantial economic growth. They tried to calculate the gain for Pakistan in terms of per capita GDP in 1985 that would have resulted had Pakistan's 1960 primary school enrolment rate been the same as that of, for example, Indonesia's, Malaysia's or Korea's. The model predicts that had Pakistan's primary school enrolment rate in 1960 been 67 (Indonesia) instead of 30,

<sup>3</sup> Barro's Equation:  $GR_{6085} = 0.0302 - 0.0075GDP_{60} + 0.0250PRM_{60} + 0.0305SEC_{60}$   
(6.2) (4.46) (3.86)  
N=98  $R^2 = .56$