THE LAHORE JOURNAL

OF

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8 2003

THE LAHORE JOURNAL OF ECONOMICS

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Vol. 8, 2003

Relationship between Health Expenditure and GDP in an Augmented Solow Growth Model for Pakistan: An Application of Co-integration and Error-Correction Modeling

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Abstract

This paper examines the temporal interdependence between gross domestic product and health expenditure per capita for Pakistan in an augmented Solow growth model suggested by Mankiw, Romer and Weil (1992) for the period of 1973-2001. This paper is an extension of the MRW model by incorporating health capital proxied by health expenditure to the augmented Solow model. Moreover, an openness variable is also included in the model in order to capture the effect of technological changes on growth. The paper employs co-integration, ECM methodology and several diagnostic and specification tests. The empirical findings show a significant and positive relationship between GDP and Health Expenditure, both in the long- and short-run.

1. Introduction

Since the classic pioneering work of Solow (1956), there have been significant developments in the theoretical and empirical literature on endogenous growth models. This initial work analysed economic growth by assuming a neoclassical production function with decreasing returns to capital in which rates of saving and population growth were considered exogenous. The model was augmented by Mankiw, Romer and Weil (1992) with the inclusion of human capital known as the MRW model. Later, Barro (1997); Gemmell (1996) found human capital as a significant factor in determining growth. Similarly, Miller and Upadhyay (2000) examined a significant impact of interaction between human capital and openness as a measure for the country's ability to absorb technological advances; this has a significant effect on total factor productivity. An important issue in this perspective has been highlighted by Siddiqui, Afridi, and Haq, (1995) that

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improvement in the health status of the population is an important component of human capital formation. Improved health status of a nation creates an outward shift in the labour supply curve and increases productivity of labour with an increase in the productivity of investment in other forms of human capital, particularly education.

Most of the studies in this area have been based on the cross-country panel data (see for example Blomqvist and Carter 1997; Gerdtham *et al.* 1992; Hansen and King 1996; Hitiris and Posnett 1992; Knowles and Owen 1997; Nancy and Paul 2001; Temple 1999) with no indication of any time-series country specific study. Moreover, with the exception of Hansen and King (1996), Nancy and Paul (2001), the previous studies have not focused on the stationarity and co-integration properties of the data.

The objective of this study is to examine the presence of co-integration between Gross Domestic Product (GDP) and health capital proxied by health expenditure per capita in an augmented Solow growth model for Pakistan. Although the Solow model has been augmented in different ways, there are a few studies that have examined the effects of health capital on growth; for instance, Knowles and Owen (1995; 1997) have examined the effects of incorporating health capital in the MRW model.[1]

This paper is an extension of the previous literature for numerous reasons. Firstly, it augments health capital in the Solow growth model for Pakistan. Secondly, the modeling approach is based on the multivariate maximum likelihood-based inference of co-integrated vector autoregression (VAR) models developed by Johansen (1988, 1991, and 1995). As is well known, the multivariate modeling strategy offers a major advantage in that multiple co-integrating relations can be modeled in a system without the need to impose arbitrary normalisations necessary in the single-equation Engle-Granger two-step co-integration approach.

The paper comprises five sections including the present one. Section 2 describes the growth model which has been augmented by inclusion of investments in human capital, particularly health. Section 3 presents issues pertaining to data. Section 4 offers the empirical analysis. The last section provides the conclusion.

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[1] In their model, the labour variable in an aggregate production function of education and health was augmented. Their result suggests that, incorporating human and health capital as labour augmenting or as separate factors of production does not change the conclusions empirically.

2. The Health Capital Augmented Growth Model

We begin by specifying a Cobb-Douglas production function with two factor inputs, capital and labour,

$$Y_t = K_t^{\alpha} A_t L_t^{1-\alpha} \tag{1}$$

Where Y_t is real income, K_t represents physical capital, L_t is labour, and A_t is level of technology parameter reflecting how well a country does at transforming inputs into outputs. A_t is specified as:

$$\ln A_t = \Pi X_t \tag{2}$$

Where Π is the parameter vector to be estimated and X_t is a vector of variables determining total factor productivity (TFP). The vector X_t contains the log-level of the degree of openness of the economy O_t since a country that is more open to the rest of the world has greater ability to absorb technological advances generated in leading nations (Romer, 1992; Barro and Sala-i-Martin, 1995). For simplification, labour is assumed to grow exogenously at rates of 'a' defined as.

$$L_t = L_0 e^{at} \tag{3}$$

Defining $k_t = (K_t / L_t)$ and $y_t = (Y_t / L_t)$ as the stock of capital and the level of output per unit of labour respectively, the evolution of capital is governed by

$$\dot{k}_t = \omega_t^k y_t - (a + \delta)k_t = \omega_t^k k_t^{\alpha} - (a + \delta)k_t \tag{4}$$

Where a dot indicates change over time, ω_t^k is a fraction of output invested in physical capital in period t, and δ is the rate of depreciation. The stock of capital (K_t) converges to the steady state value of capital (k_t^*) defined as.

$$k_t^* = \left[\omega_t^k / (n + g + \delta) \right]^{1/(1-\alpha)} \tag{5}$$

Substituting the value of k_t^* from (4) in (1) and taking natural logs on both sides, the steady state income per capita is written as:

$$\ln y_t = \beta_0 + \frac{\alpha}{1-\alpha}\ln \omega_t^k - \frac{\alpha}{1-\alpha}\ln(n+g+\delta) + \varepsilon_t \qquad (6)$$

Where β_0 is the intercept and ε_t is the random disturbance term. Equation (6) is the simplified form of the Solow model and has been used as the basic model in empirical specifications (see for example Summer and Heston 1988; Barro and Sala-i-Martin 1992; Islam 1995). Later on human capital was included as another input of production (see Barro and Lee (1993), Benhabib and Siegel (1994), Soderbom and Teal (2001)). Augmentation of human capital in the growth model proved to be useful concerning the prediction power and the size of α, exclusion of human capital creates a specification biased. The production function in equation (1) is now written as:

$$Y_t = K_t^\alpha H_t^\beta A_t L_t^{1-\alpha-\beta} \qquad\qquad \alpha + \beta < 1 \qquad (7)$$

Where H is the stock of human capital (a proxy by average level of education) in addition to the growth in physical capital in equation (3). The stock of human capital growth is determined by:

$$\dot{h}_t = \omega_t^h y_t - (a+\delta)h_t = \omega_t^h h_t^\beta - (a+\delta)h_t \qquad (8)$$

Where ω_t^h is a fraction of output invested in human capital in the time period t and $h_t = (H_t/L_t)$ is the human capital per unit of labour. Hence, the equation (6) is now written as:

$$\ln y_t = \beta_0 + \frac{\alpha}{1-\alpha-\beta}\ln\omega_t^k + \frac{\beta}{1-\alpha-\beta}\ln\omega_t^h - \frac{\alpha+\beta}{1-\alpha-\beta}\ln(n+g+\delta) + \varepsilon_t \qquad (9)$$

Similar to the human capital augmentation, the Solow model can be augmented to investments in health. The evolution of health expenditure is determined by.

$$\dot{e}_t = \omega_t^e y_t - (a+\delta)e_t = \omega_t^e h_t^\gamma - (a+\delta)e_t \qquad (10)$$

Where ω_t^e is a fraction of output invested in health capital in the time period t and $e_t = (E_t/L_t)$ is human capital per unit of labour. Now the equation (9) is written as:

$$\ln y_t = \beta_0 + \frac{\alpha}{1-\alpha-\beta-\gamma}\ln\omega_t^k + \frac{\beta}{1-\alpha-\beta-\gamma}\ln\omega_t^h + \frac{\gamma}{1-\alpha-\beta-\gamma}\ln\omega_t^e$$

$$- \frac{\alpha+\beta+\gamma}{1-\alpha-\beta-\gamma}\ln(n+g+\delta)+\varepsilon_t \qquad (11)$$

The model in equation (10) can be estimated with OLS. In the new endogenous growth theory it has been argued that the degree of absorption of technological advances increases with increases in the openness of a country. Considering this view the openness variable (proxied by trade intensity) is also included in this model in order to capture the effect of technical progress. This will also attenuate the specification bias and increase the robustness of the inferences drawn. Similarly, the addition of human and health capital along with physical capital improves the performance of the Solow model. Investments in human, health and physical capital are expected to have a positive effect on per capita income. Similarly, the openness variable is also expected to have a positive influence on per capita income. It helps in removing the lack of technological needs, so that an increase in the market size or in the availability of production technology affects the returns to innovation and therefore leads to higher per capita income.

3. The Data

The data has been acquired from various issues of the *Economic Survey of Pakistan* and Statistical Supplements published by the Ministry of Finance. The data is on an annual basis covering the time period of 1973-2001. The time series includes population, real GDP, real gross fixed capital formation, real physical capital[2] and gross enrollments in primary, secondary and tertiary levels of education taken as a proxy for human capital, because enrollment rates measure the quantitative additions in the form of years of schooling to the stock of human capital. Health expenditure is taken as a proxy for health capital whereas trade intensity defined as trade to GDP ratio is taken as a proxy for openness.

4. Methodology and Empirical Findings

Following the convention for time series methodology, the order of integration of the individual series has been tested prior to the co-integration analysis and estimation of the Error-Correction Model (ECM).

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[2] The construction of the capital series is discussed in Annexure I

The Augmented Dickey-Fuller (ADF) and Phillips-Parren (PP) tests are used for this purpose. The ADF test is based on the following equation:

$$\Delta S_t = \alpha + \beta t + \delta S_{t-1} + \sum_{j=1}^{p} \gamma_j \Delta S_{t-j} + e_t \qquad (12)$$

The lag p is chosen to render the residuals free of serial correlation. We then test the composite null hypothesis H_0: $\beta = 0$, $\rho = 1$ using the Dickey-Fuller (1981) statistic ϕ_3. If H_0 is rejected, there is no unit root and the presence of drift and trend can be ascertained by conventional t-test on α and β respectively. If H_0 is not rejected we re-estimate Equation (11) setting $\beta = 0$ and then use the Dickey-Fuller (DF) statistic τ_μ, to test the hypothesis H_0' : ρ = 1. If H_0' is favoured, we get additional confirmation about the presence of a unit root. We may then resort to the statistic ϕ_2 to test the null hypothesis H_0'' : $\alpha = 0$, $\rho = 1$ Rejection of H_0'' argues for the presence of a unit root with drift, and its non-rejection is defined as having a unit root without drift. The same procedure is repeated for the first differenced (growth) series, and if necessary for higher-order differenced series until a stationary series is obtained. However, the Dickey-Fuller test methodology suffers from a restrictive assumption that the error term is i.i.d. When economic time series exhibit hetroscedasticity and non-normality in raw data, then Phillips-Perron (PP) test is preferable to the DF and ADF tests.

Phillips and Parren (1988) developed a generalisation of the Dickey-Fuller procedure that allows for the distribution of the errors. The procedure considers the following regression equation.

$$S_t = \tilde{a}_0 + \tilde{a}_1 S_{t-1} + \tilde{a}_2 (t - T/2) + u_t \qquad (13)$$

Where T is the number of observations and disturbance term u_t is such that $E(u_t) = 0$, but there is no requirement that the disturbance term is serially un-correlated or homogenous. The ADF test is very sensitive to the assumption of independence and homogeneity. It is for this reason that the PP test is preferred to the ADF test.

The results of the ADF and PP tests, applied to level and first difference data, are reported in Annex II Table 1. It is observed from the results that none of the series are non-stationary at level, but all the series are stationary at first difference (at 5% level of significance). Once the order of integration of the series is determined the next step is the co-integration analysis.

4.1. Co-integration analysis

The test for co-integration is given in Annex III Table 1. The Johansen technique (Johansen, 1988, 1991; and Johansen and Juselius, 1990) has been used to test the existence of co-integration in the underlying series. Both, the maximum eigenvalue (λ_{max}) and trace (τ) test statistics have been used to determine the number of co-integrating vectors r. The null hypothesis tested was that there can be no co-integrating vectors among the variables of equation (10). The result shows that the null hypothesis of no co-integration is rejected in both tests at the 1% significance level. Therefore, there is a strong and stable long-term relationship existent among the variables in equation (10).

Given that the Johansen co-integration technique indicated the existence of more than one co-integrating vector, the question is whether it is better to have one or many co-integrating vectors among the underlying series. The existence of many co-integrating vectors may indicate that the system under examination is stationary in more than one direction and hence more stable (Dickey *et al.*, 1994).

4.2. Long-run parameter estimates

The long-run parameters estimated by using the Johansen technique are normalised on the basis of the GDP variable by setting its estimated coefficient at -1. The coefficients and their respective standard errors are given in Table1.

Table 1: Estimated long-run parameters

Normalised on the basis of GDP per capita		
Equation	Coefficient	Std. Error
Y_t^r	-1	-
K_t^r	0.29*	0.04
H_t	0.37*	0.04
E_t	0.13*	0.03
O_t	0.11*	0.09
Constant	-1.61*	0.17

Note: * indicates significance at the 1%-level.

Short-run ECM estimation:

According to Engle and Granger (1987) co-integrated variables must have an ECM representation. The major advantage of the ECM representation is that it avoids the problems of spurious correlation between dependent and explanatory variables, and makes use of any short- and long-run information in the data. Table 2 presents the sign of the cumulative coefficients and their respective lag structures. The respective lag length for each variable and the sequence in which the variables are entered in the ECM have been selected by using Akaike (1969) FPE criterion and the Caines, Keng and Sethi (1981) "Specific Gravity" (SGC) criterion respectively[3]. Refer to Annex IV, Table 1 for details about the short run elasticities and their respective t-statistics.

Table 2: Error-correction Specification

Growth Equation:

$$\Delta Y_t^r = -\sum_{i=1}^{2} \alpha_{1i} \Delta Y_{t-i}^r + \sum_{j=1}^{5} \alpha_{2j} \Delta K_{t-j}^r + \sum_{k=1}^{3} \alpha_{3k} \Delta H_{t-k}$$

$$+ \sum_{m=1}^{2} \alpha_{4m} \Delta E_{t-m} - \sum_{n=1}^{1} \alpha_{5n} \Delta O_{t-n} - \alpha_6 EC_{t-1} + \varepsilon_t$$

Where the symbol Δ is the first difference operator, ε_t is a white noise. The regressor EC_{t-1} corresponds to the one year lagged error-correction term and it is expected that $\alpha_6 < 0$. With the dynamic specification of the model the short-run dynamics are influenced by the deviation from the long-run relationship depicted by EC_{t-1}. Notice that the ECM model in Table 2 does not contain an intercept term. The reason is that the error-correction EC_{t-1} already includes an estimate of it.

The empirical results show that health expenditure is a statistically significant and reliable determinant of growth. Hence, in the short-run growth is an increasing function of all three types of capitals. However, the

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[3] For details see Akaike, H. (1969) "Statistical predictor identification" and Caines, P.E.C., Keng, W. and Sethi, S.P. (1981) "Causality analysis and multivariate autoregressive modeling with an application to supermarket sales analysis"

openness variable shows a significant but negative effect on growth in the short-run.

Various diagnostic and specification tests have been applied in order to check the validity of the policy conclusions, which are gathered from the estimation of the ECM model (for detail see Annex IV Table1).

5. Summary and Conclusion

Based on the economic modeling of previous studies using annual data of Pakistan's economy, the paper investigated the possible co-integration between health expenditure and GDP in an augmented Solow growth model in a Cobb-Douglas functional form. It used Johansen co-integration analysis, ECM methodology and different diagnostic tests. Before proceeding to testing for co-integration, unit-root tests were performed using ADF and PP tests. The reported t-values resulting from the ADF and PP test indicated that the underlying series appear to be stationary in first differences. The Johansen co-integration test confirms the existence of a strong and stable long-term relationship among the variables in the growth model.

The ECM technique is applied to avoid the spurious regression phenomenon. The ECM model estimates confirm the existence of a short- and long-term positive and significant relationship between health expenditure and economic growth. Furthermore, the short-run parameters of the other two capitals (i.e. physical and human capital) also have a significant positive effect on the growth variable. In terms of adjustments made to the long-run equilibrium, the error-correction term EC_{t-1} is found to be statistically significant. The specification and diagnostic test yields satisfactory results. Hence an inclusion of health expenditure as a proxy for investment in health capital also improves the significance of the coefficients of human and physical capital in the growth model.

ANNEXURE I

Construction of Capital Stock Series

Initial capital stock: The procedure for estimating the overall initial capital stock is shown in Table 1 below. A depreciation rate of 5 % is assumed[4]. Hence, the average life span of capital is 20 years (i.e. 1/0.05 = 20 years). If the 5 percent depreciation rate is indeed true, then the amount invested in 1953 would have zero value in 1973. Thus, the value of investment in 1953 of Rs. 7910 million in 1981 prices will be zero in 1973 as shown in the Table. Similarly, the investment in 1954 of Rs. 8856 million will have a remaining value of Rs. 442 million in 1973, while for 1955 investment will have remaining value of Rs. 954 million. If one continues this process until 1973, then one can obtain the value of the overall capital stock in 1973, which is Rs. 22,8266 million at 1980-81 prices.

Table 1: Estimation of initial capital stock

	GCF	1953	1954	1955	1956	...	1971	1972	1973
1953	7910	7910	7515	7139	6782	...	791	396	0
1954	8856		8856	8413	7992	...	1328	1156	443
1955	9539			9539	9059	...	1908	1431	954
1956	10323				10323	...	2581	2065	1548
....	....					...	....	....	....
1971	27842					...	27842	26450	25128
1972	28373					...		28373	26954
1973	29712					...			29712

Initial capital stock in 1973 at 1980-81 prices = 22,8266

Capital Stock Series: The series for capital stock was derived by using the perpetual capital inventory method. That is:

$$K_t = K_{t-1}(1-\delta) + I_t$$

Where Kt is the capital stock in year t, Kt-1 is the capital stock in the previous year, $\delta (=0.05)$ is the depreciation rate, and It is the investment in year t.

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[4] Other studies have also applied 5 % depreciation rate (see Austria and Martin, 1992)

ANNEXURE II

Table 1: Tests for Unit-Roots

VARIABLES	Level		First Difference	
	ADF	PP	ADF	PP
Y_t^r	-1.91	-1.79	-4.13*	-4.24*
K_t^r	-1.99	-14.77*	-3.49**	-3.84*
H_t	-2.37	-1.95	-4.26*	-5.66*
E_t	0.60	0.60	-3.17**	-4.60*
O_t	-2.36	-1.91	-4.79*	-4.25*
L_t	-1.20	-1.27	-3.67**	-5.22*

Note: *(**){***}significant at 1%, 5% and 10% level.

ANNEXURE III

Table-1: Johansen Co-integration Test Results

Maximal Eigen-value Test				Trace Test			
Null H_0	Alternative H_{1s}	Eigen-value	Critical Value (95%)	Null H_0	Alternative H_1	LR-ratios	Critical Value (95%)
r=0	r=1	42.67**	34.40	r=0	r>1	127.10**	76.1
r=1	r=2	32.87**	28.14	$r \leq 1$	r>2	84.43**	53.1
r=2	r=3	25.36**	22.00	$r \leq 2$	r>3	51.56**	34.9
r=3	r=4	16.66**	15.67	$r \leq 3$	r>4	26.20**	20.0
r=4	r=5	9.54**	9.24	$r \leq 4$	r>5	9.54**	9.2

*Note: ** significant at   5% level.*

ANNEXURE IV

Table 1: ECM Estimates

Variables	Coeff.	Short-run Elasticities	t-stats
ΔY_{t-1}^{r}	1.32		5.1
ΔY_{t-2}^{r}	-1.60		-7.0
ΔK_{t-1}^{r}	-0.93		-1.3
ΔK_{t-2}^{r}	5.50	**0.54**	4.4
ΔK_{t-3}^{r}	-5.12		-4.9
ΔK_{t-4}^{r}	0.11		0.2
ΔK_{t-5}^{r}	1.13		2.6
H_{t-1}	0.43		5.3
H_{t-2}	-0.43	**0.20**	-5.1
H_{t-3}	0.25		5.5
E_{t-1}	0.03	**0.06**	1.5
E_{t-2}	0.05		4.2
O_{t-1}	-0.11		-2.7
EC_{t-1}	-0.48		-2.5
Adj. R^2 = 0.88		DW = 1.82	
F_{ar5} = 0.19		F_{het} = 0.67	
JB = 0.53			

EC is the error correction term obtained from the estimated long-run relationship. The last three tests are the diagnostic tests of the residuals from the estimation: F_{ar3} is F-stats of up to 3rd order residual serial correlation, F_{het} tests autoregressive conditional hetroscedasticity and JB is the Jarque-Bera test for normality of the residuals.

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Language Planning in Higher Education
Issues of Access and Equity

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Abstract

Pakistan as a multilingual country faces numerous problems in language planning in higher education. As educational standards in higher education decline, there are concerns about student difficulties in English and lack of required materials in Urdu, The research reported here is a nation wide survey of 2136 students, 121 Subject and English teachers of public and private sector colleges and universities from all the capital cities of Pakistan, as well as 63 parents who responded to the questionnaire. The survey examines the learner's background, attitudes to languages and motivational orientation, availability and quality of materials in different mediums, learner difficulties in English, provision of English support programmes, and language outcomes. Results point to the significant differences between private sector and public sector students in terms of socio-economic status, and other variables. The study recommends that public sector students be provided more state support by adopting an 'English for all policy', and strengthening the English programmes through a revision of courses, development of materials, and training of teachers so as to meet the students' learning and target needs.

Introduction

A brief analysis of the present language situation and a historical perspective indicates that the language policy issue in higher education in Pakistan has not been adequately addressed by the various education commissions set up by different governments to look into the problems being faced by students and teachers in higher education. In all Educational Policies and Reports of Education Commissions and Committees set up in this regard (1957-1998), the official policy with regard to language has been to maintain English as the medium of instruction in Higher Education after the country's independence in 1947. This policy is seen as an interim arrangement. The long- term language policy as laid down in all the Reports of Educational Policies as well as Education Commissions and Committees has been throughout to introduce Urdu as the official medium of instruction in Higher

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Education once teaching materials have been developed in the national language. Although Urdu was declared the official medium of instruction for schooling (class 1-12) in the public sector soon after the country's independence, the period assigned to the transfer from English medium to Urdu medium in higher education has varied in various reports, that is fifteen years in the 1950s (Sharif Commission, 1959) and five to seven years in the 1970s (University Grants Commission, 1982). Despite endorsement of this policy by every regime, it has been generally observed by students, teachers and parents as well as other stakeholders that the problems regarding learners' language difficulties in the English medium or developing sufficient and quality materials in Urdu for higher education have not been given adequate attention. The Report of the Education Sector Reforms (2001) and the Task Force on Higher Education (2002) set up by General Musharraf have also not addressed the issue of language policy in higher education.

The question that the present language policy poses is whether Pakistani students involved in higher education receive sufficient linguistic support in Urdu, English, or their mother tongue. This question is a complex one and has to be addressed by not only examining the present language situation in higher education in Pakistan but also against the backdrop of the dilemma that faces Pakistan like other former British colonies, which is whether to promote its national language (Urdu) for ideological purposes, or English in keeping with the demands of the emerging global market where English is seen as a tool of progress and success. The significance of the learner's mother tongue in imparting education especially in the initial years of schooling is also an important factor that cannot be put aside. The choice of a language to be the medium of instruction or a language to be studied is a complex matter. It involves various factors including the aims of the language planners, language needs of learners, parental and teachers' attitudes. In addition, there are practical factors involved, like available economic resources to implement the policy in terms of training of teachers, as well as development of materials in the language so selected. One major problem is the lack of research in the areas of language planning in education in Pakistan. Although there have been a few sociolinguistic surveys involving schooling in Pakistan (Mansoor, 1993; Rahman, 2002), these have been limited to a few institutions or a particular region.

Higher Education in Pakistan

Pakistan with a geographical area of 79.61 million hectares (PST 1999) and a population of 137:5 million (*Economic Survey* 1999-2000) is one of the largest Muslim countries in the world. Almost one third (32.6%) of the population lives below the poverty line (*Economic Survey*, 1999-2000). The

situation is further compounded by the low literacy rate of the country and poor educational standards. The literacy rate in 1999-2000 was estimated at 47.1 percent with 59 % males and 35.4 % females (*Economic Survey* 1999-2000). In higher education (which includes undergraduate and postgraduate studies) the participation rate is a mere 3% as compared to the 50% participation rate in the advanced countries (PST; 1999). The present government of General Musharraf is also attaching a great deal of importance to higher education as seen in the fact that higher education has been allocated 24% of all funds dedicated to the education sector in the ten- year period (Planning Commission *Ten Year Perspective Development Plan,* 2001-2011).

According to the *Economic Survey* (1999-2000), there are over 789 Science and Arts colleges with an enrollment of 796,000 students working throughout the country. In university education, (here are 27 universities in the public and 16 in the private sector (the numbers have increased in 2002). During the year 1996-1997, the total enrollment in the public universities was 101,308, which is 20% of the total enrollments in higher education. Enrollment in the private universities was 4,910, which was 4.62% of the total university enrollment. A crisis in the educational system of Pakistan is demonstrated by the high rate of failure of students in examinations in the intermediate, graduate and postgraduate levels. Hoodbhoy (1998) laments the fast expansion of universities without paying enough attention to academic quality, high standards, modern methods of teaching and learning, as well as academic freedom or academic ethics.

English Language Teaching

According to Abbas (1998) despite the massive inputs into the teaching of English, the national results are abysmally poor. At the college level, the pass percentage is barely 18-20% and since English is a compulsory subject, failure in English means failure in the entire University examination. At the secondary level, the ratios are almost the same. Abbass (1998) attributes the failure in English examinations mainly to flawed pedagogy and material design and concludes that perhaps the teaching of English is not necessary for all levels of the population. In academic institutions in Pakistan, English is a compulsory language from class VI to BA in all schools, the exception being Sindh and Punjab, where English is compulsory from class 1. This policy is already being implemented and recently the N.W.F.P. government has also announced the introduction of English as a compulsory subject from class 1. At present an emerging graduate has studied English for at least nine years. The importance of English is apparent from the fact that English is a compulsory subject at the graduate level and Urdu is not. According to Malik (1996:12) the weak proficiency of emerging graduates has

led to a lowering of standards of performance at the graduate and postgraduate and equivalent levels where English is the official medium of instruction and assessment. Malik (1996:15) also points out that the "high rate of failure affects students in two ways: it destroys their opportunities for white collared jobs in the country and also destroys their morale".

The Status and Role of English

The spread of English language in the twentieth century has been phenomenal. The number of speakers in English has increased ten fold since 1900 and a rough estimate tells us that the number of speakers is between 700 million to one billion (Pennycook, 1994). The rise of English has been a matter of much debate in sociolinguistic circles. It is estimated that within a decade or so, the number of people who speak English as a Second Language will exceed the number of native speakers (Graddol, 1997). The full implications of this spread of English in the field of education is best understood in terms of second or foreign language instruction. Research into English in primary and secondary education and the use of English as a medium of instruction as well as the teaching of English as an additional language shows that there is little doubt that at present there is a great demand for English language instruction, and this demand will continue to grow in the future (UNESCO *Statistical Year Book,* 1974). Graddol (1997) also suggests that the highest number of courses offered in second or foreign languages around the world are in English. In many parts of the world, English is regarded as the language of power, success, and prestige. In many countries English has become implicated in social and economic mechanisms that structure inequality, linking poverty not only with region, class, gender and ethnicity but also with access to the lingua franca of the global elite - English. In post-colonial countries like India and Pakistan, English medium schools provide one of the mechanisms of distributing social and economic power. Parents and children in these countries often see English-medium education as a means to economic success. It is also argued that where teachers themselves are not fully proficient in the English language and are not aware of the full implications of teaching English as a second language, there is a danger of students being condemned to a second rate education.

Language Attitudes and Motivation

Research on attitudes and motivation (Ryan in Gardner, 1979) has mainly focused on two important areas that include; 1) the effects of language attitudes to second language acquisition; and 2) the effects of second language acquisition on attitudes. Most of the research makes a contrast between integrative and instrumental orientations. An integrative orientation refers to an interest in learning a second language in order to facilitate interaction with

the other language community. An instrumental orientation, on the other hand, focuses on the utilitarian aspects of learning a language like a means to "higher education" or "a good job", Paulston in Spolsky (1998) points out that the major linguistic consequence of ethnic groups in prolonged contact within one nation is language shift of the subordinate group to the language of the dominant group. Though there is little research data to identify the kinds of incentives, the two major ones are: 1) economic advantages, and 2) social prestige. In Brudner's terms (1972), jobs select language-learning strategies that whenever there are jobs available that demand knowledge of a certain language, people will learn it.

English Language Programmes

An issue of central concern for educationists these days is that if English language learning is so much in demand presently then what would be the best courses incorporating the most updated approaches and methods to teach English, keeping in view the underlying socio-political aspects. What is required is also an understanding of the relationship between language proficiency and academic achievement as well as what should be the exit criteria of ESL/ EFL programmes. A key problem in the effective teaching of English in schools internationally is that of teacher supply. As Graddol (1997) points out, an important educational trend world- wide is the teaching of a growing number of courses in universities through the medium of English. There is a growing need to teach some subjects especially Science in English rather than the national language so as to access updated text- books and research articles. In addition, the influx of foreign students to the first world for higher education through the system of "distance education" courses from "mega universities" such as the British Open University and "virtual universities" are leading to a rapid rise in teaching courses in the English medium.

The Study

The study was designed so that it would focus on some of the key areas in language planning and language education. Both approaches namely quantitative and qualitative were considered to examine which would be more suitable for the research study and it was seen that it was more helpful to use a 'combined approach' suggested by Robson (1993), since the main purpose was not only to find out how many numbers and percentages of respondents held the same or different attitudes, values, opinions and beliefs, but also the reasons for this. In this study Language Education in Pakistan was the CASE and the methods of data collection were: 1) questionnaire survey, 2) interviews, and 3) documentary analysis. The present research was designed to be a "real world enquiry" mainly concerned with contributing to both language policy

and practice in higher education in Pakistan. Our concern in this article is with the first source. The 'sociolinguistic survey', suggested by Kaplan and Baldauf (1997:110) was seen as a good model to adopt in this regard.

The Questionnaire

Four types of data collecting instruments were developed for conducting the survey. These included: a) three structured survey questionnaires divided on the basis of the following populations: students, parents and teachers, b) one English language test to gauge the English language proficiency of students and teachers. The research questions in our study revolved around collecting information on: the background of learners (demographic and language), facilities in English, attitudes to languages in education and motivational orientation, parental support for learning English, availability and quality of materials in different mediums, learner's language difficulties in English, English language support programmes, English language competency of subject and English teachers, and language outcomes. The views, attitudes, beliefs and opinions of students, parents and teachers were elicited through a pre-coded student questionnaire and a teacher questionnaire that were filled in the educational institutions in the presence of the researcher. A separate questionnaire was also designed for the parents of the students, and this was sent through the students with a letter explaining the purpose of the questionnaire and requesting them to cooperate in this regard. All questionnaires were bilingual (Urdu and English) except the section pertaining to the English assessments.

The purpose to include a short language proficiency assessment was to supplement the quantitative data obtained from the questionnaires. The results helped the researcher to establish a correlation between the respondents' academic background and the developed language skills as well as their language needs. The test comprised two components: Reading Comprehension and Vocabulary and Structure. The section on reading comprehension was taken from Cambridge Practice Tests for IELTS (1996), compiled by Jakeman and McDowell, while the second part on vocabulary and structure was adapted from Michigan English Test of English Language Proficiency (MTELP: 1985).

Sample Size

The sample size of the testing of hypothesis for the prevalence of students regarding their opinion about the role of English in higher education in our population was calculated by taking a proportion of 50% with level of significance α of 5%, a power of 80%, the bound on error (the absolute difference between actual and hypothetical prevalence) of 4% and design effect

of 2 (because of two stage cluster sampling). The minimum sample size of 2,450 students was required for this study. The sample of the colleges and universities from Private and Public (Government) as well as General and Professional was taken from the list of degree colleges and universities as listed by the Handbook Colleges of Pakistan University Grants Commission (1999). A decision was taken by the researcher to select only the colleges and universities from the capital cities of Pakistan and the federal capital Islamabad.

In this study, each degree college or university was considered as a cluster. At the first stage, 30 clusters (Professional & General degree colleges) were selected at random from the list of degree colleges from capital cities of Pakistan proportionate to the number of degree colleges in each city. Then at the second stage, around 80 students were chosen at random from the total number of students who were to be present on that day in one cluster (Degree College). The rest of the students were chosen from five randomly selected universities of Pakistan (2 General i.e. 1 Private and I Public, as well as 1 Professional). From each cluster a group of 5-10 teachers (Subject Teachers and English) was also taken.

The Staff

Since the data was to be collected on a large scale (nation wide study) a team comprising two faculty who assisted with the data collection, a Statistical Advisor of the University, as well as an editor and two data entry operators was put together. Since all the team members were already trained and had been involved in previous research projects, no formal training was required. The research project had the support of the University Seed Money Grant Award, and hence all expenses related to the study were borne by the award.

Results

The questionnaire responses were coded and entered into the Statistical Package for the Social Sciences (SPSS, Version 6.1.3) and analysed by the Statistical Advisor of the University and the author of this article. The results of the study were looked at various divisions such as socio-economic status, gender and public and private sectors categories. The analysis of all quantitative data obtained from the questionnaires was done at a descriptive and inferential level (see Kinnear and Gray, 1999).

Background Characteristics

The sample comprising 2,136 students was predominantly from Punjab (Lahore and Taxila) and Sindh (Karachi and Hyderabad), Balochistan

(Quetta), followed by the Federal Capital (Islamabad), and the N.W.F.P (Peshawar). The study was able to collect data from 121 subject and English teachers from all provinces except Balochistan. Only 63 parent's questionnaires were received from Punjab and Sindh. The profile of the students by different characteristics of institute shows that the majority of them were from colleges (84%) and a smaller number from universities (16%). Also, around two- thirds (66 %) of all students in the study were from the public sector (colleges and universities). The majority of the students reported Urdu as their mother tongue (42%), followed by Punjabi (30%), Pushto (14%), Balochi (5%), Sindhi (4%) and others (5%).   The results of the study show that the students involved in higher education in Pakistan belong to various socio-economic backgrounds (income groups, divided into quintiles). Students studying in the private sector (Mean income = Rs. 30,361; standard deviation=Rs. 45,736) have significantly (p-value=0.000; independent samples t-test; t = 7.95; df = 573) higher monthly household income as compared to students studying in the public sector (Mean income = Rs. 13,718; standard deviation = Rs. 16,701). It is worth noting that one fifth (20%) of all students and one fourth (25%) of public sector students reported a household monthly income of Rs 5,500 ($ 90) and less (see Table 1).

Table 1: Percentage Distribution of Students Household Monthly Income (in Pak. Rs.) by Public and Private Institutions

Monthly Income (in Rs.)	Public %	Private %	Both %
Below 5,500	25.2	8.7	19.8
5,500 – 9,999	20.7	11.6	17.8
10,000 – 14,999	20.4	19.5	20.1
15,000 – 24,999	20.5	22.2	21.0
25,000 & above	13.3	38.0	21.3
Total students*	1,056	508	1,564

*After excluding 208 private and 364 public students who did not specify household income.

Facilities for English

As far as the facilities for English in the two sectors are concerned, the results do not depict a good picture at any stage of schooling both in the public & private sectors (see Table 2). The students from the public sector report insufficient facilities at the primary (10%), secondary (19%), intermediate (26%), and graduate levels (36%). The significant difference (confidence interval for the difference in proportions used; p-value was

obtained using chisquare with df =1) between public and private sectors in the facilities for English at different stages proves the general perception of the public that the facilities for English are much better in the private schools. Overall, students involved with postgraduate studies from both the public and private sectors report that there are hardly any facilities for English (2%-9%) available to them.

Table 2: Percentage Distribution of Students Reported Facilities (a lot) for English by Public & Private Institutions

Stages of Schooling	Public %	Private %	95% C.I. for the difference in percentage
Primary	10.2	23.7	(-17.1, - 9.9)**
Middle	12.8	28.5	(-19.6, -11.8)**
Secondary	19.3	32.2	(-17.0, - 8.8)**
Intermediate	25.7	35.6	(-14.1, - 5.7)**
Graduate	35.8	42.0	(-10.6, - 1.8)**
Post graduate	6.8	11.1	(- 7.0, - 1.6)**
Professional	2.0	9.0	(- 9.3, - 4.7)**
Total Students	1,420	716	

* Significant at p-value<0.05; ** Significant at p-value<0.0

Medium of Instruction at Graduate Level

As seen in Figure 1 the result shows a significant difference between public and private institutions regarding their medium of instruction (χ^2 = 187.341; df = 2 & p-value = 0.000) as reported by students. The majority of private institution students reported English medium (65%) and Urdu Medium (15%), while the majority of public institution students reported Urdu medium (40%) and English medium (40%) as their medium of instruction. About one-fifth of private as well as public institute students (20%) reported both (English and Urdu combined) as their medium of instruction; a significant difference was found between public and private institutions regarding their medium of taking examinations (χ^2 = 59.96; df = 2 & p-value = 0.000; after excluding those who did not specify) as reported by students. The majority of private sector students took their examinations in English (68%), whereas the majority of public sector students did so in Urdu medium (50%) or both Urdu and English (35%).

**Figure 1: Medium of instruction in Public & Private
Institutions Reported by Students**
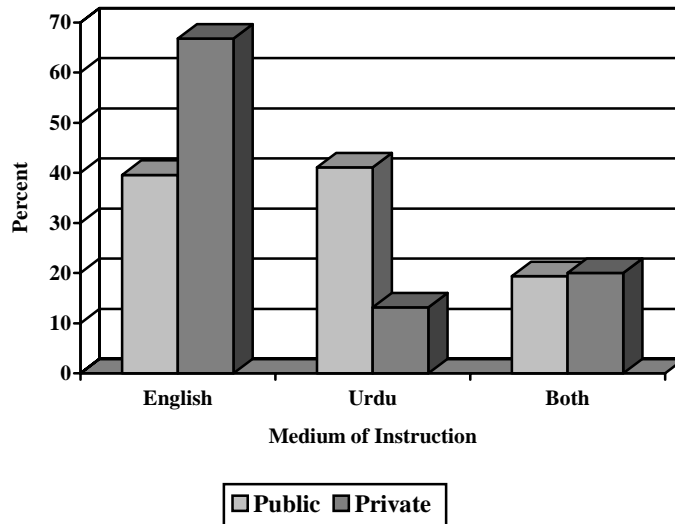
Attitudes to Languages in Education and Motivational Orientation

As seen in Table 3, an overwhelming majority of students male or female from all provinces (both public and private sectors), teachers, and parents show highly positive attitudes to English as seen in their preference for English as a medium of instruction in higher education (88%-97%) that is much higher than preference for Urdu (40%-71%), regional languages (6%-17%), or Arabic (0%-8%). However, more students from public institutions prefer Urdu as compared to private students (χ^2 = 9.69; df=1; p-value = 0.0018), while more students from private institutions prefer English as compared to public students (χ^2 = 11.87; df=1; p-value=0.0006). As far as parents were concerned more parents whose children were studying in public institutions preferred Urdu as the medium of instruction when compared with parents whose children were studying in private institutions (χ^2 = 8.23; df=1; p-value = 0.004). The majority of students, teachers and parents show a preference for English medium education at all levels. At graduate levels, for both Arts and Science, the preference by all respondents ranges from 72%-94% in both public and private sectors. However, the preference for regional language though low for all levels is slightly higher at primary levels (6%-23%). The preference for Urdu as medium of instruction follows the preference for English and keeps decreasing from primary levels (31%-42%) to graduate levels (9%-28%). The main reasons for preference of English as the medium of education at various levels by students, teachers and parents are mainly instrumental, as studying in English is seen as useful for students in

studying abroad (78%) and getting good jobs (63%). The reasons given by all subjects for studying in Urdu are mainly integrative. Students see Urdu as the main link language (67%) and also for its role in promoting the national language (67%). The main reasons for studying in the Regional language are related to learning and it is felt by the students that study in the regional language is helpful in the first few years of schooling (60%), and also because students can learn better in their mother tongue (58%). The majority of all students, teachers and parents (59%-97%) also show a preference to study English as a compulsory subject at all levels followed by Urdu (8%-50%). The preference for Urdu as a compulsory subject becomes lower at higher levels. Very few subjects show a preference for study of the Regional language as a compulsory subject even at primary levels (0%-22%).

Table 3: Percentage Distribution of Students, Teachers and Parents by Medium of Instruction Recommended at any Level of Education by Type of Institution

Recommended Language	Public	Private	Both
	%	%	%
Students			
Regional Language	12.7	11.3	12.3
Urdu	51.1	44.0	48.7
English	89.3	93.9	90.8
Arabic	6.1	4.3	5.5
Total Students	**1420**	**716**	**2106**
Teachers			
Regional Language	20.0	12.2	17.4
Urdu	40.0	56.1	41.3
English	88.8	87.8	88.4
Arabic	6.3	0.0	4.1
Total Teachers	**79**	**42**	**121**
Parents			
Regional Language	6.3	19.4	12.7
Urdu	87.5	54.8	71.4
English	100.0	93.5	96.8
Arabic	12.5	3.2	7.9
Total Parents	**32**	**31**	**63**

Students from all institutions gave more weight to instrumental reasons compared to integrative reasons for learning English. Students from private institutions gave more weight to different instrumental as well as integrative

reasons compared to public students except acquiring new ideas and broadening one's outlook, and acquaintance with people in touch with latest trends in the West. In instrumental reasons, coping with college / university classes, traveling abroad, access to information technology, enabling access to international books and journals and as the working language of a future career were found to be significant between public and private institutions. In integrative reasons living and behaving like English-speaking Pakistanis, becoming more modern and improving social status were found to be significant (see Table 4).

Table 4: Distribution of Students by Reasons for Learning English and Type of Institution

Reasons for learning English	Public %	Private %	95% C.I. for the difference in Percentages
Instrumental Reasons:			
Getting good job	79.1	82.6	(-7.0, -0.04)
Coping with college/university classes	74.7	79.3	(-8.3, -0.9)*
Traveling abroad	74.9	82.3	(-10.9,-3.9)**
Access to Information technology	83.1	89.8	(-9.6,-3.8)**
Getting access to international books and journals	77.8	87.1	(-12.5,-6.1)**
It is the working language of future career	74.4	86.6	(-15.5,-8.9)**
Integrated Reasons:			
Living and behaving like English-speaking Pakistanis	42.0	35.8	(1.9, 10.5)**
Becoming more modern	58.0	52.0	(1.5, 10.5)**
Acquiring new ideas & broadening one's outlook	75.4	78.1	(-6.5,1.1)
Becoming friendly with English speaking Pakistanis	59.4	55.6	(-0.7, 8.3)
Acquaintance with people in touch with latest trends in the West	56.6	60.6	(-8.4, 0.4)
To improve my social status	66.2	59.9	(1.9, 10.7)**
Total Students	**1,420**	**716**	

* Significant at $p < 0.05$ and ** Significant at $p < 0.01$ **Language**

Language Needs of Learners

As seen in Table 5 an overwhelming majority of all students, male or female display a far higher need for English than any other language for the purpose of higher education (79%), employment (77%), and information technology (82%). This trend was similar when looking at private and public institutions and by gender as well. Urdu was reported as the second language

needed by students but was far behind English for the purpose of higher education (39%), employment (33%), and information technology (22%). The parents reported a similar trend for English, Urdu and other languages for the purpose of higher education, employment, and information technology.

Table 5: Percentage Distribution of Students and Parents by Language Needs of Students for Higher Education, Employment and Information Technology by Type of Institution

Issues eliciting views on language needs of students	Public %	Private %	Both %
Student			
Higher Education:			
Mother tongue	29.5	20.6	26.5
Regional language	9.9	7.7	9.2
Urdu	39.3	38.8	39.1
English	74.6	86.5	78.6
Employment:			
Mother tongue	24.4	15.2	21.3
Regional language	8.0	8.8	8.3
Urdu	33.2	33.5	33.3
English	72.9	84.4	76.7
Information Technology:			
Mother tongue	20.6	11.5	17.5
Regional language	6.0	5.0	5.7
Urdu	24.5	17.3	22.1
English	78.5	88.3	81.8
Total Students	**1,420**	**716**	**2,136**
Parents			
Higher Education:			
Mother tongue	21.9	25.8	23.8
Regional language	3.1	3.2	3.2
Urdu	56.3	35.5	46.0
English	87.5	90.3	88.9
Employment:			
Mother tongue	15.6	29.0	22.2
Regional language	0.0	16.1	7.9
Urdu	56.3	25.8	41.3
English	81.3	74.2	77.8
Information Technology:			
Mother tongue	9.4	25.8	17.5
Regional language	0.0	3.2	1.6
Urdu	21.9	9.7	15.9
English	87.5	93.5	90.5
Total Parents	**32**	**31**	**63**

Parental Support for Learning English

As seen in Table 6, the majority of the parents (77%-87%) thought that they try to help children with their English, and no significant difference was found between private or public institution of the students (χ^2=0.060; df=1, p-value = 0.807). The majority of the parents thought that students should devote more time to their English studies, and no significant difference was found between private or public institution of the students (χ^2=0.463; df=1, p-value = 0.496). Parents also stressed the importance that English will have for students when they leave college/university, and no significant difference was found between private or public institution of the students (χ^2=0.901; df=1, p-value = 0.343). Similarly, the majority of the parents encouraged their children to seek help from their English teacher, and no significant difference was found between private or public institution of the students (Using χ^2; p-value = 1.00).

In the students' view, the majority of the parents (71%-86%) thought that the student should devote more time to his/her English studies, which is significantly higher among students studying in public institutions (χ^2=43.613; df=1, p-value = 0.000). The majority of the students reported that their parents' have stressed the importance that English will have for the student when he/she leaves college/university, which is significantly higher among students studying in public institutions (χ^2=6.144; df=1, p-value = 0.013). Similarly, the majority of the students reported that their parents encouraged them to seek help from their English teacher, which is significantly higher among students studying in public institutions (χ^2=43.709; df=1, p-value = 0.000).

Table 6: Percentage Distribution of Students and Parents with their Agreement on Parental Support by Gender

Agreement on	Male %	Female %	Both %
Students			
Parents thinking that I should devote more time to my English studies	79.2	84.7	82.0
Parents have stressed the importance that English will have for me when I leave college/University	78.3	83.0	80.7
Parents encourage me to seek help from my English teacher	75.7	83.1	79.5
Total Students	**1,030**	**1,088**	**2,118**
Parents			
Try to help students with their English	75.6	85.7	78.0
Think that students should devote more time to their English studies	93.3	100.0	95.1
Have stressed the importance that English will have for students when they leave college/university	87.0	100.0	90.3
Encourage students to seek help from their English teacher	93.3	100.0	95.1
Total Parents	**47**	**16**	**63**

Availability and Quality of Materials in Different Mediums

As seen in Table 7, the results of the study show that the students report that the required materials for their courses in higher education is not fully available in English, Urdu, or Regional languages. The materials mostly available to them are in English and Urdu (χ^2 = 42.7; df = 2; p-value = 0.000). This holds true even in the private sector (χ^2 = 77.5; df = 2; p-value = 0.000) as well as for the public sector ((χ^2 = 33.9; df = 2; p-value = 0.000). The availability of materials in English as reported by students is much higher (58%) than materials in Urdu (31%) in both public and private sector institutions. Similar results were obtained from teachers in which they also report the same that the required materials for their courses in higher education are mostly available to them in English and Urdu (χ^2= 60.4; df=2; p-value=0.000). This holds true even in the private sector ((χ^2 = 97.2; df=2; p-value=0.000) as well

as for public sector ((χ^2=47.9; df=2; p-value=0.000). Again, the availability of materials in English (66%) as reported by teachers is twice as much than materials in Urdu (25%) in both public and private sector institutions.

Table 7: Percentage Distribution of Students & Teachers Reported Language in which Required Material is Mostly Available by Type of Institution

Type of Institution	Required material mostly available in		
	English %	**Urdu %**	**Regional Language %**
Student			
Private	72.3	20.5	3.8
Public	50.6	36.0	6.3
Both	57.9	30.8	5.5
Teacher			
Private	80.5	17.1	5.0
Public	59.0	29.5	5.1
Both	66.4	25.2	5.0

Table 8: Percentage Distribution of Students & Teachers Reported Language in which High Quality Required Material is Available by Type of Institution

Type of Institution	High/Excellent quality required material available in		
	English %	**Urdu %**	**Regional Language %**
Student			
Private	57.9	25.7	6.9
Public	46.2	41.7	12.4
Both	50.1	36.3	10.6
Teacher			
Private	48.8	19.5	2.4
Public	42.9	19.3	6.4
Both	44.9	19.3	5.0

The results of the study as seen in Table 6 show that students are not satisfied with the quality of the materials available to them for higher education in terms of their relevance, up datedness and appropriateness in either English (50%) or Urdu (36%) or regional languages (11%). This holds true for the public as well as private sector, although most of the quality material available to them is in English. Similar results were obtained from teachers as seen in Table 7, in which they also report that the quality of required materials mostly available to them in English (45%) and Urdu (19%) is not very high for their

courses in higher education (χ^2 = 35.8; df = 2; p-value = 0.000). This holds true even in the private sector ((χ^2 = 47.5; df = 2; p-value = 0.000) as well as for the public sector ((χ^2 = 31.1; df = 2; p-value = 0.000).

Learners' Language Difficulties

Overall the results regarding student's language difficulties while coping with their higher studies in English show that students from the public sectors face more difficulties than their counterparts from the private sector as reported by students and teachers. Similarly, female students face more difficulties than male students as reported by students and teachers.

A significant difference was observed between public (15%) and private students (9%) when asked whether they faced difficulty while listening to teacher's lectures and other students talking in English (χ^2 = 19.06; df=1; p-value<0.001), between public (17%) and private students (10%) in reading comprehension of texts / materials in English (χ^2 = 20.64; df=1; p-value<0.001), between public (25%) and private students (8%) when speaking to teachers and making presentations in English (χ^2 = 13.8; df=1; p-value<0.001), between public (20%) and private students (13%) while writing notes/assignments in English (χ^2 = 16.4; df=1; p-value<0.001), between public (23%) and private students (12%) while taking tests/examinations in English (χ^2 = 31.4; df=1; p-value<0.001). Similarly, teachers responded for the same questions regarding students and found the following significant results in students facing difficulty while speaking to teachers and making presentations in English (χ^2=4.77; df=1; p-value=0.0289), writing notes/ assignments in English (χ^2=9.43; df=1; p-value=0.00213), taking tests/ examinations in English (χ^2=10.88; df=1; p-value<0.001, and getting anxious when taking tests / exams in English (χ^2 = 4.92; df=1; p-value=0.02654).

English Language Support Programme

Despite the fact that English is a compulsory subject of study in the graduate classes, a fair percentage of public sector (60%) and private sector students (40%) and public sector (48%) and private sector students (30%) teachers responded that English courses are not offered at institutions (See Fig. 2). The results of our study regarding the courses of English offered at the institution show a significant difference between public and private institutions (χ^2=79.6; df =1; p-value=0.000) when responded to by students. The overall quality of English courses reported by students and teachers are also very low (see Table 9).

Table 9: Percentage Distribution of Students & Teachers by Quality of English Language Courses by Type of Institution

Quality of English language Course	Private %	Public %	95% C.I. for the difference in percentage
		Students	
High/Excellent quality in terms of:			
Courses/Syllabus	45.9	30.5	(11.2, 19.6)**
Texts/Materials	45.6	29.6	(11.8, 20.2)**
Teaching Methods	46.6	37.7	(4.5, 13.3)**
Test/Examinations	59.3	32.5	(22.4, 31.2)**
Overall Quality	48.3	31.7	(12.3, 20.9)**
Success of the courses in preparing for:	17.5	18.5	(-4.5, 2.5)
Higher Studies in English	20.0	16.7	(-0.1, 6.7)
Communicating in work place			
Agreement to courses be made available if are not offered	82.9	89.5	(-9.5, -3.7)**
Type:			
General English	13.4	11.6	(-1.1, 4.7)
English for Specific Purposes	12.3	11.9	(-2.5, 3.3)
Both	67.4	72.1	(-8.8, -0.6)**
Agreement to:			
English Courses should emphasise the communicative use	56.1	51.8	(-0.2, 8.8)
English Teachers should be trained in the latest methods	76.6	76.8	(-4.0, 3.6)
Literature should be a component of English course	41.2	42.8	(-6.0, 2.8)
Total Students	**716**	**1420**	
		Teachers	
High/Excellent quality in terms of:			
Courses/Syllabus	34.1	34.2	(-19.0, 18.8)
Texts/Materials	29.3	34.6	(-24.1, 13.5)
Teaching Methods	36.6	28.2	(-9.8, 26.6)
Test/Examinations	29.3	30.8	(-19.8, 16.8)
Overall Quality	24.4	25.0	(-17.8, 16.6)
Success of the courses in preparing for:			
Higher Studies in English	29.3	29.1	(-17.9, 18.3)
Communicating in work place	22.0	25.4	(-20.6, 13.8)

Agreement to courses be made available if are not offered	70.0	77.2	(-24.3, 9.9)
Type:			
General English	14.6	16.5	(-16.5, 12.7)
English for Specific Purposes	2.4	7.6	(-15.0, 4.6)
Both	63.4	62.0	(-17.9, 20.7)
Agreement to:			
English Courses should emphasize the communicative use	68.3	72.2	(-21.9, 14.1)
English Teachers should be trained in the latest methods	70.7	81.0	(-26.6, 6.0)
Literature should be a component of English course	46.3	48.7	(-22.3, 17.5)
Total Teachers	**35**	**79**	

**Significant at p-value<0.01

The responses revealed a significant difference between private (46%) and public institutions (30%) students for high/excellent quality in terms of course / syllabus of English courses (χ^2=49.14; df = 1; p-value = 0.000), a significant difference between private (46%) and public institutions (30%) students for texts/materials (χ^2 = 53.58; df = 1; p-value = 0.000), a significant difference between private (47%) and public institutions (38%) students for teaching methods (χ^2 = 15.6; df = 1; p-value = 0.000), a significant difference between private (59%) and public institutions (32%) students for test/examinations (χ^2 = 140.9; df = 1; p-value = 0.000), overall quality (χ^2 = 56.1; df = 1; p-value = 0.000) and agreement to courses be made available if not offered (χ^2 = 18.7; df = 1; p-value = 0.000).

English Language Competence of Subject and English Teachers

As reported by students from public as well as private institutions, although the competency of subject teachers in English speaking and writing is not very high, a significant difference is found in public and private sectors with high proficiency in the private sector. For example, the students report subject teachers' spoken proficiency as (χ^2 = 4.58; df = 1; p-value = 0.032) and written proficiency as (χ^2 = 5.63; df = 1; p-value = 0.018). It is worth noting that the spoken competency of around one third of all English teachers in both public (43%) and private institutions (38%) as well as written competency of public (37%) and private (32%) teachers was not seen as high as reported by students.

Language Outcomes (Test Scores)

A vast majority of students and teachers attempted the English test. A significant difference between students from public and private institutions was observed (χ^2=23.65; df=1; p-value<0.001). As seen in Table 10, although the test scores for the students in public and private institutions are not good, the students from private institutions have significantly higher scores as compared to public institutions (t-value=12.99; df=1280; C.I. for the mean difference=11.5; 95%; C.I. for the mean difference=9.7, 13.20; p-value=0.000). The test scores among teachers in public (Mean=59.9; Standard Error=1.81) and private (Mean=62.7; Standard Error=2.54) institutions are not significantly different (t-value=0.913; df=106; Mean difference=2.82; 95% C.I; for the mean difference=-3.3, 8.9; p-value=0.363). In the overall proficiency scores of students and teachers as measured by the English test, results show that teachers scored better in structure of the language (70%) as compared to application of the language. Overall the teachers' proficiency scores were only 61%. The students' performances were low in both structure and application of the English language with an overall score of 47%.

Table 10: Percentage Distribution of Students and their English Test Scores by Public and Private Institutions

Scores (%)	Public %	Private %	Both%
<33	32.4	14.9	26.2
33-40	10.0	6.6	8.8
40-50	22.0	18.3	20.7
50-60	18.6	19.2	18.8
60-70	11.9	18.7	14.3
70-80	4.7	17.1	9.1
80 & above	0.4	5.2	2.1
Mean Score (Standard Error)	43.0 (0.49)	54.5 (0.73)	47.0 (0.43)
Total Students	1,250	678	1,928

Issues of Access and Equity

Results point to the significant differences between private sector and public sector students in terms of socio-economic status, facilities for English, medium of instruction, language difficulties in English, availability of English support programmes, English language competence of subject and English teachers, and the resultant language outcomes. The results of

this study reveal that there are two streams entering our higher education institutions (colleges and universities). The language policy in education in schools is that of a dual medium policy where the students from the government sector study in Urdu medium with English as a subject from class 6 (the new policy proposes English from class 1), and the students from the private sector who study in English medium with Urdu as a subject from class 1. As seen in our study, despite the official policy of English medium in higher education, actual classroom practice shows that the two mediums (English and Urdu) continue to be used depending on the types of institutions (public sector and private sector).

The results of the questionnaires show that the students from the public sector face more problems than the private sector students due to various reasons. Foremost is the fact that a large number of the students (49%) from the public sector belong to low socio-economic status with a total household income of Rs 9,900 and less and a quarter (25%) with Rs 5,500 and less. The majority of these students report an Urdu medium school background (52%) and that they have received very few facilities to learn English in their schools than their counterparts from private sector institutions (26%). Also, despite the fact that they show a strong desire to study in English medium (90%), they continue to study in either Urdu medium or a 'mix' of English and Urdu medium in higher education. In addition, less than half of these LEP (Limited English Proficiency) students report that they are provided with adequate English language programmes (39%). Despite the fact that English is a compulsory subject at graduate levels, many of the students report that there are no English language support programmes available to them. The present English courses have very heavy literature content and so become an additional subject of study for the students and a burden, rather than provide language support to the students, or help them become proficient in English. The students and teachers from the public sector (46%) also show more dissatisfaction with the quality of materials available to them in English. In addition, they have limited access to materials in English (51%). As reported in the questionnaires, some of these LEP students from the public sector institutions who have studied in Urdu medium face a great deal of difficulty while speaking, following lectures in English, reading with understanding, and also while writing notes and taking examinations (23%) when they join the private sector institutions, or the professional universities in the public sector that are English medium. As a result many of them resort to guide books or poor translations in Urdu, and 'rote learn' their English texts, resulting in poor language outcomes as seen in the low proficiency scores in the English test and performance in their examinations.

The results of the study show that the student's performance in the English test keeps getting higher as the household income also rises, and that there may be a link between household income per month and language outcomes. The results also inform us that in all the groups of students with various household income groups, the students from the private sector institutions perform better than students from the public sector institutions who come from a lower socio-economic background. It appears therefore that the public sector students are 'disadvantaged' as compared to the private sector students, and need additional support from the state to cope adequately with their higher studies.

Discussion

The study found that Pakistanis consider English important for national development. Pakistan has lagged behind other South Asian countries in the availability and quality of education, particularly higher education. Pakistani students do not see the study of English as detrimental to their culture but rather as necessary for Pakistan to become a modern and progressive state. The students want to study English for instrumental reasons and English is seen as synonymous with progress and prosperity. On the other hand Urdu is seen as important for integrative reasons such as national unity and identity, as well as a link language. This study points out that English allows access to the Western, liberal-humanist and cosmopolitan world- view, and resists the spread of Islamic fundamentalism in Pakistan (Rahman, 2002). Pakistani students see English as discussed earlier as a gatekeeper of the domains of "power and control" (Tollefson: 1991). The very positive attitudes of parents and their support to their children to learn English is indicative of the societal attitudes where parents want their children to be fluent in the dominant language, English so as to access higher education and white collared jobs. Many students also see English medium education as improving their social status. These are some of the most important reasons for the large majority of students wanting to study in English as a compulsory subject and as a medium of education at all levels of schooling. Pakistanis also see English as a business lingua franca and the only international language available to them that can facilitate international communication and boost trade with countries across the globe. English is part of the colonial legacy of the sub-continent and the findings of the study, particularly the qualitative data from the interviews, inform us that making use of English is seen as advantageous.

The findings of the study provide support to an earlier study by Mansoor (1993) that attitudes of Pakistani students have changed radically from ambivalence and hostility to English as a colonial rule during the first few decades after independence to an enthusiastic acceptance of English

today. The "generation gap" between the students and parents who struggled for independence from colonial rule gives the students a different perspective of English. The present study does not bear witness to the "love-hate" relationship to English that Haque (1983) refers to. The Urdu medium students and English medium students from both the public and private sector, as well as from all socio-economic strata of society desire to learn English for its utilitarian value. As far as studies in English are concerned, all the stake-holders in the study do no see English as associated with imperialism (Pennycook, 1994) but rather as an international language having a strong favourable impact on their own growth and that of the country's economy and business. The findings thus lend support to Kachru's observations (1986) that "the colonial association of English and the western values are now underemphasized. Instead, what seems to be stressed is the power of English as an instrument of individual and societal transformation". English is desired by Pakistani students because of its great instrumental value in higher education, international communication, and for economic gains and progress. Language policies, despite trying their utmost to oust English and replace it with Urdu, have failed because of the continued role of English in the official sphere as well as education and the institutional supports, especially from the media. The students want English education and feel cheated if they are deprived of it. The results of our study display that Pakistani students are opting for an instrumental / functional approach to English as opposed to the previous emphasis on cultural transmission. The desire for English is therefore not difficult to understand keeping in view that the global trends in politics, economics and culture show that English as well as regional languages will play a significant role in the twenty first century (Graddol, 1997).

Keeping in view the favourable attitudes to English of all stake holders in higher education for instrumental reasons, and to allow effective participation from the public sector where English acts as a gate-keeper and a powerful means of inclusion or exclusion from further education, employment, or social positions (Tollefson, 1991; Pattanayak, 1981; Rajah, 1990), it would be important to consider a language policy in education where all students are empowered by being fluent in English. This seems to be the best solution to a very complex and problematic issue. By removing the barrier of English, students from the public sector institutions and lower socio-economic strata would be able to access higher education and white-collared jobs. The challenge of working on the notion of "English for development" is that it would have to take into account not only the concept of sustainable development (see Pennycook, 1994) and linking it with "notions of local involvement, continuity, and ecological soundness," but also to ensure that development does not only "imply a linear path of

development that is easily conflated with notions of modernization, and westernization". This would involve that post-colonial countries such as Pakistan develop an indigenous model for English language teaching that is suitable in its own context.

The study reveals that despite favourable attitudes and the high motivational intensity of learners, their English language proficiency to cope with their higher studies, and future work requirement is far below desired levels. The intervening variable is seen as the low quality of the English courses that are outdated and inefficient. Results of the study draw attention to the need to strengthen the English language teaching programmes through a revision of courses, development of local materials, and training of teachers so as to meet the students' learning and target needs.

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Public Private Partnership in the Health Sector:
Evidence from A Developing Country

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Abstract:

In the traditional sense, governments have predominantly funded social sectors. But in the face of limited financial resources and other constraints, governments have found it easier to formulate policies rather than to implement them. Thus the private sector has begun to play an increasingly important role both in the financing and in the provision of social services. However, neither sector can be relied upon completely to deliver comprehensive results independently. It seems apparent, therefore, that a public private mix of financing and provision will be the most sensible approach to achieve economic efficiency and equity in the provision of social services. Governance structures and degrees of progress towards governance goals vary widely and appear to be systematically related to the organisation, composition, location, and activity of each partnership.

This paper highlights how a successful partnership can be evolved in the presence of synergy between partners; strong leadership; shared objectives; success in coalition building; appropriate change in governance structure; a proper legal framework; and building in of safeguards and outside patronage. It examines successful interventions of the public private partnership in the health sector between a private medical college in Abbottabad and a public hospital in Mansehra, both within the province of NWFP, Pakistan. This paper has seven sections: An overview; The Partners; The Process of Building a Partnership; The Model of the Partnership; Workings of the Partnership; Evaluation of the Partnership and finally, some conclusions.

Section I: An Overview

1.1. Introduction

The aim of the government and the private sector in providing this public good is based on two entirely different perspectives; for the private

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sector, the fundamental concern is whether the delivery of service will make money; for the government, one of many considerations is whether it will save money through private sector participation. Moreover, the government must consider public values and address macroeconomic issues beyond the price of the service in the public and private sectors. A more cost effective and efficient service delivery in the public health care system can be achieved by reallocating budget expenditure (see Pasha, *et. al,* 1996).

Pakistan has many examples of inefficient nationalised institutions and it is now apparent that state interventions by edict in the affairs of citizens may harm rather than help. Prime steps would be taken for operationalising un-utilised or under utilised health facilities through NGOs in Public-Private cooperation (National Health Policy, 2001). Given that social sector expenditure of GDP is constant, then the rate of growth of public sector expenditure on the same will automatically slow down. However, it is found that 2/3 and 3/4 of total expenditure is obtained from private sources, which is the largest contribution in the health sector (see Sayeed & Ismail, 1996).

1.2. Private Sector Participation Methods

A good partnership takes shape when the objective of each partner is on imposing quality, efficiency and accountability in the services provided. The common understanding concerns finance, funding etc. and the detailed listing and study of all the benefits to each party. The contract highlights the governance structure so that both the parties exercise their rights to an extent and if a conflict arises, then the contract should signify the matter. Of key significance is the transparency and accountability of the contract. The competitive bidding approach is supported and intern productivity improvement best services at least possible cost are ensured (Stubbs & Clarke, 1996).

Whenever the universality, equity, efficiency and accountability in the delivery of the services increases, a partnership is successful. One case study involves how the model and working of the partnership contributes to the attainment of these objectives; Contracting, Concession, Franchise, Build Own Operate & Transfer (BOOT), Build Own & Operate (BOO), and Partnership (Public and Private).

Inputs, outputs or impacts are the three indicators for a quantitative measure of success. Benchmark data will be necessary in relative services prior to the formation of the partnership. This analysis will also impact the judgment concerning the degree of success of the partnership. Thus, a

common observation is that factors such as scope of synergy, quality of leadership, external support, success in coalition building, flexible and responsive governance structure, high level of transparency and accountability, presence of proper legal and regulatory framework etc. are indicative of the qualitative achievement of the partnership.

Given the financial constraints to the expansion of medical colleges in Pakistan, which have very high start up costs due to the need for expensive equipment and access to a hospital for clinical teaching, a real opportunity exists for a public-private partnership between a private medical college and a government hospital.

This case study examines the benefits from and functioning of such a partnership between the Frontier Medical College in Abbottabad and the District Headquarters Hospital in Mansehra. This is a unique case study due to the significance of scale in terms of the flow of funds between the partners and because of the ability of the partnership reaching a stage where it could be evaluated.

Section II: The Partners

2.1. Private Sector

The private sector partner in the Frontier Medical College (FMC) is located in Abbottabad, a divisional headquarter in the province of NWFP, with a population of 120,000 people. Recently, a public sector medical college, the Ayub Medical College has been set up in Abbottabad. This is a large teaching hospital complex with a capacity of 1000 beds.

The Frontier Medical College was established in 1996 in response to the need for more seats in medical colleges in Pakistan as a whole and within the province of NWFP. The College is fairly well endowed. It has about 50 acres of land, and is housed in a four-storey building with about 50,000 square feet of constructed area. It has a highly qualified and relatively well-paid faculty of 10 Professors, 2 Associate Professors, 5 Assistant Professors and 12 Lecturers. It is well equipped with the latest practical equipment and has a good range of educational models. The requirement for a teaching hospital is met through the partnership with the government District Headquarters hospital in Mansehra, which is in the adjoining district to Abbottabad. Facilities on campus include four lecture halls, four basic sciences labs, six demonstration rooms, three research labs, two seminar rooms, two dissection halls, two rooms to house the deceased, an auditorium with the capacity of seating 500 people, a museum, a

computer lab, medical treatment facility and hostels for students. The total capital cost is estimated at Rs.65 million (US $ 1.3 million).

The number of doctors registered in Pakistan stands at approximately 80,000, of which over 10,000 are working abroad. Those working out of 70,000 serve a population approaching 138 million i.e., the ratio of one doctor per about 2000 population. In contrast the doctor to population ratio recommended for developing countries by WHO is one doctor per 1000 population. Therefore, at this standard, the requirement of doctors in Pakistan is about 140,000. Another 70,000 doctors are required to fulfil the missing needs. Given this acute shortage, it is not surprising that medical education continues to command a premium status.

Teaching started in FMC in 1996. The annual intake of students is 50 both nationally in Pakistan and from abroad as well. The course of studies for the MBBS is five academic years, each of a nine month duration. The total hours of subjects are 4825. There are five parts to the professional examination, held once each year. There is a special entry test with a weightage of 40% for admission. Currently, the total enrollment in the college is 200 students. FMC is recognised by PMDC and is affiliated to the University of Peshawar.

FMC is a self-financing institution with funding from a Trust registered as the Al-Jamil Trust. A twelve member Board of Governors administers the college. The members include senior federal and provincial government officials, representatives from the private sector, elected representatives and leading members from the medical profession. The Chief Minister of NWFP is the Chairman and the Principal of the college acts as the Secretary of the Board.

The founding Principal of the college is Professor A. J. Khan. He is the former Principal of the Bolan Medical College, Quetta, Balochistan and the founding Principal of Ayub Medical College, Abbottabad; both are public institutions. He has served as Director General of Health within the Government, and has acted as President of the PMDC. He is also the recipient of the highest civil award of Pakistan for public service. The Dean acts as the head of academics at the college. Academic matters of the college are decided by an academic council consisting of heads of departments and professors.

Tuition fees are relatively high at FMC at Rs.195,000 (US $ 3750) per academic session lasting one year. For foreign nationals, currently there are 29 enrolled, the annual fees are $ 10,000. In addition there is an admission fee of Rs.30,000, initial caution money of Rs.30,000 and other miscellaneous fees of Rs.10,000 annually. The hostel accommodation fee is Rs.30,000 per academic

session. Despite these relatively high fees, FMC received 430 applications for 50 seats last year. Its potential weakness is that the relatively high level of fees excludes access to meritorious but relatively poor students.

2.2. Public Sector

In essence, the partnership of FMC is legally with the government of NWFP, which owns the District Headquarters Hospital in Mansehra, the effective partner. Mansehra is the neighbouring district of Abbottabad (the hospital is located about ten miles away from the college on an excellent road). The town of Mansehra where the hospital is located has a population of 52,000, while the district as a whole has a population of 1.1 million. The hospital not only serves this population but also the populations in the adjoining districts of Batagram, Shangla, Buner and Kohistan (with a combined population of 1.7 million).

Mansehra is a pre-dominantly rural district with rainfed agriculture essentially on hill slopes. The principal crops are wheat, maize and rice. Production and yield levels are relatively low. Household incomes in the region have been substantially enhanced by the inflow of home remittances from migrants in the large cities of Pakistan and the Middle East. Consequently, consumption standards are relatively high, in particular for permanent housing structures and a high demand for services such as health, education, water supply, etc.

The government hospital in Mansehra was established initially as a Tehsil (Sub-District) level hospital in 1972. In 1976 it was declared a district headquarter hospital. A tehsil hospital usually has about 100 beds and seven specialities, with medical personnel who are mostly diploma holders; a district hospital has upto 250 beds, fully qualified doctors and a three times larger budget. In 1998 when the partnership with FMC was officially formed, the hospital had 100 beds and was handling over 100,000 OPD patients annually. In addition, about 8000 patients are admitted to the hospital annually and almost 4000 are operated upon.

The executive head of the hospital is the Medical Superintendant, a senior middle level government official. All essential departments required for the clinical training of under graduate medical students including medicine, surgery, gynae, obstetrics, opthamology, otolaryngology, pediatrics, orthopedics, dentistry, radiology and clinical pathology exist in the hospital. The total component of doctors and senior staff is 30.The students of FMC have been using this hospital for their clinical training since the commencement of their first clinical class at the beginning of 1999.

Overall, the strengths of the public sector partner consist primarily in its ability to make available at least a minimum package of medical services to all, including the poor, at a relatively low cost. However, weaknesses include over centralisation of decision making (in the provincial health department), shortages in non-salary inputs, which retard efficiency in the delivery of services, and limited access to funds for the upgrading and expansion of facilities. The staff is also poorly remunerated resulting in a lack of incentive for improving their performance.

Section III: The Process of Building a Partnership

3.1 Impediments

The process of building a partnership between the public and private sector is rendered difficult by the general climate of mistrust and lack of confidence that prevails between the two parties. On the one hand, the government sees the private sector as being motivated primarily by profit maximisation considerations and therefore, fundamentally in conflict with the objective of increasing the outreach of health services to essentially poor unserved populations at a relatively low cost. On the other hand, the private sector sees the government as being restricted by bureaucratic red tape, which tends to slow down decisions and retard innovation. Perhaps, even more importantly, government functionaries are seen as being notoriously prone to corruption in their dealings with the private sector, which raises transaction costs and frequently distorts the allocation of resources.

The evolution of the partnership between FMC and the government of NWFP has a long and chequered history. Initially, the FMC had proposed to the provincial government that it might be the recipient of land sold in Mansehra at relatively low costs in order to establish a teaching hospital. But the local landowner demanded a high price, well above the prevailing market rate, and hence, this idea had to be abandoned.

Thereafter, the FMC made a bid for using the large 600 beds at DHH, Abbottabad to serve as its teaching hospital. This was a logical choice as it was located close to the college campus and had all the facilities necessary for the effective clinical training of students. But there was no clear cut response from the authorities because the future of this hospital was uncertain. Abbottabad city already had a substantial presence of government (including military) and private hospitals. The commissioning of the 1000 bed hospital in Ayub Medical College raised the number of hospital beds in the city to over 2500.This implied considerable excess capacity, in the presence of which there was a strong case for closing down the DHH.

The third option presented by FMC was to establish a partnership with DHH, Mansehra, which was not as well endowed with the proper facilities as the DHH, Abbottabad. The college initially offered capitation fees of Rs 10,000 per student, which had to be raised to Rs 50,000 during the negotiations. The FMC agreed to the escalation on the condition that most of this money would be used to upgrade the facilities at DHH, Mansehra, and thereby improve the quality of clinical teaching there.

The principal of FMC has made the significant observation that frequent changes in the provincial governments (1996, 1997 and 1999) and in the posting of government officials have created hurdles in the evolution of the partnership. Given the uncertainty, FMC insisted on a legal agreement being signed with the government of NWFP initially for a period of three years specifying the terms and conditions of the partnership. Also, given the delays, FMC started teaching on its own in 1996 in a small, temporary structure.

Other impediments to the development of a partnership lie in the divergent interests of the various stakeholders. In the case of Mansehra, the staff members of the DHH were initially opposed to the idea because of the fear that it might affect the terms of their service, impose additional workload on them in providing inputs of clinical teaching to the students as well as interfere with the discharge of their normal duties relating to the treatment of patients.

The community at large in Mansehra was also apprehensive of the impending partnership between FMC and DHH as this appeared to be the first step towards the ultimate privatisation of the latter facility. It was feared that user charges would be raised drastically making the facility out of reach for the poorer segments of the population in Mansehra district. These concerns had to be allayed by a number of meetings by the Medical Superintendant of DHH with notables of the area.

3.2. Role of Leadership

Perhaps a critical element in the eventual formation of the partnership was the leadership role played by Prof. A. J. Khan[1], founding Principal of FMC. Despite the many impediments, Prof. Khan pursued with determination and zeal his goal of establishing a private medical college in

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[1] Prof Khan's significant advantage was that he had held several key government positions and had been the Principal of two major public colleges. He not only had contacts with the highest level functionaries within the government of NWFP but he was also widely respected in the health department of the province and in PMDC.

Abbottabad. Not only did he donate his own land to the college but he mobilised funds for the establishment of the college by establishing a trust.

Given that he was from the district of Mansehra, there was a general trust of the people in his desire to do something positive for the district. In addition, the formation of a trust and the appointment of a strong Board of Governors with the Chief Minister as the Chairman removed any residual mistrust that may have existed in the minds of officials about the motivations of FMC. Furthermore, the partnership was strengthened at the operational level by the unwavering understanding and cooperation developed between the Principal, FMC, and the Medical Superintendant, DHH, Mansehra.

Section IV: The Model of the Partnership

4.1. Objectives of the Partners

As explicitly stated in the legal agreement between the partners (the government of NWFP and the FMC) the basic objective of the NWFP government (and its health department) is to upgrade and improve health care facilities at the DHH, Mansehra, while the FMC is desirous of obtaining teaching facilities for its medical students at this hospital.

4.2. Inputs by Partners

The DHH, Mansehra will provide for and make facilities available for teaching purposes for the students of the college. In return, the FMC will make payment of capitation fees as given below:

- Capitation fee of Rs.50,000 per student per year for three classes over three years (from January 1, 1999 to December 31, 2001) totaling Rs.15 million as follows:

Year 1	50 Students	1 Class	Fee Rs.2.5 million
Year 2	100 Students	2 Classes	Fee Rs.5.0 million
Year 3	150 Students	3 Classes	Fee Rs.7.5 million
Total	300 Students		Fee Rs.15.0 million

- The capitation fee as indicated above shall be paid in two installments. A sum of Rs.8 million as part of the first installment of the capitation fee shall be paid immediately upon signing of the agreement. The remaining amount of Rs.7 million shall be paid within 18 months of signing this agreement.

Therefore, the model of the partnership is essentially based on financing by the private sector and provision of services by the public sector.

4.3 Safeguards

A number of safeguards have been build into the agreement, which are as follows:

1. Ownership of Assets:

The agreement is only for temporary use of the facilities of DHH. The hospital, all its assets, land and structures shall continue to remain under the ownership and possession of the government of NWFP. Any new building, equipment and other assets constructed and added to the hospital shall become the property of the government of NWFP with full vested rights. It is important to note that even if the new construction is partly financed out of the capitation fees, the FMC will have no ownership rights on the newly created assets.

2. Rights of Beneficiaries:

The hospital will remain part of the health delivery system of the government of NWFP and shall continue to provide services to the public, not inferior to those provided before the signing of the agreement, or provided by equivalent district headquarter hospitals elsewhere in the province. In particular, the hospital shall ensure minimum health cover for the poor patients at the lowest possible cost as provided in sister government hospitals within the province. This provision was necessary to remove the perception that the formation of the partnership was the first step towards privatisation of the hospital, eventually leading to substantially higher user charges.

3. Status of Hospital Employees

The employees of the hospital shall continue to be civil servants and be governed by the relevant government rules. Matters relating to their service conditions shall remain the responsibility of the Department of Health, government of NWFP. There will also be no modification in their pay structure. This safeguard was introduced to allay any fears on the part of the employees that as a result of the partnership with a private party, their employment status could be changed and, in particular, that they might lose security of tenure.

Moreover, the agreement states that district specialists in the hospital, possessing requisite qualifications and experience for teaching purposes (based on the approved requirements of PMDC) shall, during the currency of the agreement (initially of three years), be designated as Assistant Professor or Associate Professor, as the case may be, for teaching purposes of the FMC. In addition they shall be paid a teaching allowance equal to 20 per cent of their basic pay adjusted from the capitation fee receipts. All other staff of the hospital shall be paid a special allowance of 10 per cent of their basic pay out of the capitation fee receipts. Therefore, not only has security of service been guaranteed but the staff of the hospital will get higher remuneration during the tenure of the agreement. This creates a strong vested interest on the part of the employees for the continuation of the partnership.

4. Budgetary Commitments by the NWFP Government

The NWFP government has committed itself to continue to meet recurrent costs on salary and allowances of its employees through the Accountant General's office; additionally the government is to provide non-salary recurrent budget grants to the hospital at the level of budget estimates for 1997-98 duly indexed for inflation. The annual recurring budget of DHH, Mansehra is about Rs.12 million, with a salary component of Rs.9 million. This safeguard was essential to ensure that in view of the sizeable income from capitation fees paid by FMC, the government did not cut back its budgetary allocation to ensure some savings. In the event of this happening, the capitation fees would have been largely diverted to finance recurrent costs and would not then be used for upgrading the facilities of the hospital.

5. Establishment of the Hospital Fund

A further provision in the agreement to ensure that the income from capitation fees is used primarily for development is the establishment of a Hospital Fund. Money which will accrue to the fund includes the following: non salary recurrent grants and development grants from the government of NWFP, receipts of service fees and miscellaneous income of the hospital, capitation fee from the FMC and return on investments made from the hospital fund. The receipts and expenditure on the Hospital Fund shall be audited by the Director General Audit of the government of NWFP. The accounts of the Hospital Fund shall also be audited annually by an internal auditor.

It is significant to note that the hospital is being allowed to retain its income from user charges and not surrender it to the government of NWFP as in the case of deposits in the Provincial Consolidated Fund. This tantamounts to granting autonomous status to DDH, Mansehra.

All amounts credited to the fund (including resources from the capitation fee) shall be utilised for the development and upgradation of the facilities at the hospital, particularly towards the provision of the following:

- Construction of a fully equipped new block of 100 bed ward within the premises of the hospital;

- Expansion and improvement of the existing casualty department;

- Establishment of a fully equipped ICU, CCU and a new operation theater;

- Improvement of existing wards and outpatient department.

The government of NWFP has also committed itself to give a development grant of Rs.8 million from the provincial ADP funds over a maximum period of two years (1998-2000). This grant is to be used in conjunction with moneys from the fund for the upgradation of infrastructure and service facilities at the hospital. Given that the initial payment of capitation fees by FMC on the signing of the agreement is also Rs.8 million, this means that the two partners propose a matching 50:50 contribution to the development of the hospital.

4.4. Synergy in the Partnership

Synergy arises in the relationship between two parties when the formation of a partnership between the two makes each party better off in relation to the situation when such a partnership had not been formed. In other words, the partnership can be characterised as a *positive sum co-operative game.*

In the context of this particular case study, it is necessary to demonstrate how the nature of the partnership makes each party potentially better off. In order to do so we consider the case of the DHH, Mansehra and in what sense it has benefited from the partnership. The following benefits can be attributed to the study of DHH:

- Inflow of substantial amounts of money as capitation fees from the FMC, which can be used for improving and upgrading the facilities at the hospital;

- Inflow of additional development funds from the government to match the contribution by FMC at a time when there appears to be a severe fiscal squeeze on the provincial government and there has been a contraction in real allocations to the health sector;

- Enhancement in the status of the hospital as a teaching hospital and with the expansion in capacity, enhanced ability to offer more and better services to the population in Mansehra district and adjoining districts;

- Presence of senior students from FMC enables an improvement in the quality of medical care.

As far as the FMC is concerned, benefits accruing from the partnership include the following:

- Linkage with a teaching hospital. This has substantially reduced the start-up costs of the college. If the FMC had gone in for an independent teaching hospital it would have had to come up with an initial investment of Rs.50 to Rs.60 million. Arranging this volume of funds would have delayed the execution of the project. Besides, it would have had difficulty in gaining recognition from the PMDC of its medical degree in the absence of a teaching hospital.

- Initial investment in a teaching hospital attached to the college would have also required an annual recurring subsidy of Rs.10 to Rs.15 million which would have substantially drained the college's financial resources. Given the presence of a large number of public and private hospitals in Abbottabad, including the 1000 bed teaching hospital at Ayub Medical College, it would have been difficult to attract patients at the relatively high fees being demanded. The payment of capitation fees to gain access to the DHH, Mansehra, not only saves expenditure for FMC but also given the large number of patients at the hospital and the wide range of diseases treated, enhanced exposure for the students; further, the quality of clinical teaching is significantly better.

- The founding principal of FMC, Prof. A. J. Khan, who is the key project sponsor, also views the development of DHH, Mansehra, and its

enhanced ability to provide better services to local residents as a worthwhile objective, especially since he is himself from the district of Mansehra. Moreover, he sees the investment of capitation fees in upgrading the hospital facilities as being beneficial to the college because it improves the quality of future clinical training of students through establishment of the ICU, CCU and a range of new specialities.

Section V: Workings of the Partnership

5.1 Governance Structure

A number of changes in the governance structure were necessary for the smooth functioning of the partnership. A critical step forward was the granting of operational autonomy to the DHH with the establishment of a Hospital Management Board. Such autonomy was essential for the public sector partner to have the flexibility to be able to effectively manage the partnership. This autonomy has generally not been granted to DHHs.

District Coordination Officer	Chairman
Executive District Officer (Health)	Co-Chairman/Member
Principal of the College	Vice Chairman
Nazim	Member
Two prominent citizens to be nominated by the first party	Member
One representative of the College	Member
Medical Superintendent, District Headquarter Hospital, Mansehra	Member

The functions of the management board lie in the administration and management of the hospital. This includes disciplined clinical coaching, upgrading and development, annual and revised budget estimates to be submitted to the government, review of the quarterly annual report and its submission to respective boards, establishment of a regulatory framework and collaborative arrangements in the interest of the hospital. The Board is expected to meet at least once every quarter.

There are a number of significant points to note about the composition of the Board. First, both partners have representation on the board. For the FMC there are two seats, one for the Principal standing as the Vice Chairman and the other for a representative nominated by the college as a member. This implies that the private sector partner has been given an important role in the management of the hospital. The Medical

Superintendent of the hospital acts as the Secretary of the Board. Second, the Chairman of the Board, the District Coordination Officer is an outsider. He can effectively act as an arbitrator in the event there is any dispute between the two parties. Third, the board has representation from two prominent citizens nominated by the government of NWFP. This introduces an element of external accountability and potentially makes the board more responsive to the needs of the people of the area.

Community involvement is essential in sustaining Public and Private Partnership over the long term. It is observed that significant local involvement makes public programmes more effective and the use of public resources increasingly efficient (Van Der Gaag, 1995). The absence of institutional changes like delivery of services by enhancing the implementation capacity of line departments, exploration and community involvement of the private sector in choice, execution, management and financing of projects were a few of the reasons already mentioned regarding the failure of the Social Action Programme (SAP) (Pasha, *et. al,* 1992).

Within the functions of the Board there are some which relate directly to the working of the partnership. The first is the establishment of a regulatory framework for collaborative arrangements in the partnership; the second is concerned with the regulation of clinical teaching and discipline among students during teaching at the hospital and the third concerns the approval of development plans for the hospital.

5.2 Process for Review of Partnership

Senior to the Hospital Board, a special Review Board has been constituted to monitor the implementation of the agreement. The Review Board comprises the chairman who is the additional chief secretary to the government of NWFP whereas the five members on the board are secretary finance department, secretary health services and general administration, principal of the college and two members cum secretaries from the hospital board who are not civil servants and finally chairman of the hospital management board. The Board is expected to meet at least once a year.

It may be observed that the prime purpose of this Board is to review the implementation of the agreement and the audited accounts of the Hospital Fund. Here again, it is significant to note that even at this high level there is representation both from the private sector partner and of citizens. The Review Board can be seen as the final authority for any conflict resolution between the two parties.

At the operational level, arrangements have been made to ensure that clinical training by doctors at DHH, Mansehra, does not cut into the prime time devoted to the treatment of patients. Clinical training sessions are held in the early morning hours from 8:00 to 9:00 am before OPD timings. Students also accompany doctors during their visits to the wards. Their presence has apparently made doctors more careful in their diagnoses.

Section VI: Evaluation of the Partnership

6.1 Success Indicators

The prime indicators of success for a public-private partnership are the efficiency, equity and effectiveness of services provided. For purposes of undertaking the evaluation the following stakeholders were interviewed.

Stakeholders

Hospital	College
Hospital Administration	College Administration
Hospital Staff	College Staff
Patients	Students
Citizens	

Perhaps the most powerful visual indicator of success is completion of the construction of the new wing of the hospital. This wing has a capacity of 150 beds, far in excess of the expansion stipulated in the agreement. It includes an ICU, CCU and a number of operation theaters. The construction cost of Rs.15 million has been financed by the first installment of the capitation fee paid by FMC of Rs.8 million and a development allocation from the ADP by the provincial government as per the agreement.

The construction of the new wing more than doubles the capacity of the DHH and makes it equivalent to the DHH in some of the other more developed districts of the country. Consequently, the hospital will be able to avoid overcrowding and congestion in the use of its facilities. Not only will it be possible to more effectively serve the population in its catchment area, but also the quality of service will increase significantly. All this has been achieved without any increase in user charges, which remain very low. For instance, the OPD charge is Rs.3 (6 cents), the admission charge is Rs.15 (30 cents), X-ray charge is Rs.35 (70 cents) and ECG charge is Rs.40 (80 cents). Operations are carried out at no cost. Equity considerations have not been sacrificed. This is a major achievement.

The success of this model of the partnership has also induced support from elsewhere. The provincial authorities are proposing to donate furniture and equipment which will become surplus when the DHH, Abbottabad, closes down. This will considerably reduce the costs of furnishing and equipping the new wing. In addition, the provincial government has shown interest in investing in some of the more specialised facilities.

6.2 Views of Stakeholders

Beyond this, other indicators of success as determined from interviews of stakeholders are as follows:

i. FMC College Administration / Faculty:

The respondents are extremely satisfied that the DHH, Mansehra, has been upgraded and has expanded so rapidly, and that the money paid as capitation fees has been used primarily for development purposes. They feel that the expansion in medical staff at the hospital, the offering of new specialities and the commissioning of an ICU and CCU will greatly contribute to improving the quality of clinical training being imparted at the hospital. The faculty also feels that the presence of senior students in the wards have made doctors more alert in their diagnosis and treatment of patients.

The Principal of FMC has expressed the desire to renew the agreement with the government of NWFP at the time of expiry of the present agreement in July 2001. However, work has recently commenced on the construction of a hospital on the college campus. Prof. Khan believes that the relationship with DHH, Mansehra, should continue even after the commissioning of the FMC hospital, because the latter is unlikely to have the same volume and diverse nature of patients.

ii. FMC Students:

Some of the students have highlighted the problem of inconvenience faced in commuting between the college and the hospital. However, they emphasise that they have greatly benefitted from the exposure to the various kinds of patients at DHH, Mansehra. They have also praised the doctors of the hospital for being very cooperative and taking interest in clinical training. An intangible benefit is the exposure of students to patients and illnesses / diseases in a rural setting. This may motivate some of them to set up practices in small towns rather than congregate to the

large cities like Lahore and Karachi, which already have an abundance of doctors.

iii. Hospital Administration / Staff:

The hospital administration and staff are proud that their hospital has been granted autonomous status and has truly become a DHH, with the status of a teaching hospital. This has enhanced their standing in the medical profession. Further, they are content that their remuneration package has been enhanced due to the partnership without any change in their conditions of service. No staff member has complained about the additional workload. The hospital administration is looking forward to the time when the government will sanction posts for more doctors in the new wing and thereafter, some students on completion of their MBBS may join as residents. This will greatly expand the capacity of the hospital to handle even more patients.

iv. Patients / Citizens:

Interviews of patients and a group of citizens revealed that they too were pleased that the DHH, Mansehra had been successfully upgraded without any enhancement of user charges. They admitted that their initial fears of the privatisation of the facility have proven to be unfounded. Interestingly, some patients have remarked about a visible improvement in the quality of service due to greater presence of doctors. Apparently, they are unable to distinguish between doctors and students, all of whom wear white coats. Some citizens remarked that this successful model of partnership, first developed in Mansehra should be tried elsewhere in the province of NWFP.

Section VII: Conclusions

7.1 Factors Contributing to Success:

A number of factors can be identified which have contributed to the success of the model of partnership between the government of NWFP (through the DHH, Mansehra) and the FMC, involving the provision of clinical and teaching facilities by the hospital and the payment of capitation fees by the college for this service. The success factors include the following:

i. High Premium on Medical Education:

An underlying favourable factor is the high level of demand for medical education in Pakistan. Despite high capital costs, private medical colleges have become financially viable because of the relatively high fees that can be charged. FMC's annual fees and other charges per student exceed Rs.200,000. This has made it possible for FMC to offer to pay high capitation fees of Rs.50,000 per student to DHH, Mansehra, and thereby make the partnership financially attractive to the latter.

ii. Large Scope for Synergy:

This particular model of partnership chosen also has great potential for synergy, whereby each party benefits significantly from the partnership. FMC was able to reduce its start-up costs and gain faster recognition from PMDC while DHH, Mansehra got enhanced status and substantial additional funds to upgrade the hospital. This synergy greatly increased the incentive for forming the partnership and also increased the likelihood of success of the arrangement.

iii. Quality of Leadership:

The role of Prof. A. J. Khan in piloting through the concept of public-private partnership in the field of medical education for the first time in Pakistan must be emphasised. Given his status and past positions held in the government, he was able to surmount the obstacle of mistrust of the private sector in the bureaucracy. Formation of a Trust and establishment of a Board of Governors of the college helped further in surmounting this lack of faith. Prof. Khan demonstrated successfully that his goal was not profit maximisation by donating land free of charge for the construction of the college campus.

iv. Shared Objectives:

Prof. A. J. Khan's offer to pay relatively high capitation fees was partly motivated by the desire to contribute to the upgrading of DHH, Mansehra, so that it could provide enhanced and improved services to residents of Mansehra district, a district to which he himself is a resident. Therefore, he shared the same objective as the government of NWFP in expanding the coverage of medical services. Also, the Medical Superintendant of DHH, Mansehra had an established good standing with Prof. A. J. Khan, which made it possible for both of them to work together for the improvement of the hospital.

v. Success in Coalition Building:

Initially different stake holders had varying perceptions about the partnership. Citizens of the area were worried that this was the first step towards privatisation of the government hospital and that subsequently user charges would be raised. This fear was allayed by a series of meetings of the MS with notables of the area and by including representatives of the citizens in the Hospital Management Board and Review Board. This ensured a degree of public accountability of the arrangement.

The hospital staff was worried that their employment status might be changed and they would lose their security of service. However, in the agreement their rights have been fully protected. In fact, they have been granted a special allowance during the tenure of the partnership. Altogether, the parties involved to the arrangement skillfully built a coalition of support for the partnership from the various stakeholders.

vi. Appropriate Changes in Governance Structure:

A fundamental change made was the granting of administrative autonomy to DHH, following the granting of the status of a teaching hospital by the establishment of a Hospital Management Board. This increased the flexibility of the hospital management to respond to any problems that may arise during the tenure of the partnership. Also, the private sector partner has been given a significant role in the management of the hospital by due representation on the Board.

vii. Proper Legal Framework:

The terms and conditions of the partnership have been clearly specified in a legal agreement that holds true for three years between the government of NWFP (which owns DHH, Mansehra) and FMC. This is to ensure proper transparency in terms of the obligations of each party and to provide the necessary regulatory framework to monitor the implementation of the agreement.

viii. Building In of Safeguards:

The legal agreement is a comprehensive document and has careful built in safeguards for the proper utilisation of funds, for protection of the rights of patients and hospital employees, and for

conflict resolution between the two parties. This minimises potential problems in the working of the partnership. In fact, the legal agreement is exceptionally well drafted and can become a model for similar partnerships elsewhere in Pakistan.

ix. Outside Patronage:

The government of NWFP honoured its commitment of giving a development allocation of Rs.8 million to upgrade DHH, Mansehra. The divisional/district administration has also taken an active interest in the project. The District Coordination Officer & Executive District Officer have been supportive and monitor the partnership as Chairman / Co-Chairman of the Hospital Management Board. Success in rapid completion of the new wing of DHH, Mansehra, has motivated the government of NWFP to offer equipment and furniture, which will become surplus commodities after the closure of DHH, Abbottabad.

Altogether, several factors including the high premium on medical education, large scope for synergy, quality of leadership, shared objectives, success in coalition building, appropriate changes in governance structure, proper legal framework, building in of safeguards and outside patronage have all contributed to making this a unique successful model of public - private partnership in the health sector of Pakistan.

7.2 Lessons Learned from the Case Study and Policy Implications:

The case study from Pakistan demonstrates that the inherent mistrust between the public and private sectors can be transformed into a mutually beneficial partnership if the gains from co-operation are high, there is strong leadership, and further a commitment to common objectives, if attempts are made to build a coalition of support by resolving the divergent interests of various stakeholders, if appropriate changes are made in the governance structure and if a proper legal and regulatory framework is put in place to ensure transparency and accountability of the arrangement.

The relationship between the government of NWFP (through the DHH, Mansehra) and the Frontier Medical College is currently a unique model of partnership in the Pakistani setting, which evolved because of a combination of favourable factors. Can it be replicated elsewhere? Given the success of the model, the answer is probably a yes. In fact, an advertisement has recently appeared in the leading Urdu newspaper of Pakistan, *Jang,* wherein the Railway Hospital in Lahore has offered its facilities to an interested private medical

college. However, success in forming partnerships will hinge as stressed earlier on the quality of leadership, on the ability to build a coalition of support, and to agree on a legal and regulatory framework (along with appropriate institutional changes) of the type observed in the case study.

The case study also has some significant policy implications for replication of this model of partnership in the province of NWFP and in the country as a whole, from the viewpoint not only of expanding the coverage of basic health services but also of increasing the output of medical personnel. First, the move towards granting of administrative autonomy to district headquarters hospitals, as was done in Mansehra, through the establishment of Hospital Management Boards appears to be a desirable step from the viewpoint of overall supervision and policy direction and creating accountability to different stakeholders. It also increases the ability to respond to opportunities arising, say, from the formation of partnership with private entities.

Second, the NWFP government has done pioneering work in establishing a proper legal and regulatory framework for the working of the public-private partnership. In particular, the legal agreement is well-drafted and covers all relevant aspects of the relationship. A stage has been reached when a model legal agreement can be prepared which could act as the basis for a partnership between a public hospital and a private medical college across the country.

Third, successful public-private partnerships are rare in the health sector of Pakistan. Therefore, the success in Abbottabad-Mansehra should be widely publicised to demonstrate the gains that can be realised from such partnerships. Health policy statements should more strongly emphasise the need for and scope of pubic-private partnerships. This case study can also be more widely disseminated within Pakistan and elsewhere to create greater awareness of the benefits of public- private partnerships.

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Pakistan's Health Care Under Structural Adjustment

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Health Care Under Structural Adjustment

Abstract:

The health sector in Pakistan is replete with multifarious problems. It is not responding to the needs of the masses in a way that would provide high-quality care to all in need. Despite the announcements our governments make about health care each year, it limits people's life chances. That international financial institutions claim that state subsidies to health care create undesirable ' market distortions' that benefit the rich is another contradiction faced by the health sector. In the name of greater equity and efficiency, they argue that users of primary health care services should pay user fees, even if they are from the impoverished class. These institutions have provided structural adjustment loans to remove short-term problems. This lending has not contributed to the improvement of health facilities. The state has significantly withdrawn itself from health matters: it only spent 0.7 % of GDP in 2000. According to the 1995-96 PIHS the private sector controls 80% of the health care provisions in Pakistan. Ongoing privatisation of hospitals is likely to strengthen the private sector further. In sum, the neo liberal medicine is not having the desired effect on the health status of the population

It is an international responsibility for nations to protect and promote the health of their populations. The right to health and medical care is widely emphasised in the basic documents of the United Nations and WHO. (Dr Sajjad U Hasan, HRCP Newsletter, April 2002).

The first signs of the emerging right to health are to be found in the Universal Declaration of Human Rights (UDHR). In Article 25 of the Declaration, it is stated that everyone has a right to `a standard of living adequate for the health and well being of himself and of his family.' The Declaration further spells out a set of principles to guide countries on how to go about upholding the dignity of mankind.

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The 1973 Constitution of Pakistan includes several of the human rights spelt out in the Universal Declaration. In Article 38 it is stated that 'the State shall secure the well being of all people by raising their standard of living and shall provide basic necessities of life, such as food, clothing, housing, education and medical relief for all such citizens as are unable to earn their livelihood by reason of disease, infirmity or unemployment'. This document although recognising the supremacy of civil and political rights, puts greater emphasis on the economic and social rights of people.

Conventional adjustment policies developing countries like Pakistan face have suffered from gross inadequacies. The voiceless, vulnerable majority has had to suffer the brunt of the harsh policies that such adjustment entails. Nutrition and educational levels of children have fallen sometimes drastically, as well as a fall in investment rates. The net result has often been a curtailment of economic growth. Hence the need for alternative adjustment packages. (Cornia, Jolly and Stewart, 1987: 131-3).

As is often the case, global recession as occurred in the 1980s and financial stringency compel governments to cut back on overall expenditure. In the process, social services including health expenditures are the first to be axed considerably. In combination with other policies such as a freeze or reduction in real wages, or the increase in the cost of living and prices of necessities, have a serious effect on the health of the poor, particularly women and children.

But in certain countries it is not inevitable that health conditions deteriorate because of recession or structural adjustment. Governments can and do intervene at such times to improve the health status of the population. The health of a population can be sustained far more by a basic restructuring of social institutions than by financial resources alone.

To state the somewhat obvious, the essential and primary producer of health is the family, particularly the mother. The mother's ability to produce and bring up healthy children will in essence be determined by the resources of the household. It is here that governments can play an active role by influencing household incomes through price and wage determination, and other interventions.

In this framework, physicians, services and drugs are considered to be the inputs while health is the output. Also considered to be an input is social mobilisation and awareness programmes through the media and the school system.

In other words, health is by no means considered to be a consumer good as per the conventional attitude. Implicit also within this framework is the assumption that expenditures on health are a form of investment and hence productive and leading to national development. Technically qualified manpower forms a considerable chunk of health expenditure but now the philosophy of primary health care and `health for all' is gaining popularity with many success stories. The challenge for the health sector when adjustment policies are at play is how to change these adjustment constraints into structural changes that can realise these health goals. (Cornia, Jolly and Stewart, 1987:218-224).

The question concerns certain priorities for the health sector, listed below:

1. The need is for a broad based, long term strategy for health in order to gain by multiplier effects from particular health programmes; For instance, safe water supply and sanitation which is an essential ingredient of primary health care, yet does not come under the purview of the Ministry of Health by any yardstick. Safe water and sanitation inevitably require interventions outside the Ministry of Health.

2. Health activities should be undertaken keeping in mind the health needs, infrastructure and basic socio-economic structure of each and every situation.

3. Political will and leadership are indispensable for an effective health programme, to compensate for the marginalisation of the `voiceless' and the vulnerable.

The dividing line between the demands of human security and of national security throughout South Asia is a very fine one. The former calls for investment in people, while the latter investment in arms. To arrive at a balance between the two is a real problem for policymakers. Until and unless this dilemma is adequately solved, it will not be possible to improve human development in South Asia. The current levels of military spending in South Asia are a serious cause for worry. While the region has nearly 40 per cent of the world's poor, it also manages to spend in the environs of $14 billion or more on the military. (Human Development in South Asia, 1997: 80). Soldiers in South Asia outnumber doctors by 6:1, even though people are dying of curable diseases.

As Cornia, Jolly and Stewart further state, the following basic points need to be pay heed to in order for mortality to be reduced and child health improved when a nation is undergoing structural adjustment:

1. Basic health care can be relatively low cost. For instance in Pakistan, it was observed in the 1980s that it was feasible and possible to carry out an entire nation-wide immunisation programme from the savings that resulted from not constructing one expensive urban hospital.

    Further, if large hospitals were themselves to consciously adopt more cost effective methods and systems, the savings from this would be of a considerable magnitude. Resources could thereby be freed for the provision of basic health services. The need of the hour is hence to make services more cost effective by restructuring health services, which will lead to ensuring the care of a healthy population.

2. The quality of a health programme can improve by leaps and bounds by focusing on the basic components of child survival and development. The widespread introduction of Oral Rehydration Therapy (ORT) is a case in point.

3. Non Government Organisations and political leadership can mobilise the population to participate in health programmes.

South Asian Success Stories

Sri Lanka and Kerala in India are two instances where the health policies, due to direct action have met with exceptional success. In the case of Sri Lanka, before the 1970s, governmental action in three directions is the essential reason for the relatively salubrious health of the population. These policies included the provision of health facilities, free and compulsory education, and free or subsidised food rations. (Basu in Dreze, Sen and Hussain, 1999:375-380).

Sri Lanka's health record is praiseworthy, with excellent mortality figures resulting from a successful malaria eradication programme on the part of the government in 1946. Compared to most other South Asian countries, the ratio of doctors to nurses to the total population is high.

Vital for the success of any health programme is a certain minimum level of education amongst the population so that people are ready and willing to accept what the government has on offer. Otherwise family planning programmes will fail and people will view vaccination centers as

torture cells. (Basu in Dreze, Sen and Hussain, 1999: 377) Therefore the other factor that helps explain Sri Lanka's impressive health record is its long history of free education.

How have food rations contributed to better health of the population? This has taken the form of providing a certain amount of free rice and sometimes wheat, as well as additional rations at a subsidised price. Consequently, Sri Lanka's daily calorie intake is much higher than that of other South Asian countries.

Similar circumstances prevail in Kerala, a state that has proved that improvements in standards of living are not necessarily a function of growth. Educational performance is remarkable and health facilities are better distributed, all as a result of progressive government policies. Food rationing where food items are distributed at subsidised rates, exist in both urban and rural areas.

In the final analysis then is there a trade off between equity and growth? Although we will not delve on the issue here, Kaushik Basu (in Dreze, Sen and Hussain, 1999:382-4) optimistically argue that most LDCs are operating below their possibility frontiers and hence there is sufficient slack for them to enjoy more of both equity and growth.

Pakistan's Case

Zaidi claims that health services in Pakistan are highly inequitable and urban biased, based on a western oriented curative care model.. (Zaidi, 1988:123-32)

The 1978 Alma Ata declaration on `Health for all by the Year 2000' has nowhere near been realised in Pakistan and is still a far cry. The need is for a new model of health care that will indigenise health care and make it available to all citizens of the country. The emphasis ought to be on preventive rather curative health care and the urban bias should be remedied.

Pakistan's health care system typifies many postcolonial Third World countries, although there are features that are specific to it. The health care model has barely changed since British rule being doctor oriented, curative rather than preventive and urban biased in terms of resources and personnel. Although the population per doctor has fallen from 11,133 in 1976, to 1,529 in 2000 this improved ratio is nowhere near adequate in terms of improving the health status of the population. Similarly, in expenditure terms government expenditure on health increased from Rs 979.2 million in 1976 to

Rs 24,281 million in 2000, the increase in real terms and as a percentage of GDP has been extremely low. What with the private sector playing the dominant role, it is highly inequitable, where the ruling criterion is ability to pay rather than need. (Zaidi, 2001:279). Since the private health care system has virtually taken over, the public health care system has been seriously undermined. The end result is that the health status of the population is nowhere what it should be given the level of development as measured by per capita income.

The picture could have been far grimmer had there not been the vast inflow of money from the Middle East remitted by workers from 1977 to 1988. (Zaidi, 2001:281-2). A considerable portion of these remittances was spent on small-scale employment and house improvements which led to better, more hygienic and healthier living conditions. In any event health indicators are still pathetically low especially when compared to other low-income countries.

Health policies in Pakistan have almost throughout reflected the conditionalities of the donor agencies. In the World Bank's *World Development Report 1993*, a lucid statement is made with regard to LDCs' reforms in the health sector. Government inefficiency and corruption receive a great deal of flak as well as heavy expenditures on curative medicine and specialised health training that ends up subsidising the rich. The slant presented is to shift from tertiary medicine to primary health care. As Khan points out, all this give the Bank the appearance of a 60s radical, but that is not the case since radical proposals and the Bank's well intentioned measures are in fact quite at odds with each other.

The Bank's main thrust in keeping with its overall outlook is to minimise the government's role and give free play to the market and the private sector. Privatisation is the buzzword, the idea being to `get prices right'. However, this is not without qualifications as the Bank does see an important role for the government in disease control and dietary supplement programmes. Related to this is the government's role in disseminating information on disease control. (Khan, 1999:138-40)

The idea is to curtail government expenditure on health by cutting down on subsidies and inessential services and improving services via decentralisation. Cuts in government recurring expenditure will lower recruitment in the public sector including the health sector and cuts in capital expenditure will either terminate or slow down the process of expansion of health facilities. As with other private sector institutions, private medical colleges are mushrooming and are in for boom times. They

charge the students market tuition rates unlike public sector institutions. This will only lead to more doctors in a doctor dominated health care system who will charge exorbitant consultation fees in order to make some returns on their investments in educating themselves. (Zaidi, 2001:287-8) Given the conditionalities of the structural adjustment programmes, there is a strong likelihood that the public sector will no longer act as a provider of health care, especially primary and secondary level care. Its only role will be to ensure an `enabling environment' so that the private sector can function without hurdles. It is intended that encouraging competition and allowing the private sector to deliver health services and inputs such as drugs and medical equipment will further reduce costs. User fees are recommended for the recovery of costs.

It is in essence a three-pronged approach. Macro stabilisation leads to improved growth, that enhances the incomes of the poor and that in turn will enable them to invest more on health. To sum up, the Bank advocates a minimal role for the government to avoid inefficiency and corruption and the promotion of diversity and competition. The Bank has been widely criticised for its health reforms on the grounds that its concept of primary health care is far too narrow and restricted, and that by promoting the private sector in health care, the government is abdicating its responsibility as a provider of basic human needs.

Pakistan's health policy of 1997, like those that came later, follows the Bank's reform agenda in letter and spirit. The private sector takes on the primary responsibility in the areas of family planning, preventive services and drugs. Likewise Basic Health Units and Rural Health Centres were to be contracted out to private health physicians and lastly, autonomy would be granted to certain hospitals and they would be permitted to levy user charges. The outcome of granting autonomy to these hospitals was that the services provided have become more expensive, making them unaffordable for the poor.

Even till the present, it is often the poor who have to wait in long queues as against the relatively well off who simply jump the queue or go to a specialist by paying exorbitant fees in private clinics. No new public hospitals are in the pipeline. Today in Pakistan, the medical profession is a flourishing profession, amongst the most lucrative that exists. The increase in the number of doctors being insufficient for the population even now and the shortage of specialists has led to a monopolistic situation where they can charge higher fees and get away with it.

The budgetary allocation for the health sector in the Budget 2002-2003 has been increased by Rs 790 million in which Rs 3.3 billion has been earmarked against the previous year's allocation of Rs 2.513 billion. The health policy this time round focuses on the preventive side, an attempt to shift from urban to rural areas and emphasis on mother and child health. Lady Health Workers are to be the prime movers of preventive health as is also the expanded programme of immunisation. The total number of Lady Health Workers is now to number nearly 65,000 and the outreach of the programme has been expanded to nearly 65 million people that is almost half the country's population. The coverage of the expanded programme of immunisation is to be increased from five per cent to 55 per cent.

Since the initiation of structural adjustment programmes, the very nature of the economy has altered as well as the overall impact on health status, health care and welfare in general. Moreover, under the conditionalities of the WB/IMF, phenomena such as rising unemployment, fall in per capita incomes and increasing poverty forms a lethal mix that prevents the poor from improving their health. Thus attempts such as the Social Action Programme initiated and later disbanded by the government can at the best of times have only a marginal impact.

The government's priorities have also been misplaced. Population control measures are part and parcel of conditionalities and popular with most donor agencies. This accentuated focus on family planning stems from the theory, now not so current, that burgeoning population is the root cause of poverty. Giving population control so much attention leads to eroding health expenditure allocation and also disadvantages the primary health care structure. (Bennet, 2001:59-60). Family planning programmes were initiated in Pakistan in the late fifties and since then to date enormous amounts have been spent on it with relatively little success. It is only of late that the annual population growth rate has been brought down to 2.16 per cent (*Economic Survey*, 2001-2002).

Emphasis has mostly been on contraceptive use while female morbidity is largely attributed as an outcome of high fertility and is more or less turned a blind eye to. It has to be recognised that maternal and child health, albeit a matter of reproductive health, the actual cause is invariably lack of medical care and poor living conditions which lead to infectious and parasitic diseases. In the final analysis simply expanding the supply of contraceptives with little or no consideration of demand factors and low socio economic development will only marginally impact on fertility. The key is to invest in human development capital such as housing, transport,

safe drinking water supply, and sanitation and last but not least, accessibility to health services. (Bennet, 2001:60-1).

Taxes and Drugs

The provision of essential drugs is not necessarily an expensive exercise if handled with care and in a proper manner as part of a national policy. Adequate supply for all can be ensured at an affordable cost.

Yet it is one of the ironies of fate that in March 2002, the government seriously contemplated imposing a tax on medicines so as to fulfill an IMF conditionality. It was intended to be a 15 per cent General Sales Tax on all medicines and drugs that consequently was opposed by all and sundry, be it the pharmaceutical industry, the drug trade and by consumers themselves. As it is, the price of medicines is comparatively higher in Pakistan in general than neighbouring India, and threatens to drive out the poor from the health care system, but the middle class is badly affected as well.

In the face of opposition from the public, the government decided in late March to withdraw the GST on life saving drugs. The GST on other medicines remained intact, because the government justified its actions on the grounds that it cannot be avoided due to certain `compulsions', a reference to IMF conditionalities.

In the first instance the 15% GST had been in place in any case, but exemptions were allowed. It was proposed to remove these exemptions. Oddly enough, the buyer paid the tax levied on the seller.

It was hoped that the GST on medicines would generate a total revenue of Rs 4 billion, and that would supposedly be used to provide health care facilities for the poor. Knowing Pakistan's track record, the more likely outcome would be that of corruption.

Tragically, drug prices have been steadily increasing over the last several years. Not just the pharmaceutical companies and the health bureaucracy, but the governments as well have allowed such increases. In the years to come, it is likely that all subsidies, controls and exemptions will be removed under the philosophy of deregulation. The future of health care for the poor therefore decidedly looks bleak, unless something drastic is undertaken to remedy the situation.

Much to everyone's surprise, the 15 per cent GST was withdrawn on all kinds of medicines in August 2002. The reason being as stated by the Finance Minister that it was `causing hardship' to a number of people. It was admitted that it had been a mistake and that the government had decided to rectify it. However, what will happen in the years to come is anyone's guess.

In a sense global economic recessions such as that of the 1980s have their silver lining apart from their dark side in that they compel nations to critically evaluate their national priorities. Such a critical perception is imperative in the health sector. Under any circumstance health expenditures should be regarded as investment that improves the quality of human capital. And without political will and leadership, it is not possible to ensure `adjustment with a human face'.

Econometric Analysis

Our hypothesis was that structural adjustment loans have not played a significant role in any sense in improving the health status of the population, the infant mortality rates in particular. In order to test this hypothesis, regression analysis was used.

Infant mortality and child mortality rates are the basic indicators of the health status of the population. In Pakistan, infant and child mortality rates have declined over the recent past, but are still high even when compared to other South Asian countries, except Bhutan. Regression analysis was carried out using OLS techniques to discover the relationship between the infant mortality rate and variables such as per capita income, government expenditure on health, remittances, and structural adjustment loans received over the period 1976-77 to 2000-2001.

As the data is time series, the stationarity of the data was checked for all the variables and found that the data was non-stationary and had a trend for per capita income and expenditure on health. In order to remedy the problem, the data was differenced by one period to make the series stationary. The variables were found to be co integrated so the original data was regressed.

The results are given below:

i = 71.02 + 0.01py +1.8r −0.16eh − 0.17l   ....(1)

t = (9.93)   (3.78) (0.55) (-4.06)   (-2.23)

$R^2 = 0.7$ DW =2.09   F = 11.6

where

i = infant mortality

py = per capita income

r = remittances

eh = govt expenditure on health

1 = structural adjustment loans

Per capita income is taken as a proxy for personal household expenditures on health. (Zaidi, 1997: 7) Infant mortality is positively related to per capita income. It is negatively related to government expenditure on health and conditional loans. Contrary to the World Bank view, public sector health expenditures prove to be very effective in reducing the infant mortality rate. The fact that there is a positive relationship between remittances and infant mortality is probably because the money from remittances was not utilised for health care expenses but on consumer durable items instead.

The Durbin Watson statistic shows no problem of autocorrelation. The value of R^2 is also quite high, indicating that the model is good. The t values show that our explanatory variables except remittances are statistically significant.

Another regression was run for life expectancy at birth. The explanatory variables were per capita income, government expenditure on health, remittances and structural adjustment loans. The data for life expectancy at birth, per capita income and expenditure on health was non stationary so the differenced data was used. The data used in this econometric analysis is given in Tables 1 and 2. The results were as follows:

Leab = 57.56 − 0.0046 py + .36 eh - 0.075r - 0.0011............. (2)

t= (32.6) (-.67) (3.7) (-0.09) (-0.55)

$R^2 = .76$

DW = 2.8

Where:

Leab = life expectancy at birth

py = per capita income

eh = expenditure on health

R = remittances

L = structural adjustment loans

There is no problem of autocorrelation. The parameters of income and expenditure on health are statistically significant.

The model shows that there is a negative relationship between per capita income and life expectancy. In other words, although average income has gone up, life expectancy decreases. This is explained by Khan (1999) that if income distribution is very uneven and the growth process neutral to or accentuating inequalities, higher per capita GDP does not necessarily result in improved health indicators. A nominal increase in income of the poor leads to the likelihood that this income group will spend more on food, clothing and shelter rather than the health of themselves and their families. Hence the anomaly.

There is a positive relationship between government expenditure on health and life expectancy at birth. It simply proves the point, contrary to donor thinking that public expenditure on health has a positive impact on the health status of the population.

In the regression analysis regressions on life expectancy and infant mortality against services/facilities available for the poor, for instance basic health units, doctors per head of the population, number of lady health visitors etc. were also run. It was felt that such variables are more likely to impact on the health status of the poor. However, it was found to be statistically insignificant and the relationships between the parameters and the dependent variable were negative. This can be explained by the fact that for the poor, nutrition levels and quality of services are more important factors that determine the life expectancy and overall health status of the poor.

The data indicates that infant mortality has gone down from 115 per thousand people in 1983-4 to 85 per thousand in 2001-2 and life expectancy over time has increased from 53 in 1977-8 to 63 in 2001-2, but

compared to other Asian countries the improvements have not been good (See Table 3).

Usually there is a positive correlation between economic growth and human development indicators, including health status of the population. But with economic growth decelerating and virtually coming to a standstill, the situation is far worse with the conditions imposed by structural adjustment programmes. It is apparent that privatisation, cuts in government spending, `getting prices rights' and more market oriented poilices, have all adversely affected the health of the people. The advocates of structural adjustment programmes including its spokespersons in the government insist on the fact that `free markets' will one fine day nurture development in Third World countries. This totally goes against the realities on the ground in these economies. With the poor becoming poorer the situation will only be further exacerbated. Under such circumstances one simply questions the state's pronouncements for promoting health and making health care more affordable and accessible. People–centred development, self reliant growth and an equitable distribution of resources can only flourish when there is a paradigmatic policy change from efficiency and competitiveness to employment creation and poverty alleviation.

Table-1: Time Series Data on Variables Regressed

Time series	Infant Mortality Per 1000 persons	Life Expectancy at birth (per 1000)	Population per Doctor	Government exp. on Health (Rs. M.)
1976-77	87	59	11133	979.2
1977-78	100	53	10278	1070.6
1978-79	95	59	9526	1210.6
1979-80	95	56	8695	1378.9
1980-81	100	55	7549	1736.8
1981-82	110	56	6101	2030.1
1982-83	112	56	5087	2390
1983-84	115	57	4308	3090
1984-85	126.7	57	3605	3372.1
1985-86	115.9	57	3160	4275.3
1986-87	105.6	59	2865	5852
1987-88	103.9	58	2594	7178.4
1988-89	107.7	58	2396	7321
1989-90	106.7	58	2228	7218
1990-91	107.7	59	2082	7738
1991-92	107.7	54.3	1993	8531.6
1992-93	108	60	1892	9604.6
1993-94	104.7	60.2	1848	10555
1994-95	101.8	59.3	1803	12090.7
1995-96	101.8	61	1455	16354.9
1996-97	101.8	62.4	1689	18342.8
1997-98	84.4	62	1636	19663.5
1998-99	85.5	63.2	1590	20807.7
1999-2000	89.8	63	1578	22077
2000-2001	90	62.5	1529	24281
2001-2002	85	63	1516	25405

Source: *Economic Survey,* Various Issues, Government of Pakistan

Table-2: Time Series Data on Variables Regressed

Time series	Workers Remittances (U.S. $ b.)	Per Capita Income (1980-81)	IMF Structural Adjustment Loans
1976-77	0.58	1790	0
1977-78	1.15	2117	48
1978-79	1.40	2300	71
1979-80	1.74	2648	157.4
1980-81	2.11	3326	16.1
1981-82	2.22	3441	349
1982-83	2.89	3570	730
1983-84	2.74	3700	80
1984-85	2.44	3819	0
1985-86	2.59	3900	0
1986-87	2.28	4067	0
1987-88	2.01	4264	0
1988-89	1.90	4358	194.48
1989-90	1.94	4432	273.15
1990-91	1.85	4552	150
1991-92	1.47	4826	0
1992-93	1.56	4778	0
1993-94	1.44	4813	88
1994-95	1.87	4951	60
1995-96	1.46	5016	80.55
1996-97	1.40	4927	101.10
1997-98	1.49	4924	250
1998-99	1.06	4992	350
1999-2000	0.98	5073	0
2000-2001	1.09	5098	350
2001-2002	1.87	5294	0

Source: *Economic Survey*, Various Issues, Government of Pakistan

Table 3: Selected Health Indicators 1999

	Life Expectancy at Birth (years)	Infant Mortality rate per 1000	Population Growth (annual percent)
Pakistan	62.5	89.8	2.4
India	63.2	70.9	1.8
Bangladesh	60.7	61.2	1.6
Sri Lanka	73.5	15.4	1.1
Nepal	58.2	75.4	2.3
Bhutan	61.5	58.8	2.9
Thailand	68.6	28.3	0.8
Malaysia	72.3	7.9	2.4
Indonesia	65.7	41.9	1.6
China	70.1	30.2	0.9

World Development Indicators, July 2000

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Changes in Returns to Education in Pakistan: 1990-2002

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Abstract

This paper examines the trends in marginal rates of return to various levels of education for paid employees and how rewards for additional investments at a particular level of education has changed over time. Although the findings are indicative of increasing returns at different educational levels (excluding Graduation) over the years, we find no evidence that additional investments at successive levels bring consistently higher returns as highlighted by certain previous studies in Pakistan. The changes in returns at the primary and pre secondary levels have been found to be miniscule, taking the time span into consideration. The paper has also examined the returns to education between males and females and across urban and rural areas in view of the large disparities that exist by gender and region. Our findings indicate that although the wage structure may be biased in favour of males, additional investments made in female education accrue higher returns in comparison to males. Moreover, higher education is better rewarded in the urban areas whereas medium of instruction is a significant indicator of earning differentials in the labour market.

1. Introduction

Since the pioneering work on the productivity of workers vis-à-vis human capital, Becker (1964) and Mincer (1974), have paved the way for numerous studies examining different aspects of earning differentials in the labour market[1] (see for example Psacharopoulos and Ying Chu Ng 1992; Ryoo, J. et al 1993; Psacharopoulos 1994; Alba-Ramirez and Segundo 1995; Weisberg 1995; Stanovnik 1997; Bartolo 1999; Arabsheibani and Manfor 2000). The Mincer equation to estimate private returns to education has

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[1] These studies have focused on two major aspects: rates of return to education and age-earnings profile. The first approach examines the returns to education by attainment of schooling, experience and other variables. The second approach focuses on the relationship between earnings and age i.e. how earnings profile vary according to age cohorts.

become a 'showcase' in economics, a theoretical model quite amenable to empirical verification. However, in Pakistan there is a severe lack of literature on the subject.[2] Moreover, the scope of previous work has been mainly confined to estimating static returns to education for specific years[3] (see for example Shabbir and Khan 1991; Nasir 2002). Since returns to education tend to fluctuate due to changes in earnings and labour market dynamics over the years, the static approach does not refer to these fluctuations and may be a poor predictor not encompassing labour market developments.

The objective of this paper is to examine the changes in private rates of return to paid employees possessing different levels of human capital represented by education and empirically measured by levels of educational attainment over the period 1990-2002. The data used for the study has been acquired from the Pakistan Integrated Household Survey (PIHS) 1990-91 and 2001-02 published by the *Federal Bureau of Statistics*. Both surveys include information on the highest level of education completed and school starting age of individuals, which were missing in earlier surveys.[4] The paper also estimates differentials in marginal returns to education by gender and region for 2001-02.

The paper has been organised in six sections including the present one. In section 2, the structure and profile of education has been briefly discussed. It also includes background information on the labour market in Pakistan. Section 3 presents information on data, the theoretical model and research design of the study. Section 4 examines the changes in returns over time. Section 5 presents empirical findings of returns across gender and regions for 2001-02. The last section concludes and provides certain policy recommendations.

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[2] The reason seems to be the inadequacy of relevant data as most micro-level surveys conducted in the country lacked appropriate information to estimate the Mincer equation (see Shabbir 1994). For instance, these surveys do not report individual schooling years as a continuous variable but rather as a discrete response variable with responses such as Primary and Incomplete Middle, Middle and Incomplete Matric, Matric and Incomplete Intermediate and so forth. Therefore, most of the previous studies have estimated returns using discrete variables for different levels of education in Pakistan (see for example Guisinger et al. 1984; Khan and Irfan 1985; Ahmed et. al 1991; and Ashraf and Ashraf 1993a, 1996).

[3] The only exception is Ashraf and Ashraf (1993b), which has estimated earning differentials by gender for 1979 and 1985-86. However, these data sets are quite outdated.

[4] In addition, information on type of schools which individuals attended and the medium of instruction used in schools is also available in the two surveys.

2. Structure and Profile of Education and Labour Market in Pakistan

The education structure in Pakistan includes primary to professional level of education, which has been similar across all the four provinces. Primary education is for five years; middle or pre-secondary comprises three years and secondary or matriculation level includes ten years of schooling. After completion of secondary education, individuals have the option either of continuing two years of formal education leading to higher secondary school certificate (or intermediate level) or to enroll in a technical institution for a three years diploma programme. The higher secondary school is the gateway to either enrolling in professional colleges[5] or to continue two additional years of general education leading to Graduation. Those who complete their general education can pursue a Masters or Postgraduation degree from a university for two additional years. After completion of Postgraduation, individuals can proceed with an M.Phil and later PhD.

In public schools, lessons are mostly taught in Urdu, the national language, whereas English is learned as a second language. Since education is a provincial subject in Pakistan, in certain provinces local languages are also used as a medium of instruction in public schools at the primary, pre secondary and secondary levels. On the other hand, private schools predominantly use English as a medium of instruction and are generally considered as more quality oriented in terms of pedagogy, textbooks, and physical infrastructure.[6] At higher educational levels i.e. graduation, post graduation and professional education, the system is more or less uniform and the curriculum mostly taught in English.

The educational profile of Pakistan in the last ten years has somewhat improved. The national literacy rate has increased from 34.9 per cent in 1990 to 49 percent in 2001 with consistent improvements across gender.[7] Net enrollment rates which are significantly low in Pakistan have

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[5] After completion of higher secondary, the professional degree of engineering entails four years of education whereas medicine and law degrees require five years.
For our analysis, we have assumed that professional education entails five years of education after higher secondary.

[6] The role of the private sector in the provision of education basically emerged since the early 1980s. However its most significant growth has been witnessed since the 1990s when the sector started educational provision at virtually all levels of education including higher and professional education.

[7] In the last decade, the male literacy rate has increased from 36.8 per cent in 1990 to 61.3 percent in 2001. On the other hand, female literacy has improved from 22.4 per cent during the 1990s to 43.9 percent in 2001. However, these figures are still substantially low if compared to similar per-capita income countries in South Asia.

improved in marginal terms at the primary, pre secondary and secondary levels of education during 1990-2002. At the primary level, net enrollment increased from 33 per cent in 1990-91 to 37 per cent during 2001-02 whereas enrollments at the pre secondary and secondary level of education have improved from 19 and 17 per cent to 20 and 18 per cent respectively for the same time period. With marginal improvements in the country's educational profile, vast disparities in enrollments continue to exist across gender, regions and provinces. The inter-provincial budgetary allocations, inaccessibility of schools among regions, socio-economic factors and ethnic and cultural norms are certain factors responsible for existing educational disparities in the country (Sarmad *et al* 1988).   Particularly in the rural areas, the differences between net enrollments of boys and girls have been substantial at the primary, pre secondary, and secondary levels of education. Moreover, enrollments at the pre secondary and secondary levels of education in urban settings are twice as high compared to rural areas.[8]

2.1 Pakistan's Labour Market

The sectoral distribution of workers and labour force participation rates provide an overview of the structure of the labour market in Pakistan. Similar to other developing countries, Pakistan's labour market is dual in character possessing both flexibility and inflexibility in response to economic adjustments. The formal sector is less flexible and resists downward movements in wages and employment because even the unskilled workers in the sector are protected either by government regulations or trade union activities (Nasir 2001). The informal sector is more flexible and adaptive to economic changes and is characterised by its high labour intensity, low-technology orientation and human capital requirement. Hence, both labour productivity and wages are low in contrast to the formal sector. The informal sector, which has rapidly increased in the last decade, accounts for 65.8 per cent of the non-agriculture employed labour force in 1999-2000.[9]

In Pakistan, the labour force participation rate is considerably low and has declined in the last decade from 43.16 per cent in 1990-91 to 42.8 per cent in 1999-2000. While male participation rates declined from 71.2 per cent in 1990-91 to 70.4 per cent in 1999-2000, participation rates of women have increased from 12.76 per cent to 13.7 per cent in 1999-2000. Though female labour force participation is significantly low in Pakistan, the trend however indicates that substitution of employment has taken place in

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[8] For details, see PIHS, Round 4: 2001-02.
[9] Region-wise, the sector accounts for 68 and 63.4 per cent of the employed share in rural and urban settings respectively.

the labour market indicating increased employment opportunities for women. Since there has been no nationally representative wage level data available in Pakistan, Chart 1 presents PIHS derived estimates indicating that female wages are lower than those of males, irrespective of similar levels of education. The reason appears to be the concentration of women in occupations that are structurally low paying rather than any wage discrimination against them in the labour market.[10]

Chart 1: Average Yearly Earnings by Gender and Levels of Education (2001-02)
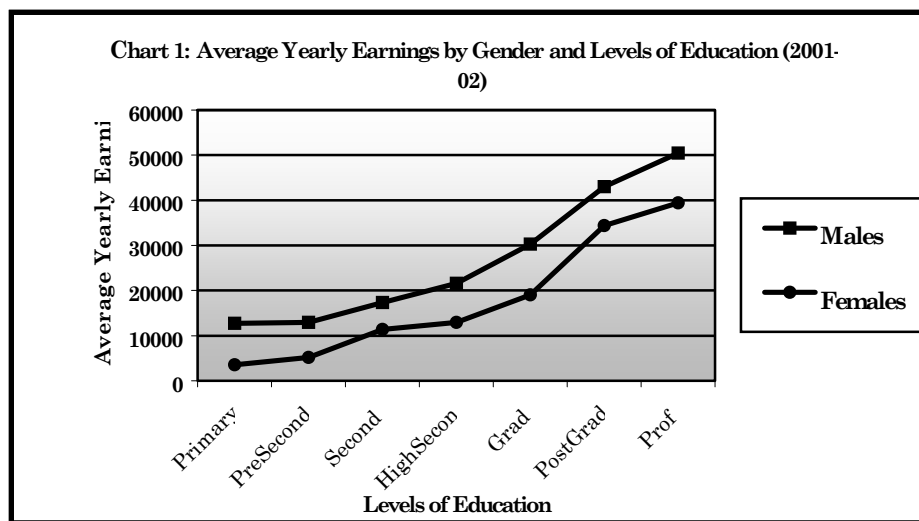
Source: PIHS 2001-02.

3. Data Description, Model and Research Design

The PIHS 1990-91 comprises 4,800 households with a sample size of 36,071 individuals whereas PIHS 2001-02 consists of 16,812 households and a sample size of 116,724 individuals. For our analysis, the sample has been confined to paid employees and salaried persons of 15-60 years, the working age in Pakistan. The rationale for restricting the sample was that earnings of paid employees closely reflect the productivity of workers relative to other categories of workers in the surveys. In addition, this sample specification also implies that child workers and those who work after retirement are excluded from the analysis for similar reasons. After cleaning the data, the sample size of paid employees comes to 3,708 in 1990-91 of which 3,378

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[10] This specifically refers to formal sector employment. In the informal economy, it may be presumed that female wages are lower than those of males because of labour market discrimination against them based on findings that since women demand lower wages, there is a greater tendency to hire them (for details see Kazi 1999).

were males and 330 females. For 2001-02, the sample consists of 12,814 individuals, 10,842 males and 1,972 females.

Although, the estimated potential experience used by Mincer (1974) is a good proxy for actual experience in the United States because schooling starts at a uniform age of six years, however in Pakistan, this assumption does not hold because of variations in age when schooling starts.[11] Moreover, Mincer's method of calculating potential experience becomes inappropriate for our analysis in cases where an individual's completed years of schooling is significantly low in comparison to the individual's age. This method calculates a fairly high potential experience unfeasible in Pakistan's labour market for salaried workers.[12] To correct the problem, two separate methods have been formulated. For wage earners having less than secondary schooling, potential experience has been calculated as – age of individual minus 15 – which assumes that the paid employee has entered the job market at the age of 15 years. On the other hand, individuals with a minimum of secondary level of education, the potential experience is measured as – age of individual minus total years spent in school minus age at which schooling started.

Descriptive statistics of the two samples are provided in Table 1 (Annexures). There has been no significant difference in mean years of schooling (including all levels) over the years indicating that educational attainment has not improved much since 1990-91. From an average of 5 years, it has slightly increased to 5.33 years in 2001-02. Likewise, mean experience of individuals has increased in marginal terms from 16.5 years (1990-91) to 17 years (2001-02). Average nominal wage of an individual has increased from Rs. 19,832 per annum in 1990-91 to Rs. 34, 367 per annum in 2001-02. More than 60 per cent of the sample in 1990-91 belongs to urban areas compared to 49 per cent in 2001-02. The proportion of private school graduates in the sample is a mere 2 per cent which has remained unchanged since 1990-91. Individuals who have graduated from English medium institutions have increased slightly in 2001-02.

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[11] In the urban areas of Pakistan, schooling usually starts at the age of three years whereas in the rural settings, the school starting age ranges from 5-7 years.

[12] For example, if a person is fifty years of age, has spent three years in school and was four years of age when his schooling started, the potential work experience of this particular individual comes to forty seven years. For regular wage employees and salaried persons whose retirement age is sixty years, this is a substantially high level of potential experience.

3.1 The Theoretical Model

The extended form of Mincer (1974) has been applied to estimate returns for different educational levels presented as

$lnY = \beta_0 + \beta_1 Prim + \beta_2 PreSecond + \beta_3 Second + \beta_4 HiSecond$

$+ \beta_5 Grad + \beta_6 PGrad + \beta_7 Prof + \beta_8 X + \beta_9 (X)^2 + \beta_{10} URBAN + \beta_{11} MALE$

$+ \beta_{12} PRIVATE + \beta_{13} ENGLISH + \beta_{14} SINDH + \beta_{15} NWFP + \beta_{16} BALOCH + u_i$ ………………
(i)

Where *lnY* is the natural log of yearly earnings, β_1 to β_7 are the estimated coefficients from primary to professional level of education. β_8 estimates returns to potential experience whereas β_9 captures the non-linearity in the experience-earnings profile. β_{10} is the coefficient of discrete variable '*URBAN*', indicating if an individual belongs to the urban area, β_{11} captures the effect by Gender, β_{12} is the coefficient of discrete variable *PRIVATE* if an individual has graduated from a private school and β_{13} is the coefficient for medium of instruction. β_{14} to β_{16} measures the provincial effect by discrete variables, Punjab being the excluded category.

The estimated coefficients of levels of education obtained from equation *(i)* enable us to calculate marginal rates of return for each additional completed level of education as estimated by Duraisamy (2000) in the case of India, where the education structure is somewhat similar to Pakistan.

$$R_k = (\beta_k - \beta_{k-1})/s_K$$ ……………………………………………………………… (ii)

Where β_k is the coefficient value of K_{th} level of education, β_{k-1} is the coefficient of previous level of education to *K* and S_K is the additional years of schooling spent to complete *Kth* level of schooling. Description of education levels has been presented in Table 2 in the Annexures.

4. Change in Returns to Education: 1990-2002

The change in marginal rates of return to levels of education in Pakistan have been presented in Table 4 in the Annexures calculated by

using *(ii)*. The results indicate that excluding Graduation, returns at all levels of education have increased since 1990. However, there has been no evidence that attainment of an additional level of education results in consistently increased growth in earnings.

At the primary and pre secondary levels, marginal returns are substantially low for both time periods with a minuscule change over the years. At the primary level, private returns have increased by only 1.14 percentage points whereas at the pre secondary level returns increased by a mere 0.03 percentage points in 2001-02 compared to 1990-91. These results suggest that attainment of five years of basic education makes an insignificant difference in earnings compared to illiterates and completion of pre secondary or middle level certification have little returns in comparison to primary education.

At the secondary level, estimated returns for both time periods are significantly high compared to pre secondary increasing from 11.3 per cent in 1990-91 to 13.4 per cent in 2001-02. However, at the higher secondary level, growth in earnings has been found to be less than that for secondary for both time periods with increase in marginal returns by 3.35 percentage points. Importantly Graduation is the only category where returns have declined by 3 percentage points, although attainment of Graduation results in 15.6 per cent growth in earnings compared to higher secondary education in 2001-02. The most marked change has been observed at the postgraduate level where returns have more than doubled from around 7 per cent (1990-91) to 14.6 per cent (2001-02). At the professional level, the findings indicate a minuscule change in returns of 0.86 percentage points in 2001-02 suggesting that general education at higher levels is more rewarding than professional education.

The empirical results by region confirm the *a priori* expectation that returns in urban areas are higher than those in rural areas and over time the rural-urban difference has increased significantly, indicated by the positive and significant coefficient value. Likewise, earning differential between males and females has also increased during this time, which is indicative of the fact that males have higher wages than females for reasons mentioned earlier.

Rate of returns to private schooling show a positive and significant impact of quality of schooling on individual earnings. The higher coefficient value of private institutions in the later period indicates that returns to private education compared to the public sector have increased enormously. Likewise, the positive and significant sign of English as a medium of instruction reveals

that the English language is a significant indicator of earning differential in Pakistan's labour market; however, the relatively small coefficient value in 2001-02 implies that this difference has reduced over the years.

The dummies used to capture the differences by provinces provides a surprising result. Earnings in Balochistan, the most remote province in Pakistan, have been found to be greater than those in Sindh, NWFP and the Punjab. This is a sample selection error in the survey data not reflecting the labour market dynamics in Balochistan province. However, other results confirm our expectations pertaining to provincial differences.

5. Empirical Results by Gender and Region 2001-02

5.1 Returns to Education by Gender

Private returns to levels of education for 2001-02 by gender have been presented in Table 6 (see Annexures). Interestingly, marginal returns to additional levels of female education have been found to be significantly higher than those to males at all levels of education. This is contrary to the earlier findings which suggest that additional levels of male education accrue better rewards than those of female education (see Nasir 2002). Although female earnings are low compared to those of males irrespective of the same educational levels, our results suggest that additional investments made in female education have higher pecuniary rewards. The returns at the primary level of education for males have been found to be approximately 2 per cent compared to 4.3 per cent for females. These estimates corroborate the earlier finding that returns to five years of basic schooling are significantly low. At the middle level, a significant difference has been with a differential of 12.5 percentage points. However, at the secondary level, we observe the maximum difference across gender where returns to female education are approximately three times higher than those to males. Likewise, at higher levels of education including graduation, post graduation and professional education, returns for females have been found to be substantially higher. The reason for higher female returns seems to be their low participation rates in the workforce. Contrary to educational returns, male experience is more highly rewarded because of foregone time spent in reproductive responsibilities. Moreover, the differentials in female earnings across regions have been estimated to be higher than those of males i.e. females in urban areas earn significantly more than those residing in rural areas compared to regional differentials for males. Likewise, returns to private schooling by gender indicate that females have higher returns than males graduated from private schools. Importantly, in the case of females, the medium of instruction has been found to be insignificant.

5.2. Returns to Education by Region

The results by region find no statistical difference between primary school graduates and urban illiterates whereas marginal returns in rural areas are 4.3 per cent at the same level. (See Table 8 in Annexures). Interestingly, marginal returns at the secondary level of education in rural areas have been found to be twice as high as compared to urban areas. At higher educational levels i.e. from higher secondary to professional education, returns have been found to be greater in urban areas compared to rural areas as expected because of more skill demanding jobs in cities. Private education is significant for both urban and rural areas whereas medium of instruction is only significant in the rural areas.

6. Conclusion

The findings of the paper indicate that each additional level of educational attainment does not result in consistently higher returns as indicated by previous studies of educational returns in Pakistan. The insignificant increase in marginal returns at the primary and secondary levels signifies that lower human capital accumulation vis-à-vis education does not provide sufficiently high pecuniary benefits compared to illiterates and primary educated respectively. It raises a serious concern because of low enrollments and high dropout rates at the primary level in Pakistan. Therefore, concerted efforts are required to universalise primary education with incentives to promote investments in education at higher levels. Higher education is better rewarded in urban areas because of demand-side factors.

Female education is more rewarding compared to male education implying that additional investments in female education yield higher returns. Furthermore, positive externalities associated with female education develop a strong case of making higher investments in female education both at the macro and micro levels. Moreover, higher returns have been observed for the private sector signifying the need to enhance the quality component of the public sector. As a result of resource constraints, the quality of public sector education has been consistently declining and requires substantial overhauling with reference to curriculum, pedagogy, textbooks and other quality-oriented innovations.

ANNEXURES:

Table-1: Mean Sample Characteristics

	1990-91		2001-02	
	Mean	**SD**	**Mean**	**SD**
WAGE	19832.19	24531.7	34367.73	33848.50
EXPERIENCE	16.5	11.67	17.0	11.59
AGE	31.99	11.67	32.65	11.65
SCHOOLING	4.97	5.04	5.33	5.32
MALE	0.91	0.28	0.85	0.36
PRIVATE	0.02	0.14	0.02	0.15
URBAN	0.61	0.49	0.49	0.50
ENGLISH	0.02	0.14	0.03	0.17
PUNJAB	0.48	0.49	0.38	0.48
SINDH	0.30	0.46	0.32	0.47
NWFP	0.15	0.36	0.14	0.34
BALOCHISTAN	0.07	0.26	0.16	0.37
N		3705		12814

Source: *Pakistan Integrated Household Survey*

Table-2: Description of Education Levels

Levels	Definition
Primary	Five and greater but less than eight years of schooling
Pre Secondary	Eight and greater but less than ten years of schooling
Secondary	Ten years and greater but less than twelve years of schooling
Higher Secondary	Twelve and greater but less than fourteen years of schooling
Graduation	Fourteen and greater but less than sixteen years of schooling
Post graduation	Sixteen years of schooling
Professional	Years spent in Medicine, Engineering, and Law etc.

Table 3: OLS Estimates of Wage Equation, 1990-91 and 2001-02

	1990-91		2001-02	
	Coeffi.	**t-value**	**Coeffi.**	**t-value**
CONSTANT	8.023	172.352	7.577	298.333
EXP	0.053	16.935	0.068	33.602
EXP SQUARE	-0.0005	-13.238	-0.0011	-23.802
URBAN	0.128	5.962	0.295	21.479
MALE	0.862	23.547	1.419	75.828
PRIVATE SCHOOL	0.119	1.647[*]	0.234	5.00
ENGLISH MEDIUM	0.379	4.779	0.278	6.119
PRIMARY	0.104	2.684	0.161	6.654
PRE SECONDARY	0.174	5.754	0.240	11.305
SECONDARY	0.400	12.202	0.508	24.401
HIGHER SECONDARY	0.573	12.348	0.748	27.039
GRADUATION	0.947	19.950	1.060	35.387
POSTGRADUATION	1.085	13.496	1.352	35.571
PROFESSIONAL	1.174	10.140	1.392	19.278
SINDH	0.09	3.752	0.180	11.632
NWFP	-0.066	-2.163	0.032	1.544[**]
BALOCHISTAN	0.306	7.394	0.421	21.049
N		3704		12813
ADJUST R-SQUARE		0.354		0.530

* Significant at 0.10 level of significance

** Significant at 0.20 level of significance

Table 4: Trends in Returns to Education Levels 1990-2002

	1990-91	2001-02
PRIMARY	2.1	3.22
PRE SECONDARY	2.3	2.63
SECONDARY	11.3	13.4
HIGHER SECONDARY	8.7	12.0
GRADUATION	18.7	15.6
POSTGRADUATION	6.9	14.8
PROFESSIONAL	12.0	12.9

Calculated from Table 3

Table-5: OLS Estimates of Wage Equation by Gender, 2001-02

	MALES		FEMALES	
	Coeffi.	**t-value**	**Coeffi.**	**t-value**
CONSTANT	9.095	463.120	7.248	91.130
EXP	0.074	41.122	0.047	5.787
EXP SQUARE	-0.0013	-30.111	-0.0006	-2.933
URBAN	0.216	17.870	0.585	10.407
PRIVATE SCHOOL	0.150	3.617	0.290	1.595[*]
ENGLISH MEDIUM	0.299	7.526	0.156	0.839
PRIMARY	0.095	4.568	0.217	1.839[*]
PRE SECONDARY	0.162	9.084	0.659	5.109
SECONDARY	0.377	21.055	1.273	13.044
HIGHER SECONDARY	0.571	23.620	1.515	13.028
GRADUATION	0.837	31.300	1.948	17.391
POSTGRADUATION	1.077	32.005	2.524	17.272
PROFESSIONAL	1.071	16.671	2.630	9.706
SINDH	0.168	11.804	0.256	4.498
NWFP	-0.081	-4.479	0.552	5.403
BALOCHISTAN	0.356	20.734	0.574	5.949
N		10841		1971
ADJUST R-SQUARE		0.410		0.446

* Significant at 0.2 level of significance

Table-6 : Marginal Returns to Levels of Education by Gender, 2001-02

	Males	**Females**
PRIMARY	1.9	4.3
PRE SECONDARY	2.2	14.7
SECONDARY	10.8	19.9
HIGHER SECONDARY	9.7	12.1
GRADUATION	13.3	21.6
POSTGRADUATION	12.0	28.8
PROFESSIONAL	10.0	22.3

Calculated from Table 5

Table-7: OLS Estimates of Wage Equation by Region, 2001-02

	Urban		Rural	
	Coeffi.	t-value	Coeffi.	t-value
CONSTANT	8.12	227.91	7.371	223.141
EXP	0.077	26.525	0.058	21.232
EXP SQUARE	-0.0012	-18.02	-0.001	-15.798
MALE	1.087	42.073	1.764	67.123
PRIVATE SCHOOL	0.199	3.994	0.395	3.063
ENGLISH MEDIUM	0.303	6.059	0.075	0.694[*]
PRIMARY	0.0458	1.269[*]	0.217	6.892
PRE SECONDARY	0.205	7.192	0.251	8.172
SECONDARY	0.388	13.478	0.600	20.569
HIGHER SECONDARY	0.696	19.488	0.753	17.696
GRADUATION	1.023	27.787	0.996	19.697
POSTGRADUATION	1.328	29.224	1.103	6.068
PROFESSIONAL	1.360	17.370	1.213	17.812
SINDH	0.174	8.017	0.189	8.460
NWFP	-0.039	-1.281[*]	0.0578	2.035
BALOCHISTAN	0.269	8.825	0.491	18.993
N		6248		6564
ADJUST R-SQUARE		0.485		0.567

Significant at 0.05 level except those noted by *

Table-8: Marginal Returns to Levels of Education by Region, 2001-02

	Urban	Rural
PRIMARY	0.9	4.3
PRE SECONDARY	5.3	1.1
SECONDARY	9.2	17.5
HIGHER SECONDARY	15.4	7.7
GRADUATION	16.4	12.2
POSTGRADUATION	15.3	5.4
PROFESSIONAL	13.3	9.2

Calculated From Table 7

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Determinants of Schooling in Rural Areas of Pakistan

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Abstract

The twin problems of low school enrolment and high gender disparity have widely been addressed in the literature. In this paper we investigate the determinants of schooling of children overall and separately for boys and girls using primary data of rural households. The contribution of this paper lies in integrating the child schooling decisions of the households by rigorous econometric analysis.

The empirical estimates based on the model point to certain findings. The first enrolment of children in schools is delayed and it is more severe for girls. There exists gender disparity in children's schooling. The head of the household education significantly increases the probability of overall children's schooling. It has a greater effect on boy's schooling and does not matter in girl's schooling. The head of household income has a slight impact on overall children's enrolment but for girls it is significantly higher than boys. Parental education also significantly increases the probability of child's schooling. Mother's education exerts a much stronger effect of increasing school enrolment. The estimates of the gender specific determinants suggest that maternal education increases the likelihood of girl's schooling enrolment than of boys. Higher per capita income of households and ownership of assets by households increases the probability of school attendance. Family size and household composition also plays a significant role. Children from large families are more likely to go to school but children from households with a large number of children (up to 15 years) are less likely to go to school. Similarly, children from households with larger number of children (in the age group of 5-15) are less likely to go to school. It is sibling size (in both age groups) which hinders the schooling of children, not the family size.

Introduction

In the economic literature, human capital is considered as the engine of growth [see, Romer 1990; Becker *et. al.* 1990]. Barro [1991]

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found that human capital indicated by primary and secondary school enrolment had a positive impact on economic growth. Abbas [2000] provided evidence for Pakistan to support Romer's [1990] model of endogenous growth that larger stock of human capital proxied by primary school enrolment rate may enable an economy to make greater investment in physical capital, which in turn leads to greater growth.

Easterly [2001] indicated that Pakistan's lagging economic performance is primarily due to the poor quality of its human resources. A study on agricultural productivity in Pakistan shows that four years of schooling on average increases the output of farmers by about 8 percent. A 10 percent increase in male literacy in Pakistan causes the greatest increase (2.7 percent) in agricultural productivity. On the other hand schooling is presumed to be a powerful weapon in the immediate battle against child labour [UNICEF 1997]. It is widely seen as critical to poverty alleviation. It is particularly important when complex new technologies and market options become available [Rosenzweig 1995].

Pakistan remains a country where most education plans and policies have failed to make any significant contribution to increasing literacy. The largest donor funded programme-Social Action Program (SAP), which was focused particularly on schooling in rural areas, specifically female schooling, failed to achieve its objectives with poor records of disbursement and implementation [CRPRID 2002]. That is why, of about 20 million population in the 5-9 years cohort, 6 million are out of school. In Punjab 50 percent of the children in the same age cohort are out of school, of which 54 percent are girls and 46 percent are boys. Similarly, of 20 million children in the cohort of 10-14 years, which covers middle and secondary level of education, 120 million children are out of school.

The net enrolment rate at school level is shown in Table 1.

Table 1: Net Primary and Secondary Enrolment Rates in Pakistan

	Net Primary Enrolment Rates (Percent)			Net Secondary Enrolment Rates (Percent)		
	Male	**Female**	**Overall**	**Male**	**Female**	**Overall**
Urban	68.5	64.6	66.5	46.7	47.4	47.0
Rural	53.6	36.4	45.2	34.9	15.8	25.0
Overall	57.2	43.6	50.5	38.3	25.1	31.9

The state has contributed to a high rate of illiteracy. Currently, the literacy rate is estimated to be 45 percent. That is 55 percent or 80 million

young people and adults (10+ years) are illiterate, despite the fact that the estimate of literacy is based on the definition of "one who can read a newspaper and write a simple letter". Moreover, literacy is not based on testing while it is a recorded response to a set of questions, so an upward bias in the estimation is expected [CRPRID 2002].

The low enrolment rate at primary and secondary level has resulted in an extremely low level of participation at the university level, i.e. only 3 percent, which is a matter of great concern. For the East Asian Countries the university level participation rate is more than 30 percent, which is considered as the base for research and advance technology.

The schooling enrolment in rural areas as compared to urban areas is much lower in Pakistan. The net enrolment rate in rural areas is 23 percentage points less at the primary level of education and 22 percentage points at the secondary level of education.

The determinants of schooling in the context of developing countries have been examined in several studies [see, Behrman and Wolfe 1984; Deolalikar 1995; Lavy 1996; Behrman and Knowles 1999]. Some studies analysed the same for the rural areas of Pakistan [see, for instance, Gazdar 1999; Sathar and Lloyd 1993; Sawada and Lokshin 2000]. On the supply side, the non-availability of public sector schools and teachers, poor physical infrastructure of schools, non-accessibility of schools, ghost schools, low social and financial status of school teachers, gender disparity in the provision of schooling facilities, regional disparity, comparatively less availability of private schools, are prominent. For example, in the rural areas of Pakistan 27 percent of the schools are more than a kilometer away from student's residence; a rural child in Pakistan is poorer than an urban child [Ray 2001]; the annual budget allocation for education at the national level is very low [Abbas 2000], and there is inefficient use of public educational expenditures [Alderman *et. al.* 1996].

On the demand side of schooling, that is parents/head of household perspective, there are a number of reasons, i.e. low quality of education, irrelevant curriculum, high cost of education and the perception of education, etc.

The demand for schooling by households depends upon their perception about education, which is determined by the characteristics of children and household. To analyse the demand side determinants of schooling concerned with households is the focus of the present study.

Objectives

The objectives of the study are to analyse the demand side determinants of child's schooling in rural areas using primary data from two districts of Pakistan. The study probes the question of whether and to what extent child characteristics (birth-order, gender, and age), head of household and parent characteristics (gender, age, education, employment and income), and household characteristics (ownership of assets, per capita income of household, family size, number of children, number of infants and gender of older siblings) affect the school participation of children. Another concern of this paper is to estimate the gender specific determinants of the participation of children in schooling, so as to shed light on the causes of observed low school participation of girls. Based on the results, the study makes policy recommendations.

Collection of Data and Methodology

We use the primary data collected for the study. Cluster sample technique is adopted for the study. The sample of the study, i.e. District Pakpattan and Faisalabad are selected purposely, as a combination of these districts represents the average condition of the country owing to two reasons:

1. Pakpattan stands in the region of low literacy (with 30.2-45 percent literacy rate) in the age cohort of 10+ years while Faisalabad stands in the region of high literacy with 45-59.8 percent literacy rate [CRPRID 2002].

2. Ghaus *et. al.* [1996] ranked Pakpattan at number 50 and Faisalabad at number 8 of the 94 districts of Pakistan in terms of social indicators in Weighted Factor Score and at 76 and 6 in terms of Z-Score ranking respectively, while eleven indicators relating to education, health, and water supply were included.

The cluster of the sample represents the average conditions of the area of the sample. The households in the cluster consist of all income groups. The household survey was the basis of the collection of data on the currently school attending particulars of children. One thousand households from each district were surveyed.

To analyse the decision of the parents regarding child's schooling (in the cohort of 5-15 years) the probit model is used, on the assumption that:

P = f (bX)

Where P is the probability of the child going to school and included in the model as a dichotomous variable, i.e. whether the child goes to school or not, b is the vector of model parameter and contains the explanatory variables.

Three groups of explanatory variables are selected as determinants of schooling, i.e. child characteristics, head of household and parents characteristics, and household characteristics. The variables have been selected on the basis of previous relevant literature.

First the probit model for the full sample is estimated and then to highlight the possible gender effect, the sub sample for boys and girls separately follows.

The definition of dependent and explanatory variables used in the probit model are represented in Table 2.

Results and Discussion

The mean and standard deviation of explanatory variables are shown in Table 3. In parenthesis the standard deviation is shown. The probit results are shown in Table 4. The Table reports the probability derivative of the parameter estimates, computed at the mean of the explanatory variables. The derivatives show the percentage point change in probability for one unit increase at the mean of a given explanatory variable holding all other variables constant at the mean. In the parenthesis the t-statistics are shown. The second column shows the probability of going to school for all children. In the third column the probability of going to school for boys and in the last column that for girls is given.

Table 2: Definitions of Variables Used in The Probit Model

VARIABLES	DEFINITION
Dependent Variables	
P [Child goes to school]	• 1 if child goes to school, 0 otherwise
Independent Variables	
Child Characteristics	
Bord [Birth order of child]	• Birth order of child in his/her brothers and sisters
Cgen [Child's gender]	• 1 if child is male, 0 otherwise
Cage [Child's age]	• Child's age in completed years
Cagesq [Child's age squared]	• Child's age squared
Head of household and Parent Characteristics	
Hgen [Gender of Head of household]	• 1 if Head of household is male, 0 otherwise
Hage [Head of household's age]	• Head of household's age in completed years
Hagesq [Head of household's age squared]	• Head of household's age squared
Hedu [Head of the household's education]	• Head of the household's completed years of education
Hemp [Head of household's employment]	• 1 If Head of household is employed, 0 otherwise
Hy [Head of household's income]	• Head of household's income per month in Rupees
Fedu [Father's education]	• Father's education in completed years of education
Fy [Father's income]	• Father's income per month in Rupees
Medu [Mother's education]	• Mother's completed years of education
My [Mother's income]	• Mother's income per month in Rupees

Household Characteristics	
Asst [Household's ownership of assets]	• 1 if the household owns assets, 0 otherwise
Py [Per capita Income of Household]	• Household's per month per capita income in Rupees
Fmsiz [Household family size]	• Number of household members
Child 015	• Number of children ages 15 or less than 15 years in the household
Child 04	• Number of children ages 4 or less than 4 years in the household
Child515	• Number of children ages 5-15 years in the household
Sib 16	• Number of siblings ages 16 years or above in the household

Table 3: Summary Statistics of Variables (Mean and Standard Deviation)

Variables	Overall Children	Boys	Girls
Child Characteristics			
Bord	2.1718	2.0254	2.3421
	[1.2660]	[1.1858]	[1.3341]
Cgen	0.5877	-	-
	[0.4987]	-	-
Cage	9.9935	10.29	9.6469
	[3.1015]	[3.1308]	[3.03276]
Cagesq	109.48	115.70	102.24
	[62.5196]	[63.3891]	[60.7686]
Head of Household and Parent Characteristics			
Hgen	0.9749	0.9746	0.9753
	[0.0707]	[0.0729]	[0.06819]
Hage	42.5219	42.5334	42.5085
	[8.3274]	[8.4257]	[8.2180]
Hagesq	1877.41	1879.99	1874.40
	[748.13]	[759.14]	[735.69]
Hedu	5.7275	5.8181	5.62208
	[5.3031]	[5.2591]	[5.3560]

Hemp	0.9317	0.9278	0.9362
	[0.2523]	[0.2589]	[0.2445]
Hy	5219.75	5092.77	5368.23
	[6612.40]	[6301.86]	[6958.25]
Fedu	5.78	5.8302	5.7247
	[5.3167]	[5.2591]	[5.3771]
Fy	5219.75	5092.10	5358.05
	[6612.40]	[6302.20]	[6961.33]
Medu	3.0388	3.0842	2.98
	[4.8879]	[4.8767]	[4.9042]
My	502.48	447.06	566.95
	[1996.01]	[1462.17]	[2475.99]

Household Characteristics

Asst	0.82099	0.8355	0.8040
	[0.3835]	[0.3709]	[0.3972]
Py	972.96	935.66	1016.36
	[1517.68]	[1228.79]	[1796.28]
Fmsiz	7.3206	7.3101	7.3328
	[2.1539]	[2.2007]	[2.0998]
Child015	3.9130	3.8435	3.9937
	[1.7732]	[1.7610]	[1.7851]
Child04	0.5420	0.5361	0.5489
	[0.7889]	[0.7813]	[0.7983]
Child515	3.3759	3.3181	3.4432
	[1.5334]	[1.5148]	[1.5531]
Sib16	1.03595	1.0735	0.9922
	[1.5310]	[1.5553]	[1.5023]

Table 4: Probit Estimation of Schooling for Rural Children

Variables	Probability of Overall Children Going to School	Probability of Boys Going to School	Probability of Girls Going to School
Constant	-1.5014	-2.9690	0.0001
	[-4.9144]	[-1.1058]	[0.0121]
Child Characteristics			
Bord	-0.0039	0.0197	0.1251
	[-1.2291]**	[1.5657]**	[1.4613]**
Cgen	0.1635	-	-
	[5.53119]*	-	-
Cage	0.2305	0.5926	0.7184
	[7.4911]*	[2.5309]*	[1.3115]**
Cagesq	-0.0126	-0.0399	-0.0438
	[-8.1699]*	[-2.5650]*	[-2.0178]*
Head of Household and Parent Characteristics			
Hgen	-0.0598	-0.0072	-0.2101
	[-1.5196]**	[-0.0211]	[-0.2817]
Hage	-0.0398	-0.0033	-0.6043
	[-1.2938]**	[-1.3371]**	[-1.5105]**
Hagesq	0.0004	0.0004	9.3066
	[1.3362]**	[1.3611]**	[1.3109]**
Hedu	0.0817	0.5114	0.0000
	[-1.3443]**	[2.1767]*	[1.3136]*
Hemp	0.0272	-0.6028	-6.5401
	[1.3512]**	[-2.4020]*	[-0.4690]
Hy	0.0009	0.0004	0.1609
	[1.3350]**	[1.3819]**	[2.3170]**
Fedu	0.1065	0.6464	-0.0000
	[1.7554]*	[0.2233]	[-0.0118]
Fy	0.0020	-0.0044	-0.0012
	[-0.1406]	[-0.3680]	[-0.2924]
Medu	0.1197	0.0913	-0.3020
	[1.3848]**	[1.4010]**	[-1.4714]**
My	-0.0001	0.0010	2.1019

	[-2.3641]*	[0.4786]	[0.2531]
Household Characteristics			
Asst	0.0452	0.5369	5.4214
	[1.4172]*	[1.5763]*	[0.0164]
Py	0.0664	0.0913	-0.0081
	[1.6521]*	[1.4894]**	[-1.3241]**
Fmsiz	0.0186	-0.2770	2.3604
	[1.2882]**	[-0.9004]	[0.9481]
Child015	-0.0402	0.1305	-0.0439
	[-1.2916]**	[0.2446]	[-1.4247]**
Child04	0.0221	0.3951	-0.1789
	[0.6193]	[1.3407]*	[-2.2308]*
Child515	-0.0238	-0.0213	-0.0439
	[-1.6209]*	[-1.7251]*	[-1.6632]*
Sib6	-0.0023	0.02195	-0.0469
	[-0.1803]	[1.3702]**	[-2.0694]*
Log of Likelihood Function	-891.99	-451.18	-414.40
No of Observations	1891	1016	875
R-Squared	0.2943	0.3121	0.2770
Percent Correct Predictions	0.8609	0.7727	0.7651

* Indicates significant at 5 percent level and ** indicates significant at 10 percent level

Regarding school participation of children, it is generally perceived that children within the same household are treated differently according to their birth-order. But in the economic literature there is no consensus about whether birth order effects on school participation of children really exist, and if it exists, whether it is positive, negative or non-linear in form [Parish and Willis 1993]. There are two possible cases [Behrman and Taubman 1986]. The first probability is a negative birth order effect. As more children are born, the household resource constraint becomes severe and fewer resources are available per child. If the per child resource

shrinkage effect is dominant, the younger (high birth order) siblings will receive less education than other siblings. Alternatively, the resource competition effect might decline over time, since the household can accumulate assets and increase income over time. Moreover, the older children may enter the labour market, contributing to household resources. Therefore young children (high birth order) siblings could spend more years at school, that is the case of positive birth order effect. An economy of scale due to household-level public goods might be important as well, since young children can learn easily from the experience of their older siblings through home teaching. Having older siblings might promote the education of a younger child, rather than impede the education of that child, if the resource extension effect, scale economies, and externalities are greater than the competition effect. There is another explanation of positive birth order effect, that is children may be required to perform household chores and related tasks and older children are more likely to have to forgo some years of education instead of younger children in the family [see also, Sathar 1993; Kim *et. al.* 1998]. Kanbargi and Kulkarni [1991] found that in Karnatika (India) the older children are frequently withdrawn from school so that they can look after and pay for the schooling of younger siblings. This suggests that younger siblings have more probability of going to school. Similarly, when an adult in the family falls ill or dies, an older child may have to drop out from school and take the adult's place in the labour market [Kishnakumari 1985]. Our research suggests that birth order exists and more importantly it is negative for school decisions. The birth-order among his/her brothers and sisters shows that the younger brothers and sisters have lower probability of going to school. This may be due to a resource constraint but another more likely explanation may be the delayed enrolment of children in schools.

The likelihood boys going to school increases with their birth order among brothers, i.e. the younger the boys among his brothers, the more likely for him to go to school. Similarly, the likelihood of girls going to school increases their birth order among sisters. It is concluded that birth order is important for boys but only among brothers and it is important for girls but only among sisters. It is more important for girls as the probability derivative for the girls is many times more than that of boys. This explains the phenomenon of household level public goods, scale economies and externalities, that is the girls learn from the experience of elder sisters and boys learn from the experience of brothers. The elder female siblings give instructions and education material to younger sisters, or alternatively, younger girls take educational aid from their elder sisters. In the case of boys, i.e. younger boys take educational aid from elder brothers.

In the context of Pakistan, the gender of children is one of the most important characteristics affecting child schooling [Sathar 1993]. The present household survey supports the view that boys are 16 percent more likely to go to school as compared to girls [see Duraisamy 2000 for India]. This provides supports for the results by Durrant [1998], Sawada and Lokshin [2000] and Ray [2001]. In the summary statistics of the present study, out of total school-going children in rural areas, 58.77 percent are boys [see Table No.3]. There are several possible explanations for the distinct gender gap. The lack of female schools in rural areas possibly explains this result. Moreover, strict Islamic laws that keep women at home and in comparatively conservative rural communities explains the lower school probability for girls. Opportunity cost in terms of lost home or market production is likely to differ between boys and girls. In particular, it is widely believed that girls are more likely than boys to help their mothers in household and child-care and may therefore have a higher opportunity cost of schooling. Sawada and Lokshin [2000] have described that high opportunity cost of daughter's education in Pakistan may lead to apparent intra-household discrimination against women in terms of education.

On the other hand, there may be more market opportunities for boys, especially since boys are more likely to be allowed to venture alone outside the home. Because of the custom of seclusion of women, parents might have a strong negative perception of female education. The low probability for girls schooling also reflects the low female teacher availability and quality in schools [Sathar 1993; Saquib 1998]. The socio-cultural forces in Pakistani rural households particularly create the need for women teachers to teach girls, require single sex schools and lack of school availability all of which affects female education more seriously than male education [Shah 1986]. In the rural areas the low attendance among girls is also an outcome of strict restrictions on their movements outside the home after they reach puberty [see also, Duraisamy 2000 for India]. Dropout rates at various grades and levels are higher for rural areas and girls [Khan *et. al.* 1987; Kim *et. al.* 1998]. There may be a case of selective allocation of resources where girls might enter school but are not able to remain there for a long duration, presumably because their brothers get preferential treatment [Rosenzweig and Schultz 1982; Schultz 1995]. Gender has a strong influence in the rural areas of Pakistan. Being a girl in rural Pakistan reduces the chances of attending school [Sathar 1993]. The parents, particularly of rural girls perceive less economic returns to girls' education than boys, which influences the decision of schooling for children. Gender bias in inheritance and marriage practices and in the labour market is a decisive factor in the low participation of girls in education. According to custom, men frequently inherit from, and work and care for their parents,

whereas women marry out of their household and go to their husband's family. Since sending girls to school entails immediate costs with no economic return in the long run, there is little incentive for households to invest in their daughters' education. Early marriages further limits girl's school opportunities. Sawada and Lokshin [2000] found that in the rural areas of Pakistan, 2.9 percent of the children terminate schooling because of marriage. The earlier the marriage age, the less the parents enjoy the benefits of their daughter's education.

Some recent studies [Alderman, *et. al.* 1997; Glewwe and Jacoby 1995; Glewwe *et. al.* 1998] have emphasised the importance of the age when children start school. The lower the age at which a child attends school, the more quickly that child completes his or her schooling, the lower is the private cost of schooling in both direct monetary cost and opportunity costs, the sooner are post-schooling returns reaped, and the longer is the period in which to earn these returns. Age of child is an important variable in determining child's schooling [Durrant 1998]. We find that the probability derivative of age is positive and age-square is negative. More specifically, it implies that the probability of going to school increases by 23 percent by one more year of age of child but it increases at a decreasing rate. The result is contradictory to the general perception that school participation decreases by increase in age [See, Burki and Fasih 1998]. We have taken the minimum age of a child to be in school as 5 years. At this age the children are not sent to school, that is the explanation for the probability derivative being positive. The results again explain the fact that the school enrolment of children is delayed in rural areas. Khan, *et. al.* [2003] found that child enrolment is also delayed in urban areas, so regardless of the rural or urban areas the school enrolment of children is delayed at the national level. For girls the age parameter is more severe regarding delayed school enrolment. This reflects the phenomenon of gender disparity in rural areas.

The parameters of head of the household are critical in determining the child schooling decision. We find that children from the male head of households are 5.9 percent less likely to go to school though 97.5 percent of the households sending their children to school are male-headed. But Maitra and Ray [2000] found for Pakistan that gender of the head of the household does not matter in the schooling decision of children. Ali and Khan [2003] found that in the rural areas of Pakistan children from male head of household are less likely to go to school. This makes the impact of the gender of the head of household on the schooling decision ambiguous in economic literature. The result such as the greater probability for the child to go to school from female-headed households needs consideration.

The female-headed or female-managed households are identified as indicators of family disintegration, child neglect and abandonment, and child exploitation. Life is difficult for female-heads, not least because of prejudice and social stigma. The sheer physical and emotional fatigue of child-raising alone and trying to be the main source of both affection and authority at the same time drain the morale. They are more likely to head a household by necessity rather than by choice. They have far more difficulty maintaining their families because they have less access to the market economy. When they do earn, their wages are generally far lower. The households led by women are among the poorest. In a society such as Pakistan where a system of purdah is predicated on women's dependence on men and separation from the world of work, can result in extreme destitution for women and children. Female participation in economic activity is less due to generally low education level as compared to males, lack of income-earning skills, less employment opportunities and various socio-cultural factors. The probability of children from female-headed households going to school should remain low. But the present study revealed that the economic effect behind the gender of the head of household is not involved. This means that despite the low level of education and comparatively low income, women are good decision makers regarding children's education.

The stage in the life cycle of the head of the household has a negative effect on children overall as well as separately for boys and girls. Anyhow the effect is much stronger on girls' schooling. The older is the head of the household, the less likely it is that the child goes to school. The possible explanation may be that the older head of household has comparatively more siblings as compared to the younger head of household. There may exist a resource competition effect among children. Moreover, the older head of households may have relatively older siblings, which require more educational cost and have a high opportunity cost of schooling.

It is generally perceived that a head of the household's education plays a positive role in the child's decision to go to school. We find that in rural areas the probability of a child going to school increases by 8 percent by increase of one year of schooling of the head of household on average. This indicates important complementarity between the education of the head of the household and child's schooling. This complemetarity is generated possibly by the educated head of household's positive incentives for educating children, improved technical or allocative efficiency, and/or superior home teaching environments as pointed out by Behrman *et. al.* [2000]. The educational status of head of household underlines the transgenerational effect of education.

As concerns the impact of head of household's education on boys and girls separately, it is stronger for boys than the overall impact, but for girls it is nil. No impact on girl's schooling and positive impact on boy's schooling represents the gender discrimination in the education of children.

It is found that in the rural areas of Pakistan the employment status of head of household affects schooling positively. Children from the head of the household who are employed are more likely to go to school. The result highlights the fact that an employed head of household does not face income fluctuations, which ensures the schooling of the child. The employment effect is more intensive for boys as compared to children overall.

Similarly, the income level of head of the household affects schooling positively though the effect is slight. Income of the head of the household is a proxy for the poverty level. That is how current income of the families keeps poor children out of school and thus perpetuates poverty in the next generation. The schooling cost has two aspects, i.e. one of the kind of fees, books and uniform cost and second is the absence of school in the village of residence, distance or travel time to the nearest school or average out-of-pocket expenditures on schooling in the area of residence [Rosenzweig 1982]. Saquib [1998] narrated that it is the opportunity cost that constitutes a huge part of the total cost of education and is most likely to affect the decision to attend a school. That is particularly true for the rural areas where schools are often far away from the home village of students. We find that, for the boys and girls separately, the income effect for boys is almost negligible while for girls it is positive and many times stronger than the overall affect. So it is evident that the poverty level affects girls more, as the income of the head of household increases, it is more likely for girls to be in school.

Education of parents emerges as an important determinant of child's enrolment in school [Sather and Lloyd 1993; Khan 1993]. In the economic literature there exists a strong link between parental education and likelihood of schooling [Behrman *et. al.* 19984; Ravallion and Wodon 2000]. Parents who have themselves been to school are presumably more likely to invest in the education of their children [Alderman *et. al.* 1996]. We find that father's education has a significant positive effect on child's schooling. One additional year of education of the father increases the school participation of children by 10 percent. This result supports the finding of a number of studies [see, for instance Kim *et. al.* 1998]. Mother's education also has a positive effect and one additional year of education of the mother increases the school participation by 12 percent. Parental education is likely

to be complementary with schooling in human capital production. As a consequence, the level of parental education can influence school input choices for their children [see, also Alderman *et. al.* 1996]. The impact of mother's education on the schooling of children seems to be stronger than that of father's education [see also, Sathar 1993; Ravallion and Wodon 2000; Sathar and Lloyd 1993] though the average years of schooling of mothers in the sample is 3.03 years as compared to 5.78 years of fathers. Parental education influences child's schooling mainly through the more favourable attitude towards children's education. Moreover, the cost of helping with homework may be less for more educated parents than for less-educated parents [see, also Behrman and Knowles 1999]. The mother's education on the girl's schooling has more impact than on boy's schooling [see also Duraisamy 2000 for India]. The present study has shown a surprising result regarding the income parameter of the mother, i.e. it has a mildly negative effect on child's schooling.

If the household has assets, the children overall have 4.5 percent more probability of going to school. The ownership of assets also has a positive impact on boys separately, and the impact is more than ten times stronger than for children on the whole. The lower impact on overall children's schooling may be due to the fact that children from some asset holding households have to complement the productive assets. The ownership of assets such as household enterprises, cattle, house, agricultural land, agricultural implements, and shop etc. are an obvious measure of a household's wealth. Hence our results suggest that the probability of child's schooling is systematically higher for households with wealth. Moreover, ownership of assets makes the household stable against the fluctuations in income through credit procurement or sale of the assets. Furthermore, the households with wealth may be more able to afford to hire wage labour instead of drawing children out of school [see also, Sathar 1993]. If the ownership of assets is assumed to stand as a proxy of poverty, then again it is concluded that poverty makes the parents take their children out of school.

Household economic status has been demonstrated in many studies [Duraisamy 2000; Behrman *et. al.* 1984; Lavy 1996] as an important factor contributing to child school participation. We find the per-capita income of the sample as Rs.972.96 per month, which denotes that the whole sample is living above the poverty line[1], and the children from higher per-capita

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[1] Planning and Development Division of Government of Pakistan has adjusted official poverty line at Rs.673.54 per-capita per month for overall areas of the country [CRPRID 2002:297], though the line slides downwards slightly for rural areas.

income brackets are 6.64 percent more likely to go to school. The explanation may be that the higher-per capita income households have lower risk aversion. Hence they have incentives to invest more in schooling than lower-per capita income households. Higher-per capita income households may have better information (in part because of the better family enterprise option and better connections). Therefore they have higher expected marginal private benefits than poorer households. As a result they face less uncertainty about schooling investment. Higher-per capita income households may be better able to deal with stochastic events. For example, through their connections (perhaps facilitated by income transfer, including bribes), they may be better able to offset their children's bad performance on admission examinations than can poorer households. They therefore have private incentives to invest more in schooling than otherwise identical lower-per capita households [see, also Behrman and Knowles 1999 for Vietnam; Bhatty 1998 for India and Dreze and Kingman 1999 also for India]. There are several reasons, higher-per capita income households offer higher-quality (or more accessible) schooling in response to their greater economic and political power. These households may invest in children's education at home directly through tutoring and indirectly through improvement in their health and nutrition. Higher-per capita income households may have better quality of staff and quality of current inputs.

However, it is surprising that per capita income has a negative impact on girl's schooling, but not so surprising is the fact that in rural areas comparatively high-income group households are more prone to socio-cultural factors. Moreover, Kim *et. al.* [1998] have found that in rural Balochistan, the household income is highly inelastic for girls enrolment.

The present survey expresses the average family size of 7.32 persons in the sample. Regarding the impact of household size on child schooling two alternative hypotheses are postulated. One is that in larger households, parents make less investment on schooling of their children because their income per head may be very low owing to higher dependency ratio. In such households the likelihood of schooling becomes low. The other equally compelling argument explaining the mechanism of large households is that they have more earning hands, therefore they have more tendency to admit their children in school [see Durrant 1998]. Ravallion and Wodon [2000] found that children from larger households are neither more nor less likely to be at school. We find that household size plays a major role in the decision making of child's schooling by parents. Household size has a positive influence on child schooling. The finding tends to suggest that larger households, probably due to the joint family system in rural areas,

may in fact be a way of pooling resources to educate a larger number of children.

In rural areas of Pakistan we find that the household composition exerts an impact on child's schooling. The impact is through the number of children. The number of children (up to the age of 15 years) in the household has a negative effect. The presence of an additional child in the household decreases the likelihood of schooling of children by 4 percent. The explanation as given by Ray [2001:10] is that a child living in a household with a large number of children is more likely to be living in poverty than a child residing in a household with few children. Sawada and Lokshin [2000:15] had similar results for rural areas that students who could have higher education are from households with a small number of children. This is a reflection of intra-household resource competition. Sathar [1993] narrated that children from households with a large number of siblings are more likely to be drop outs.

The number of children up to age 15 has a stronger negative impact on girl's schooling, as compared to its impact on children overall. So the competition effect is stronger for girls.

There is another surprising result that the presence of children (up to age 4 years) tends to increase the likelihood of schooling of boys. The result is counter to what one would expect that presence of infants makes the competition for household resources tough and enhances the home-care responsibility. But the presence of children influences the schooling propensity negatively for girls, which makes clear that girls are engaged in child-care.

The presence of children in the ages of 5-15 years decreases the propensity of schooling by 2.38 percent for children overall, and for boys and girls separately by 2.13 and 4.39 percent respectively, so the impact is more severe for girls. As the presence of children (in both age groups of age up to 15 years and 5-15 years) has a negative impact on child's schooling and family size has a positive impact on schooling. So it is the number of children, not the household size which hinders the child's schooling while it may be concluded that the presence of adults in the household may enhance child schooling. The presence of prime-age siblings, i.e. in the age group of 16 or above in the household increases the likelihood of schooling of boys by 22 percent while it decreases the likelihood of schooling of girls by 4.6 percent.

Policy Recommendations

The study has identified a number of factors responsible for lower schooling in the rural areas and some are significant from the policy point of view. It is found that parents do not send their children to school owing to lower perceived benefits specifically for girls. Any successful strategy of raising parental demand for schooling will increase schooling and improve the school environment to a level where children are actually attracted to spend more and more time in schooling.

Pre-schooling education is required for early enrolment of children in schools so as to avoid the delayed enrolment and in order to enhance school participation. The public sector should also concentrate on pre-school facilities.

Poor parents do not demand schooling due to the unbearable cost of schooling, so the cost should be minimised. Collateral credit availability to poor households, especially for asset-less families, may play a pivotal role in sending children to school.

Subsidising education for the poor can induce the parents to send their children to school. The Government may try subsidising instructional materials, uniforms, school meals, etc [see, also, Behrman and Knowles 1999].

The *mohallah* schools projects in Pakistan, for instance, reduced the cost of education by holding classes in homes and doing away with uniforms. As a result, the enrolment of girls rose dramatically. So the project should be expanded.

In India midday meal programmes and attendance scholarships have created a demand for school attendance. This may be replicated in Pakistan. Bangladesh has also introduced such a programme for poor families. This has lead to an increase in enrolment of 2.4 percent and a fall in the dropout rate of 7.6 percent. Food for education stipend is a pure discount on the price of schooling for parents.

By virtue of conducting the analysis separately for boys and girls, we highlight the gender differential in school participation. Our analysis identified some important differences in the determinants of schooling of boys and girls. In rural Pakistan, where the gender gap is enormous, closing the gap will substantially increase school participation. For this purpose the

education of adults needs to be enhanced where again gender disparity exists. So gender equality is equally significant for children and adults.

Raising educational levels of the adult members in the household and increasing public awareness can have a significant positive impact on child schooling. Employment generation of adults can also enhance the school participation of children by boosting incomes and reducing fluctuations in incomes of households.

Fertility and population control policies are significant for school participation. It acts on two fronts, i.e. on the household level by decreasing the intra-household resource competition among children for schooling and at the national level for providing good quality and low-cost schooling to the nation.

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Women's Involvement In Earning Activities:
Evidence From Rural Pakistan

Amtul Hafeez Gondal[*]

Abstract

Based on the Pakistan Integrated Household Survey (PIHS) 1998-99 the paper highlights the factors that influence the decision of married women in their participation/economic activities in rural Pakistan. Employing the probit model on 9427 observations it is found that married women in Sindh and Punjab are more likely to engage in economic activities than their counterparts in Balochistan and NWFP. Women's age, family size and husbands working in agriculture have a significant positive effect on the involvement of rural women in economic activities. Household annual income, nuclear family system, number of children and husbands' literacy level and age have a strong negative effect. No significant relationships of education, migration status and the female being head of the household have been found.

Introduction

Like other developing countries' women in Pakistan make significant contributions in agriculture, household and other rural activities directly or indirectly. Despite recent increases in the proportion of working women the number of working women is still quite small. The main reason for the low involvement of women in economic activities is various socioeconomic constraints, which hinder women's participation in the labour market. Married women have several commitments at home. They have to look after their children and perform numerous household chores. Decision-making in Pakistan has been regarded as a predominantly male prerogative. Women are largely neglected in social, economic, political and legal spheres, although some progress has been made in the enhancement of women in all areas of society. Women labour force participation in Pakistan at 28% is ranked the lowest in the South Asian region. The share of women earning in earned

income is 26% of male earnings while their economic activities rate, as a percentage of that of the male is 40%.[1]

Various studies have been carried out to analyse the labour force participation of women. Ibraz (1993) found that rural women are extensively involved in many agricultural and livestock rending operations, processing of dairy products, poultry and handicrafts. Besides these productive activities they also perform household chores. Jamil (2001) analysed the determinants of women labour force participation in Pakistan using the 1996-1971 *Labour Force Survey*. The study found that the effect of residence on women labour force participation in the urban areas is negative in all four provinces and in the overall analyses of Pakistan. Similarly, Chaudhry and Khan (1987) found that the activity rates of rural women depend to a large extent on the social status of the household concerned. Landlessness and land ownership are generally indicative of the poverty and richness respectively of a household. Household incomes are inversely related to women activities rates. Women participation rates fell as a result of increase in rural incomes. In recent years, the increased mechanisation of agriculture in Pakistan has also tended to contribute to a decline in rural women participation rates. In rural areas, women have remained involved in a variety of agricultural activities for a long time, such as land preparation, seed preparation, collecting farmyard manure, weeding and harvesting. Women also undertake the responsibility of cleaning, drying, and storage of grains. This increases their workload after the harvesting operations. Taking care of livestock is by and large the responsibility of women. They collect fodder, clean sheds and process animal products [Khan and Bilquees (1976); Ahmad, Asghar and Khan (1993); and Sarwar and Saleem (1993)].

The paper presents an empirical analysis of the involvement of rural women economic activities (hereafter IRWEA) using the nonlinear maximum likelihood probability (probit) function.[2] The data is taken from the *Pakistan Integrated Household Survey* (PIHS) 1998-99.

Section 2 lays out the general model employed for analyses, data and construction of variables. Section 3 presents and analyses the probit estimates. Finally, section 4 consists of conclusion and policy implications.

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[1] Bangladesh and India have 42 and 32% respectively. South Asia's average is 33%. For details see 'Human Development in South Asia 2000: The Gender Question'.

[2] The involvement of currently married women in earning/economic activities refers to all the currently married women who worked for at least one hour during the reference period and were either paid employed or self employed.

2. Methodology

This research estimates the regression model in which IRWEA is a function of several explanatory variables. The dependent variable can take only two binary values: 1 if a woman participates in earning activities and 0 if she does not. The paper estimates the nonlinear miaximum likelihood function for the normal probability (probit) model.

It starts with a general function

$$Y = f(X_1,..., X_n) \qquad\qquad ....(1)$$

where Y_i denotes IRWEA. Y is equal to 1 if a woman participates in earning activities and equal to zero if she does not. $X_{1,...,}$ X_n represent various socio-economic and demographic factors leading to women's decision to be involved in earning activities.

Normal Probability (Probit) Model

To explain the dichotomous dependent variable the probit model that emerges from the normal cumulative distribution function will be used. Suppose y*, the ability to participate in economic activities, is unobservable and it depends on a set of observed factors X_i. That is

$$y_i* = \beta X_i + \varepsilon_i \qquad\qquad .... (2)$$

where β is a row vector of parameters, and X_i is the column vector of the variables that affect $y*$ and εi is normally distributed with 0 mean. The observable binary variable is related to $y*$ in the following sense:

$$Y = 1 \quad \text{if } y* > 0$$
$$= 0 \quad \text{otherwise}$$

Given the normality assumption, the probability that $y*$ is less than or equal to Y can be computed from the standardised normal cumulative distribution function as:

$$P_i = \Pr(Y = 1) = (y* \leq Y) = F(Y_i) = \int_{-\infty}^{\beta X_i} f(z)dz \qquad .... (3)$$

where $f(z)$ represents density function, z is normally distributed with 0 mean and unit variance and P_i is the probability that a person will participate in the labour market.

Data, Construction and Description of Variables

The micro data for four provinces of Pakistan came from the nation-wide PIHS conducted in 1998-99 by the Federal Bureau of Statistics, Government of Pakistan. The PIHS records information of all the household members and has questions on labour market participation addressed to adults aged 10 years and above, socioeconomic conditions, employment, income, migration, health, fertility behaviour and consumption pattern.

Since this paper has concentrated only on the sample of married women, the sample size of 51,164 women has been reduced to 9427 married women living in the rural areas of Pakistan. Among them 2313 are involved, while 7114 are not engaged in any kind of economic activities.

Measuring Dependent and Independent Variables

The main objective of the present paper is to analyse the effect of different socioeconomic and demographic factors on the IRWEA. This has been done at the national level. Women's involvement in earning activities is the dependent variable.

- IRWEA =1 if a rural married woman is involved in any earning activities,[3]

- IRWEA = 0 if she is not involved in an earning activities

There may be a number of socioeconomic and demographic factors influencing currently married women residing in rural areas, to decide whether to be involved in economic activities or not. The exogenous factors have been divided into place of residence, women characteristics, household characteristics, husbands' characteristics and economic status of the household. A detailed description of these characteristics is given below:

- Place of residence includes dummy variables for four provinces; Punjab, Sindh, Balochistan and NWFP.

- Women characteristics include women's age and women's education given by dummy variables for different education categories and women migration status.

- Household characteristics include women head, number of children, family system and household size.

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[3] Section 1-F Part -B of PIHS (1998-99).

- Husbands' characteristics include husband's age, literacy, and a dummy variable if husband belongs to the agricultural sector.

- Economic status of the household includes annual income of the household.

Detailed description of dependent and explanatory variables is given in Appendix Table 1.

Description of Variables

The summary statistics of the variables appear in Appendix Table 2. Given the age group of 15-90 years considered in the survey, it is not surprising that the mean age of married women in our sample is about 36 years. It can be seen that about 46 percent of married women in the rural areas of Punjab are involved in earning activities. This percentage declines to 34 percent and 9 percent in Sindh and NWFP respectively. However the probability of women involvement in earning activities in rural Balochistan is only 8 percent. This indicates that the involvement of married women in earning activities is high in rural areas of the Punjab as compared to the other provinces. The tables show that about 74 percent of rural married women, whose husbands belong to the agricultural sector, are involved in earning activities because they found more working opportunities available at farms.

A glance at the number of children in the table shows that 98 percent of rural married women with small children of 0 to 5 years of age are involved in earning activities. Also, the study found that financial constraints increase the probability of women's participation in earning activities.

3. Estimates of the Probit Model

A probit model with a maximum likelihood estimation procedure is employed on a set of explanatory variables by using data from the *Pakistan Integrated Household Survey* (PIHS) 1998-99. Three sets of numbers reported in Table 1 are probability derivatives (i.e. numbers in bold) at the mean of explanatory variables, estimated parameters and their asymptotic t-statistics reported in parentheses. These derivatives measure the change in probability of IRWEA resulting from one unit change in an explanatory variable. For a dummy variable the probability derivative measures the change in the probability of IRWEA when the dummy variable is equal to 1 rather than zero. Since the probit model is nonlinear, the probability derivatives for this model are not constant. It appears that the most important factor affecting rural women involvement in earning activities

include province of residence, household income, number of children, household size, husband's age and literacy and a variable if husband belongs to the agriculture sector.

The empirical results indicate that married women living in rural areas of the Punjab and Sindh are respectively 16 percent and 21 percent more likely to be involved in the earning activities as compared to those living in rural areas of Balochistan. More rural women are involved in earning activities because they have higher employment opportunities available in the agricultural sector. Besides rural males, rural women also work in order to earn their living. The probit estimates for Punjab and Sindh are positive and statistically significant. However, rural women in NWFP have 2 percent inverse probability of participating in earning activities and the result is statistically significant. This is so because the social constraints are high in rural areas of NWFP and Balochistan and women are not allowed to go outside frequently and take part in earning activities.

The regression coefficient of the age variable reflects that the probability of IRWEA significantly increases with age. For example, one-year increase in age is expected to increase the likelihood of rural women involvement in the earning activities by about 1 percentage point. This is so because younger women are less likely to take part in earning activities due to low family size and high child bearing age. Negative and significant coefficient *of AGESEQ* shows the falling effect of age i.e. rural married women are likely to work less in old age implying a concave age-IRWEA profile.

The results show that women's education is inversely related to their involvement in agricultural activities. However, the results are not statistically significant. There are two main reasons for this result. First is that a large proportion of educated women belong to urban areas.[4] Second, there are no formal employment opportunities available for educated women in rural areas.

The table shows that migration has a negative but insignificant association with IRWEA. There are two types of competing effects due to women's migration. One type of effect is that rural women generally migrate from one place to another because of marriage. The other type of effect is that married women also migrate in the hope of securing highly paid work.

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[4] For example, Appendix Table 2 shows that the mean of women with primary education level is only 0.9 percent while those with education level above primary level is only 4 percent.

These two types of effects compensate each other and the overall effect is negative but negligible.

The regression coefficient of *NUCLEAR* shows that the probability of rural women's involvement in earning activities is negative if they live in a nuclear family. In a nuclear family the pressure of domestic work is high which does not allow married women to participate in economic activities. They have to look after their children and other household chores by themselves. The results show that one additional woman belonging to a nuclear family is likely to reduce the women's involvement in earning activities by about 2 percentage points.

NCHILD has a negative and significant effect on the probability of women taking part in earning activities. The simple explanation for this is that more pressure of household tasks due to the presence of small children in the family may cause women to stay at home. One additional child in the household is likely to reduce IRWEA by 1 percentage point. Women belonging to large families are induced to participate more in earning activities by 0.2 percentage points.

On the other hand married women's involvement in earning activities in rural areas is 10 percent higher in women headed households but the result is statistically insignificant. Generally there are two types of effects if a woman is the head of the household. She is likely to have a good division of women's labour in the household. She allows some energetic and more productive women to go outside and be involved in earning activities to financially support the household and asks other women to perform household chores. That is why the regression coefficient *of FHEAD* is positive but insignificant.

The results show that the probability of IRWEA is likely to be inversely associated with the literacy level of the husband. Since literate and educated husbands are likely to earn more income, the economic status of the family is high and female involvement in earning activities is therefore low. So women need not be involved in earning activities in order to increase the household income level. Thus the husband's literacy is likely to reduce the probability of rural women's involvement in earning activities by 5 percentage points. Likewise, *HAGE* is negatively and significantly correlated with women earning work. This implies that women decision making about their earning activities will decline with the increase in the age of the husband. Similarly, rural women have 7 percentage point high probability of participation in earning activities if their husbands belong to the agricultural sector as compared to those women whose husbands are not involved in agriculture related activities.

An inverse relationship between household economic status and women's involvement in earning activities is generally observed. A rise in household income exerts a downward pressure on IRWEA. The inverse effect of income on IRWEA is strong, but the magnitude of this effect is rather small. For example, if household income increases by 10 million rupees, the probability of IRWEA reduces by about 14 percentage points. This implies that rural women belonging to rich families are less likely to be involved in earning activities. In Pakistan, a majority of women choose to work to financially support their household. There are very few women in Pakistan who work simply for their own satisfaction. Various studies found that female's decision to participate in the labour market is significantly determined by household income and family size.[5]

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[5] See for example Hafeez and Ahmad (2002); Chaudliry and Khan (1987); Masood (1988); Bilquees and Hamid (1989); Alderman and Chishti (1989); Kozal and Alderman (1990); Hamid (1991); Kazi and Raza (1991).

Table-1: Estimates of Probit Model for Earning Activities of Currently Married Women in Rural Pakistan (N=9427)

Explanatory Variable	Coefficients	T-statistics	Derivatives
INTERCEPT	-1.828	(-12.819)*	**-0.523**
Place of Residence			
PUNJAB	0.558	(11.082)*	**0.159**
SINDH	0.761	(15.094)*	**0.218**
NWFP	-0.093	(-1.592)*	**-0.027**
Women Characteristics			
FAGE	0.056	(7.305)*	**0.016**
FAGESEQ	-0.0007	(-7.961)*	**-0.0002**
PRIMSEC	-0.145	(-0.967)	**-0.042**
HIGHER	-0.258	(-1.415)	**-0.074**
FMIGSTAT	-0.038	(-1.111)	**-0.011**
Household Characteristics			
NUCLEAR	-0.084	(-2.351)*	**-0.024**
NCHILD	-0.036	(-2.238)*	**-0.010**
FHEAD	0.364	(0.519)	**0.104**
FSIZE	0.008	(1.639)*	**0.002**
Husband Characteristics			
HUSLITRCY	-0.199	(-6.128)*	**-0.057**
HUSAGE	-0.005	(-2.045)*	**-0.001**
AGRI	0.254	(7.343)*	**0.073**
Economic Status of The Household			
HHINCOME	-0.00005	(-9.723)*	**-.0000014**
N	9427		
Log Likelihood	-4761.70		
R2	0.108		

Note: The dependent variable is set equal to one for females who are involved in economic activities and zero otherwise. The statistics significant at 5% and 10% levels are indicated by * and ** respectively.

4. Conclusion and Policy Implications

This paper has indicated that there is a set of factors which influences the involvement of married women in economic activities in Pakistan. Married women living in rural areas of Sindh and the Punjab are more involved whereas those living in rural Balochistan and NWFP are less

likely to be involved in economic activities. It has been found that younger women are less likely to be involved in economic activities. The probability of women involvement in earning activities also declines with the migration of married women from one place to another. Similarly *NUCLEAR* and *NCHILD* have a strong negative association with IRWEA. Husbands' literacy level, husbands' age and household annual income have a strong negative relationship with IRWEA. However *FSIZE* has a positive and significant effect on it. Likewise married women in Pakistan are more engaged in economic activities if their husbands are involved in the agricultural sector.

These conclusions have important economic and policy implications. Involvement of married women in economic activities is reasonably high in the rural areas of Pakistan. Weak financial background and large family size are the major reasons for this high participation whereas small number of children, nuclear family set up and husbands' literacy levels are likely to hinder the IRWEA.

To address these issues, there is a need for policy on women's employment to be carefully planned, based on proper analyses of available *Pakistan Integrated Household Survey* data that provides the most important insights in this respect. The government can also intervene in the labour market with measures to create better working conditions and increasing earning opportunities for rural women, particularly in the agricultural sector. The government should also ensure the provision of family planning and childcare facilities.

Appendix

Table-1: Definition of Variables

Variables	Description
Dependent Variables	
IRWEA	= 1 if a rural woman is involved in economic activities
IRWEA	= 0 if she is not involved in economic activities
Explanatory Variables	
Place of Residence	
PUNJAB	= 1, if woman is currently residing in the rural areas of province Punjab, and 0 otherwise.
SINDH	= 1, if woman is currently residing in the rural areas of province Sindh, and 0 otherwise.
NWFP	= 1, if woman is currently residing in the rural areas of province NWFP, and 0 otherwise.
BALOCHISTAN	= 1, if woman is currently residing in the rural areas of province Balochistan, and 0 otherwise.
Women Characteristics	
FAGE	Woman's age
FAGESEQ	Age*Age
ILLITERATE	= 1 if the woman has not acquired formal education and 0 otherwise.
PRIMSEC	= 1 if woman has primary or secondary education, 0 otherwise
HIGHER	= 1 if woman has intermediate or degree level education, 0 otherwise
FMIGSTAT	= 1 if woman is migrant, 0 otherwise
Household Characteristics	
NUCLEAR	= 1 if woman lives in nuclear family, 0 otherwise
NCHILD	Number of children
FHEAD	= 1 if woman is head of the household, 0 otherwise
FSIZE	Family size
Husband's Characteristics	
HUSLITRCY	= 1 if husband is literate, 0 otherwise
HUSAGE	Husbands' age
AGRI	= 1 if husband belongs to agriculture, 0 otherwise
Economic Status of The Household	
HHINCOME	Household annual income
N	Sample size

Table-2: Summary Statistics of Selected Sample for Rural Pakistan (N=9428)
(Sample Means and Standard Deviations)

Explanatory Variables	*IRWEA1*	*IRWEA0*
Place of Residence		
PUNJAB	0.467	0.367
	(0.499)	(0.482)
SINDH	0.349	0.216
	(0.477)	(0.411)
NWFP	0.093	0.223
	(0.291)	(0.416)
BALOCHISTAN	0.085	0.194
	0.279)	(0.395)
Women Characteristics		
FAGE	36.855	37.879
	(11.773)	(13.449)
FAGESEQ	1496.853	1615.743
	(960.399)	(1147.112)
PRIMSEC	0.009	0.011
	(0.093)	(0.103)
HIGHER	0.004	0.100
	(0.066)	(0.099)
FMIGSTAT	0.316	0.299
	(0.465)	(0.458)
Household Characteristics		
NUCLEAR	0.526	0.512
	(0.499)	(0.590)
NCHILD	1.032	1.026
	(1.065)	(1.126)
FHEAD	0.0004	0.0005
	(0.021)	(0.024)
FSIZE	7.650	8.006
	(3.639)	(4.487)
Husband's Characteristics		
HUSLITRCY	0.351	0.447
	(0.478)	(0.497)
HUSAGE	42.483	44.003
	(13.415)	(14.851)
AGRI	0.745	0.548
	(0.436)	(0.498)
Economic Status of the Household		
HHINCOME	3231.580	38101.455
	(4801.337)	(47081.757)
N	2313	7114

Notes: numbers in parenthesis are standard deviations.

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Asian Financial Markets: A Review

Gordon de Brouwer (ed)., *Financial Markets and Policies in East Asia*, London: Routledge, 2002, ISBN 0-415-27388-9

When Thailand was forced to devalue its currency in July 1997, no one predicted the financial turmoil that would follow. Over the next two years, financial crises took a heavy toll on the economies of Indonesia, South Korea, Malaysia, the Philippines, Hong Kong, Russia and Brazil. Indeed, few developing countries emerged unscathed. Thus, it is hardly surprising that no event of the past fifty years has generated more calls for a reexamination of the institutions, structures and policies aimed at crisis prevention and resolution than the Asian financial crisis of 1997.

This excellent volume moves beyond providing the now familiar story of the origins and impact of the crisis. Rather, the fourteen well-organised chapters competently address three critically interrelated issues. Chapters 2 to 4 provide a concise discussion about the changing patterns of finance in East Asia. Chapters 5 to 7 document and assess the financial restructuring and liberalisation with particular focus on the five worst affected economies, including China. Chapters 8 to 14 provide wide-ranging analyses of financial policies in the region, with special emphasis on monetary and exchange rate policy, including how they are related.

Following the editor's concise introduction, Dominic Wilson's valuable piece lucidly reviews what has been happening in regional financial markets since the crisis, as well as offering some thoughts on prospects and concerns. He reviews recent evidence on why financial development and diversity matter to economic growth. He then analyses trends in share markets, the cost of capital, market capitalisation and liquidity, mergers and acquisitions and general financing. Wilson argues that while equity and bond markets are clearly important, bank intermediation remains the mainstay of regional financing. Put bluntly, reform and recovery of the banking system is essential to achieve stable, broad-based economic growth. Wilson also competently assesses regional developments and the outlook for the region. He notes some positive legacies of the crisis, including efforts to improve liquidity and efficiency in financial markets. He notes that while greater involvement of foreign financial institutions will be controversial, it nevertheless serves as an important catalyst for markets to move to best practice.

Other noteworthy chapters include Kim, Park and Chung's "Patterns of Bank Intermediation and Structure: A Korean Perspective." The authors clearly examine the changing asset structure of Korean banks and the factors that have driven bank disintermediation. They compellingly argue that strong enforcement of Bank for International Settlements (BIS) capital adequacy rules during the process of financial restructuring discouraged banks from lending to business and caused them to shift to investments in securities. Rajan and Siregar's rigorous chapter critically assesses recent developments in regional capital flows. The authors examine some of the models used to explain financial crises and then review the combination of push and pull factors that have influenced capital flows both before and after the crisis. They note that the post-crisis rebound was accompanied mostly by a sharp resurgence in portfolio capital flows. The authors use correlation analysis and Granger-causality tests to explore the determinants of private capital flows. They find some evidence that economic growth and currency movements affect the decision to undertake portfolio investments in East Asia.

Albeit rather dated now, Masahiro Kawai's chapter 5, "Bank and Corporate Restructuring in Crisis-Affected East Asia" provides an informative discussion of financial and corporate restructuring in Indonesia, Korea, Malaysia and Thailand. Similarly, in chapter 6 Mari Pangestu and Manggi Habir provide a nuanced overview of the process of bank restructuring and reform in Indonesia. They lucidly analyse the state of the banking system before, during and after the crisis, and how various economic, social and political vulnerabilities interacted with the banking crisis. The authors also provide an insightful review of Indonesia's bank restructuring and recapitalisation programme, and aptly conclude that given the sheer magnitude of the problem in Indonesia, recovery there will take time. Fan Gang's well-written chapter critically assesses the concept of capital-account sequencing. He argues that while capital and technology may be highly mobile, other factors, such as the ability to manage institutions and markets are not so mobile because they tend to be country-specific. Clearly, this relative immobility of management and regulatory oversight puts developing countries on an unequal footing. While Fan does not dispute the desirability of liberalisation and argues that developing countries should speed up reform to accelerate the process of 'compatible opening', he cautions against 'excessive opening.' According to Fan one of the reasons China was able to withstand the crisis better than most is because it followed compatible opening.

David Nellor's thoughtful chapter highlights the need for consistency in the macroeconomic policy mix -- after all, he reminds us that inconsistency between the settings of monetary policy and exchange rate policy (resulting in

high domestic interest rates, fixed exchange rates and poor risk management) -- was at the root of the crisis. In his chapter, "Fixed or Floating: Is it Still Possible to Manage in the Middle?" Reuven Glick nicely assesses this debate and examines what is happening to the "missing middle." He argues that the middle ground is fast shrinking because intermediate regimes are becoming increasingly difficult to maintain. Glick thoughtfully discusses the feasibility of alternative exchange rate arrangements in East Asia. He maintains that as openness to trade and finance increases in the region, countries will have little choice but to allow greater flexibility in their exchange rates – although he cautions policymakers against attempting to keep the exchange rate within a particular range for extended periods of time. In chapter 11 appropriately entitled "Comparing Monetary Policy Operating Procedures in Indonesia, Korea, Malaysia and Thailand", Claudio Borio and Robert McCauley critically assess how monetary policy is being implemented in these countries. Indeed, this chapter provides an important reference on monetary policy operating procedures and deserves careful reading. In his excellent chapter, "Does A Formal Common-Basket Peg in East Asia Make Economic Sense?" de Brouwer assesses the proposal that countries in East Asia should peg their exchange rates to a common basket of the yen, dollar and euro. While the rationale for a common-basket peg is that it minimises variability between exchange rates in the region and, on average, against the major currencies, de Brouwer argues that a formal peg is only viable if it is consistent with a country's economic structure and policy regime. He concludes that it is not clear, at this stage at least, whether common currency arrangements would suit East Asia.

Overall, this is a valuable and timely volume which can be used with profit in advanced under-graduate and graduate classes.

University of San Francisco   **Shalendra D. Sharma, PhD**

Book Review

M. Ashraf Janjua, *History of the Slate Bank of Pakistan,* Volume 111 (1977-88), Karachi, State Bank of Pakistan, 2003, pp. 790, Price: Rs.750 (US$30).

If ever a history of development of institutions in Pakistan is written, the State Bank of Pakistan will occupy a central place in it. Of course the State Bank has a pivotal position in economic policy formulation and implementation in the country. Furthermore, the institution was founded and its basic processes laid down by men of integrity and vision and despite attempts at some stages of its evolution to denude and make it serve lesser purposes, the State Bank has managed to retain the dynamism and professionalism of its original wisdom. It is also worthwhile to note that the State Bank is probably the only institution to compile a well documented and comprehensive study of its evolution and performance "in the context of the changing political, institutional and economic milieu", as the State Bank governor points out in the foreword of the volume under review. The future historian of institutional development in Pakistan could not have asked for more from the premier institution of the country.

The State Bank was set up in 1948 under conditions by no means ideal for creating new institutions and helpful to their steady evolution. There was a huge void in the financial sector as a result of the widespread riots during the partition days and migration of the non-Muslim communities who dominated not only the financial institutions, but also business and whatever little existed by way of industry in Pakistan. No wonder that the State Bank was called upon to concentrate upon both the core and non-core functions in a larger, and at times different way from that in which a central bank of any other developing country does.

All this has been written about in the earlier two volumes i.e. Volume 1 (1948-60) and Volume II (1961-77). Volume III under review covers the period 1977-88 but it seems the author (and the editorial board) found it necessary that in the interest of consistency of analysis, areas such as monetary policy and credit management, and regulatory framework for banks, need to be re-examined for the former going back to 1972 and for the latter all the way back to 1948. A whole new chapter on "exchange rate arrangements, management of reserves and related areas" has been added with the reference period starting with 1948. The coverage of a number of other matters e.g. prudential regulations, money and capital market etc. also goes back to 1972.

This has enabled the author to present a comprehensive view of the role and functions of the State Bank including the traditional functions as banker to the government, guardian of the financial sector, banker to the commercial banks, lender of the last resort, management of foreign exchange reserves, currency issue, regulation of foreign exchange markets and the determination of exchange rate of the rupee within an exchange rate regime. But the most dynamic part of such functions, called the "core" functions, is the management of monetary policy within the macro-economic management of the economy aimed at sustaining price stability.

"Non-core" functions, on the other hand, are no less important even if these are defined as "optional". The responsibilities relate to such critical areas as development of financial infrastructure, clearing payments and settlement payments, development legal framework, economic research, collection of monetary, financial and balance of payments data, interaction with international financial institutions such as the IMF, monitoring of the financial system and indeed the entire economy since a central bank is also expected to perform the functions of advisor to the government. And this even if governments in Pakistan have a tendency to play down such a role. One particular aspect of the functioning of the State Bank, and its ability to restrain any adventurism in economic management, is its relationship with the government.

The book highlights the nature of such a relationship within the context of the State Bank's monetary management to show how it is combined with other economic policies (of the government) so as to help realise the broad economic objectives of the country. Monetary policy thus has to be coordinated with other economic policies in a balanced way. The State Bank's main responsibility is financial stability i.e. price stability including competitiveness of the rupee in the international market and to ensure the soundness of the financial system.

The book stresses the point that the realisation of national economic goals "will be in jeopardy if monetary and credit policies were made to carry the burden of any other policy".

The State Bank managed to live with the finance ministry (representing the government) amicably for quite some time but the inevitable clash came after the nationalisation programme of the Peoples Party in tlie early seventies culminating in the takeover of the State Bank's shares held by the general public (thus effectively "nationalizing" the State Bank) in 1974. The bank's Board of Directors underwent changes in line with the changes in the status of the bank. The Board lost its independent

voice since all the members were now nominees of the government. No advice was sought by the government from the bank before taking such drastic steps that changed the shape of the economy.

The State Bank lost much of its autonomy and indeed "officials of the Ministry of Finance treated the State Bank more or less like a subordinate office of the Ministry" as the book reports with remarkable candidness. The government and the State Bank were unable to agree with each other's viewpoint on bank borrowing for budgetary support, large size of fiscal deficit, accumulation of commodity operations, financial facility, bank loans to public sector enterprises, and public debt management. A number of other developments led to the curtailment of the authority of the State Bank and the Finance Ministry "effectively took over the functions of the State Bank". Presumably, this trend continued even after the fall of the People's Party regime. The book points out that by the late 1980s, the State Bank as a regulator of monetary policy "was completely marginalized and subservient to the fiscal requirements of the public sector".

This book is in the first place, an excellent history of the State Bank in the sense that it is not just a description of the major events of the institution. The stress is placed on analysis and appraisal which puts it in a more exalted place than the previous two volumes.

But it must be acknowledged that this is also more than a history of the bank. The space, and academic treatment, given to monetary management in the country upgrades this book to a treatise on money and banking, a subject area crying for more and more books and research. The only book on this specialised area is S.A. Meenai's 'Money and Banking in Pakistan'. Now one can include Volume III also which raises the total to two. Is that enough?

The chapter on Islamisation of the Economy needs special mention since it is remarkable in terms of clarity of thought and expression, and also as an excellent summary of the steps taken so far in the direction of Islamisation, and bringing on record some excellent writings on the subject by persons of standing.

The author, Mr. M. Ashraf Janjua was the most appropriate choice for such a task. His long association with the field of economics, central banking and monetary management was invaluable for undertaking this work. He has an easy style of writing which, when combined with his deep knowledge and understanding, could only ensure the outstanding quality of

the end-product. He should do more such work to fill the gap in this vital area of economic policy.

One would expect the next volume bringing the story from 1988 to the present time to be on the shelves soon. Of course a work of such depth takes time, but the readers must be forgiven for their impatience and high expectations for which Volume III alone should be held responsible.

Lahore School of Economics   **Viqar Ahmed**

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