SSRG International Journal of Economics and Management Studies
ISSN: 2393 – 9125 / https://doi.org/10.14445/23939125/IJEMS-V6I3P106

Volume 6 Issue 3, 46 - 60, Mar 2019

Original Article

Determinants of Enrollment at Secondary and Higher Level of Education in Pakistan

Iqra Arshad[1], Udomsak Seenprachawong[2]

[1]*Research Scholar, Graduate School of Development Economics, National Institute of Development Administration (NIDA), Bangkok, Thailand.*
[2]*Assosiate Professor, Graduate School of Development Economics, National Institute of Development Administration (NIDA), Bangkok, Thailand.*

Abstract *- The persistent low enrollment rate at a secondary and higher level of education in Pakistan indicates the failure of the Government to annihilate illiteracy and ultimately reduce poverty through education. Using annual time-series data from the year 1965 to 2015, the study aims to analyze the determinants of secondary and higher levels of educational enrollment of both males and females in Pakistan. The main concentration was on the impact of educational spending by government, a number of institutions, GDP per capita see the healthiness of economic wellbeing of individuals. Moreover, labor market situations have been explained by the unemployment rate. Unrestricted VAR and Cointegration technique is employed to identify the relationship among variables. The Results confirm the existence of a significant relationship between the number of institutions and government spending in the long run for secondary education. Besides, the impact of GDP per capita on female secondary enrollment is much stronger than males. While a higher level of education, the GDP per capita, government spending, and a number of institutions significantly impact the rate of enrollment. A statistically significant and inverse association was observed between the unemployment rate and higher enrollment in the long run.*

Keywords *- Educational Enrollment, Educational Financing, Unemployment, Institutions, GDP Per Capita*

I. INTRODUCTION

Education is a basic human right irrespective of socio-economic norms. The growth of any country depends not only on physical capital but also on human capital. Investment in education enhances knowledge, competencies, and skills, which improves the productivity of individuals. Education makes individuals better off by creating value for them in the form of creating awareness regarding health issues, increases individual's workplace productivity which positively affects the GDP growth of any economy. Barro (1991)explored that a positive relationship exists.

Between schooling and growth of real per capita GDP. He used enrollment rate as a proxy of human capital and find out that it has a positive association with a growth rate of per capita GDP. Baldacci, Clements, Gupta, & Cui (2004) elaborated that both educational and health expenditure has a positive and substantial direct effect on the accumulation of human capital and a positive substantial indirect influence on growth.

In human capital theory, education is regarded as an investment, and the growth of any economy depends upon the human capital investment to come out from the trap of poverty (T. W. Schultz, 1961). Khalil, Khalil, Arshad, & Khalild (2018)advocates that investment in human capital leads towards competitiveness and higher productivity. The Gross primary enrollment rate in Pakistan is about 97.71%, and to achieve universal primary education.[1] Pakistan is near to reach its destination. At the secondary level, the gross enrollment.[2] Rate is 46.109%. According to a World Bank survey (2016), gross enrollment at the secondary level for high-income countries is 107.104%, whereas, for the low and middle-income countries gross enrollment rate is 72.647%. Thus, there is a great difference in the enrollment rates between high-income and low-income countries, which signals us that schooling is one of the most important factors for the growth of any economy. India and Pakistan are in the same region and are considered as less developed countries; however, in India, the gross enrollment at the tertiary level of education is about 26.929%, and in Pakistan, it is 9.7333% (World Bank, 2016). The

[1]More particularly, this indicates the second Millennium Development Goal (MDG), which is established by the United Nations.
[2]The gross enrollment ratio (GER) is the share of children of any age that are currently enrolled in school. In countries where children start their school late or repeat a grade, the GER can exceed 100%.

performance of Pakistan in terms of education is required attention. However, Pakistan is doing well in primary education, but at the secondary and tertiary levels of education, the educational performance of Pakistan is alarming.

A. Country Profile

The Islamic Republic of Pakistan appeared on the World map on fourteenth August 1947. It covers a region of around 796,096 km2 and shares its borders with China, India, Iran, and Afghanistan. The location of Pakistan is of essential significance in South Asia. It links the Eastern world with the West. It has pleasant and exchange relations with China, a growing economy and tech monster, in its north. Afghanistan and Iran are in their west. India lies in its East, which shares historic and cultural associations with Pakistan. Pakistan has 4 provinces- Punjab, Sindh, Balochistan, and Khyber Pakhtunkhwa. At present, Pakistan is the 6th most crowded nation in the world. Individuals who are brave and Passionate makeup to around 207 million of this nation. It is amongst the middle-income countries with a per capita GDP of 1547.853 in the current US Dollar.3 and almost 24.3% of people are living below the national poverty line4. The annual population growth rate of Pakistan is 1.954%, and if we compare this growth rate to the high-income countries its only 0.56% (World Bank, 2017). The literacy rate of people aged 15 or above is 56.977%, and almost 44% of people are illiterate, which affirms the troubles overlooked by its educational system are serious. So, to reaffirm the dedication of the government to ameliorated the educational system, sequential cash-transfer policies and school feeding programs have been endorsed and implemented.

B. Problems in Pakistani Educational System

1. Gender Disparity

As per Human Development Report 2016, Pakistan's HDI value is 0.550, upraised from low human development to the medium human development group, putting the country at 147th out of 188 nations and territories. Approximately from 1980 to 2015, Pakistan's HDI rate augmented from 0.359 to 0.538, an expansion of 43.0 percent or, on an average yearly increase of 1.3 percent. The extensive issue in the educational sector of Pakistan is gender disparity which required utmost attention. One of the candid principles behind a fair society is equity in access to opportunities. While characterizing what consist of fairness in opportunities is particularly difficult, there is general unanimity that access to education is a constitutional right of everyone. However, it is evident that equivalent access to only basic education is not universal in many nations and enormous differences exist in educational accomplishment, both within and across countries. In many countries, including Pakistan, the level of schooling for girls is lower than for boys. Song, Appleton, & Knight(2006) advocates that in rural China, returns to female schooling were the least, but for males, the returns were modest. Females' education has been validated to have considerable positive external effects separated from favorable impacts on the woman herself. Additionally, generating private returns from participating in the labor market, females' education has resilient impacts on several other variables, such as their children's health and mortality, own fertility, and reproductive wellbeing.

Following table provide the enrollment rate between male and females at a secondary and higher level from 1965 to up till now which shows the gender disparity in the educational system of Pakistan.

Table 1. Enrollment Rate

year	Secondary enrollment		Higher enrollment	
	Male	**Female**	**Male**	**Female**
1965-66	79.91	20.08	77.80	22.19
1975-76	78.50	21.50	77.51	22.48
1985-86	73.46	26.53	85.30	14.69
1995-96	66.82	33.17	72.14	27.85
2005-06	58.64	41.35	59.15	40.84
2015-16	56.74	43.25	55.55	44.44

Source: Ministry of Finance (Pakistan Economic Surveys)

The data given in table 1 shows that a large differential exists in enrollment between males and females. Moreover, in five decades, the participation of females in education has not much improved. The performance of the government in order to create awareness among people to educate their girls is mediocre. The statistics show that from 1965 to 2015, there is a modest increase in the participation of females in education. On the contrary, the enrollment of males slightly goes on decreasing, which represents the changing conditions of the labor market. Hassan & Cooray (2015) examine the impact of male and female education on the growth of an economy by using panel data of Asian economies by adopting extreme bounds analysis and results showed that Asian economies need to invest more in female education relative to males, increase the stipend for females and make provisions to boast female school attendance. This will assist the

[3]World Bank national accounts data, and OECD National Accounts data files

[4]World Bank, Global Poverty Working Group. Data are compiled from official government sources or are computed by World Bank staff using national (i.e., country-specific) poverty lines.

Asian economies in narrowing the enrolment gap and attain faster growth.

Aslam (2009) analyzes the reasons and factors behind the persistent gender gaps in educational enrollment in Pakistan. Author tests the labor market factor for the explanation of gender gaps in education. Results advocate that the return to schooling is noticeably lower for males than for females, although aggregate earnings are radically higher for males than for females. One probable explanation of this finding is that, even if the return to girls' schooling is higher as compared to boys, but the part of the return to daughters' achievement accruing to parents may be lesser than that accruing from a son's. The 2002 PIHS demonstrate that only 6% of adult daughters aged above 21 years taken up residence in their parents' homes, signifying that majority are married and staying with their husbands.

2. Large Population and Household Size

Pakistan is one of the heavily populated countries; an explosion of population in conjunction with the democratic aspiration of the nation put the existing educational system under substantial strain. The educational planners and administrators have to endeavor hard to tackle these challenges. To identify

The factors behind the low enrollment rate in Pakistan, one notable factor is large household size. About 98% of Pakistani are Muslims, and according to the Muslim school of thought, people did not like to take contraceptive measures to control childbirth. Memon & Jonker (2018) noticed that in developing countries, the female have less role in family planning, and the decision to have more kids or not is done by their husband's. But with an increase in education, the role of the female in family planning and taking contraceptive measures have improved. As a result, Pakistan is amongst the countries which have the highest population. The average household size of Pakistan is 6.31 at the national level, and if this size is disaggregated by quintiles, then the first quintile has an average size of 8.06, and the fifth quintile has 4.84 (HIES, 2015-16). This illustrates that the poor people of the country have the highest household size and the richer ones have the lowest.

3. Low Level of Government Spending

Pakistan is tackling numerous issues on account of overpopulation, for example, large family size and poverty due to which households are incapable of sending their children to school. Being poor households, they can't afford the school fees, uniforms, transportation costs, and other expenses. Being the 6th largest country in terms of population, Pakistan dependably confronts difficulties in terms of apportioning resources for the educational sector. Public spending on education as a percentage of GDP is lowermost in Pakistan in comparison to other countries located in the South Asian region. According to official data, public spending on education indicate a persistent declining trend from past years. As stated by UNESCO's EFA Global Report 2009, the public spending on education as a percentage of GDP in other republics and kingdoms of the same region was 2.6% in Bangladesh, 3.3% in India, 3.2% in Nepal, 5.2% in Iran, and 8.3% of GDP in the Maldives.

4. The low number of Educational Institutions and Facilities

From the past two decades, the number of educational institutions went on increasing to cope with the pressure of the growing population. In spite of this fact, the poor quality of the prevailing learning atmosphere is apparent from the fact that a substantial number of educational institutions were missing with basic infrastructure and other facilities. In order to increase the approachability of education, predominantly for girls in poor households, existing schools were required to be upgraded with the endowment of required infrastructure, consequently to bring improvement, both in output and quality of education. The absence of basic facilities at educational institutions causes people to think that the perceived benefits from education are less than the opportunity cost because this large proportion of children, children, and adults cannot take benefit from educational opportunities. (A. Hussain, 2003). Afzal, Rehman, Farooq, & Sarwar(2011) proposed that to accelerate the growth in Pakistan, government spending on higher education needs to be increased.

As per statistics, in 2016-17, approximately 32% of public educational institutions were deprived of the facility of electricity, and in the summer season, which starts from April and ends in September, it is near to impossible to survive without electricity. Moreover, 22% of institutions have no facility for drinking water, and according to these extreme facts, there is a greater need to escalate the government budget for education. The current situation shows that the government fails to recognize the urgency of education and to address the indispensable issues behind the persistent low enrollment, which results in dire consequences and no economic opportunities for youngsters, which account for 64% of the total population.

C. Problem Statement

In a country like Pakistan, there are a number of issues such as gender discrimination, poverty, and lack of government attention towards higher education. According to the National Human Development report

in 2018 stated that 29 out of 100 young people are illiterate, and only 6% have more than 12 years of education. In terms of employment, 39 out of 100 youngsters are employed (32 of them males and 7 females). The pressure of the growing population insinuated that the government failed to engage the large population in education, and this can be barely attributed to the inadequacy of institutions and government spending exclusively. The enrollment decisions mirror the individual and parental financial capacity to capitalize on human capital. Identifying the determinants of enrollment in the educational sector of Pakistan, which is embroiled in cultural issues, is quite challenging.

D. The objective of the Study

The current study aims to examine the relationship between government spending on education, number of institutions, and enrollment rate with the inclusion of some other variables such as GDP per capita to examine the well-being of individuals and unemployment rate.

E. Significance of Study

The outcome of this study can assist as an advantageous reference to policymakers, educational administrators, and political leaders to be informed about the major determinants of enrollment in order to improve the human capital and productivity of the youth of Pakistan. The legislators possibly will be able to realize the potential reason behind the low enrollment and could able to make policies in accordance with these factors. It is worthwhile to note that this study is of unique significance because this study employs secondary annual time series data for five decades from 1965-2015, which until now has never been utilized to identify the relationship among the aforementioned variables. Moreover, many studies find out the factors behind the persistent low enrollment at the primary level, but only a few studies target secondary and higher education. The current study target both secondary and higher education and elaborate on the effect of government spending, the number of institutions, GDP per capita, and unemployment rate on enrollment of males and females at a secondary and higher level of education simultaneously.

II. LITERATURE REVIEW

The major pitfalls in the education system were studied by. R. Khan, Mahmood, & Hussain (1986) regarding the educational structure of Pakistan. Results suggest that teachers and institutions are basic ingredients, and in urban areas, the institutions are overcrowded, which means there is an urgent need to increase the number of institutions.T. P. Schultz (2002) contends and legitimizes that the government ought to invest more to educate girls. Social benefits associated with investments in the human capital in the form of child health and schooling are greater, with an augmentation in the schooling of their mother more than their father. More educated females work more long hours at the workplace and enlarging the tax. Shapiro and Oleko Tambashe (2001) examined the relationship between poverty, household size, and economic betterment on enrollment and educational attainment. Results suggested that the higher the investment in education, the higher the economic betterment, and household size has a negative effect on enrollment and educational attainment.

Devi & Devi (2014) examines the relationship between school enrollment, Government spending, and a number of institutions, and Econometric evidence suggests that government expenditure and a number of institutions are positively correlated to student enrollment in Pakistan. Sabir & Abdullah (2002) analyzed that government spending on education proves more beneficial for males than for females, which caused the gender disparity. Arif, Saqib, Zahid, & Khan (1999) attempt to observe the socioeconomic determinants of school enrollment and results describe that household size, income, number of institutions, and parent's characteristics are significant. The effect of expanding female secondary enrollments looks to be much bigger, particularly in nations where the female secondary enrollment is quite low Subbarao & Raney (1992).S. M. Khan, Amjad, & Din (2005) features a few variables to explain the growth in Pakistan and results indicate that investment in education and better institutions can lead Pakistan towards high growth rate. Arai (1989), Huijsman, Kolek, Kodde, & Ritzen(1986) proposed that socioeconomic factors and economic factors such as income for the investment in education and availability of institutions impact the enrollment ratios of males and females.

Pakistan has forgone large income growth because of low investment in education. Specifically, a low focus on female enrollment, which has higher social benefits such as a higher enrollment rate of females, leads towards lower infant mortality and fertility (Birdsall, Ross, & Sabot, 1993). Psacharopoulos & Patrions (2018) features and highlights the modern trends and patterns grounded on a database from 139 countries. Information was provided according to the per capita income of countries and demonstrated that in low and middle-income countries, the private benefits to secondary and higher education are higher than from high-income countries. Z. Hussain, Khilji, Mujahid, Javed, & Khilji (2018) reported that primary education

proves insignificant in improving the living standard of people in rural areas of Pakistan. Moreover, the threshold should be secondary education. Moretti (2006) argued that private returns to education are high as compare to social returns but why Government-subsidized higher education and the reason behind this is the positive externality of education which increases the productivity of individuals

Mani, Hoddinott, and Strauss (2013) examined the impact of income on school enrollment and suggested that income positively affects school enrollment, and this effect is larger for girls than boys. Burney &Irfan(1995) demonstrated that household income, parental educational background, and tenure of being landowner positively influence school enrollment. The reason behind the low secondary enrollment of females in Pakistan and Bangladesh are poverty, parents' attitude towards education, early marriages of girls, lack of school facilities, long-distance school, and domestic work. (Sultana & Haque, 2018). The enrollment rate of Muslims at a higher level of education is lowest in India; moreover, the participation rate in the labor market was found low (Singh &Butool, 2015). A positive relationship was found by Barbu (2015) between unemployment and undergraduate enrollment. When the unemployment rate increased, the enrollment of Blacks and Whites were found to increase in higher education meanwhile, a decline in the enrollments of American Indian, Asian, and Hispanics.

Nidup (2016) tried to investigate the determinant of school enrollment, and results indicate that income is more important for poor households than for richer. Moreover, income has a significant impact on enrollment. Carsamer and Ekyem (2015) explore the impact of Government expenditure on enrollment in primary and secondary schools, and results demonstrate that government spending positively influences enrollment. Zimmerman (2001) proposed that family income is a major determinant of school enrollment and argued that the children in poor households tend to have low enrollment; on the contrary, the children in richer households have a high enrollment rate.

III. DATA SOURCES AND METHODOLOGY

A. Data Sources

In this study, the annual time series data were used from 1965 to 2015. The paper examined the relationship between government spending, number of institutions, GDP per capita, unemployment rate, and enrollment rate at a secondary and higher level of education in Pakistan. The data were taken from WorldBank indicators and numerous issues of economic surveys of Pakistan.

B. Methodology

The study employed four models in order to discover the relationship among explanatory and exploratory variables at different levels of education. The first model focused on the enrollment at a higher level of education collectively for males and females. The remaining three models were used to identify the impact of independent variables on secondary enrollment separately for males, females and one model was used to combine the impact of regressors on both genders, males and females.

$$H.Edu.Enroll_t = \beta_{0t} + \beta_1 INS\_H_t + \beta_2 GSP\_H_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t \quad \textbf{(Model 1)}$$

$$S.Edu.Enroll_t = \beta_{0t} + \beta_1 INS\_S_t + \beta_2 GSPS\_S_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t \quad \textbf{(Model 2)}$$

$$S.F.Edu.Enroll_t = \beta_{0t} + \beta_1 INS\_SF_t + \beta_2 GSPS\_S_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t \quad \textbf{(Model 3)}$$

$$S.M.Edu.Enroll_t = \beta_{0t} + \beta_1 INS\_SM_t + \beta_2 GSPS_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t \quad \textbf{(Model 4)}$$

The specification for the regression model are given below:

S.Edu.Enroll = Secondary Educational Enrollment
S.Edu.Enroll_M = Secondary Educational Enrollment of Males
S.Edu.Enroll_F = Secondary Educational Enrollment of Females
H.Edu.Enroll = Higher Educational Enrollment
INS_S = Number of Institutions at Secondary Level
INS_SM = Number of Institutions at Secondary Level for Males
INS_SF = Number of Institutions at Secondary Level for Females
INS_H = Number of Institution at Higher Level
GSP_S = Government Spending at Secondary Level

GSP_H = Government Spending at Higher Level
UNEM = Unemployment Rate
GDP_PC = GDP per Capita

C. Stationarity Test

In the time series model, it is required to examine the stationary of data. Dickey and Fuller (1979) introduced the structure for working out non-stationary data, and it is familiar as Augmented Dickey-Fuller (ADF) test. The most considerable part of this method is the testing for unit root.

$$\Delta yt = \beta_1 + \beta_2 t + \phi_{yt-1} + \chi_i \sum_{t=1}^{m} \Delta y_{t-1} + \varepsilon_t \ldots \textbf{Eq. (1)}$$

ϕ and y_t indicates the state of stationarity and the regressors, ε_t is the white Noise and Δy_{t-1} equals $(y_{t-1} - y_{t-2}), \Delta y_{t-2} = (y_{t-2} - y_{t-3})$ and so on. If the calculated statistic appears less than the critical value, *Y* will be considered stationary.

D. Co-integration Test

To test for co-integration, the estimation technique used in this study includes the Johansen-Juselius (1990) co-integration test. If the selected variables are stationary at the first difference, in that case, Johansen Juselius's (1990) co-integration test can be used to examine the results. In which VAR of order *n*:

$$Y_t = A_1 Y_{t-1} + \ldots\ldots\ldots + A_n Y_{t-n} + BX_t + \varepsilon_t \ldots . \textbf{Eq. (2)}$$

Where ε_t representing, the innovation vector, X_t used as the q-vector of the deterministic variable and Y_t is the k-vector [I (1) of time series variables]. Therefore, VAR can be written as:

$$\Delta Y_t = \rho Y_{t-1} + \sum_{i=1}^{m-1} T_i \Delta Y_{t-i} \varphi X_t + \varepsilon_t \ldots\ldots\ldots \ldots \textbf{Eq. (3)}$$

Here we have, $\rho = \sum_{i=1}^{n} A_i - I$ and $T_i = -\sum_{j=i+1}^{n} A_j$

If the matrix ρ comprises, reduce the rank of ($r<k$), in that case, it would be the *k x r* matrices of α and β with the rank of *r*, i.e., $\rho = \alpha\beta$ and β_{Yt} is the integrated order of zero. So, therefore, the matrix can be verified by the mean of reduced rank from that of unrestricted VAR.

E. Error Correction Model (ECM)

Further, a category of multiple time series models is the Error Correction Model (ECM) that can directly estimate the speed of adjustment of a dependent variable to its equilibrium as there is a change in an independent variable. The question retained concerning the long-term relationship is whether the short-term effects are permitted on the dependent variable.

F. Research Process

Initially, the time series procedure includes the assessment of order of integration that is a summary of statistics used to define a unit root process in time series analysis. An ideal time series has stationarity which means that a shift in time doesn't cause an alteration in the shape of the distribution. To examining the unit root problem, the Augmented Dickey-Fuller (ADF) (1979) test will be used. Henceforth, the co-integration equation is estimated by using the test developed by Johansen Juselius (1990), known as Johansen Juselius co-integration test. Ultimately, the Unrestricted VAR approach was employed to estimate the relationship among variables that were not cointegrated. The models used in the paper are the double log (Log-Log) model.

IV. RESULTS AND DISCUSSIONS

Table 2. Descriptive Statistics

	ENR_H	ENR_S	ENR_MS	ENR_FS	INS_S	INS_MS
Mean	299114.0	1292804.	818862.7	473941.2	11003.92	7121.569
Median	68301.00	1004000.	719000.0	285000.0	8200.000	5900.000
Maximum	1594648.	3653000.	2073000.	1580000.	31700.00	18200.00
Minimum	12807.00	244000.0	195000.0	49000.00	1600.000	1300.000
Std. Dev.	457047.0	947407.3	515965.5	433976.0	9541.529	5535.786
Skewness	1.707991	0.808956	0.718716	0.898333	0.914756	0.695996
Kurtosis	4.590104	2.585081	2.495547	2.660955	2.481762	2.067661
Jarque-Bera	30.16941	5.928313	4.931456	7.103785	7.683324	5.964652

Probability	0.000000	0.051604	0.084947	0.028670	0.021458	0.050675
Sum	15254814	65933000	41762000	24171000	561200.0	363200.0
Sum Sq. Dev.	1.04E+13	4.49E+13	1.33E+13	9.42E+12	4.55E+09	1.53E+09
Observations	51	51	51	51	51	51

Table 3

	INS_FS	**INS_H**	**UNEM**	**GDP**	**GSP_H**	**GSP_S**
Mean	3882.353	52.52941	3.533184	497.1904	18.58180	30.55876
Median	2100.000	22.00000	3.570000	384.0864	18.27300	30.26490
Maximum	15600.00	163.0000	7.830000	1428.638	32.23300	37.48520
Minimum	300.0000	6.000000	0.400000	100.3003	11.88200	22.32407
Std. Dev.	4103.838	51.87383	2.011642	359.5356	3.253200	3.864382
Skewness	1.285146	0.961166	0.417153	1.156033	1.519001	-0.177046
Kurtosis	3.457324	2.358868	2.397597	3.294203	8.497922	2.475461
Jarque-Bera	14.48303	8.726119	2.250283	11.54344	73.98111	0.750980
Probability	0.000716	0.012739	0.324606	0.003114	0.000000	0.686953
Sum	198000.0	2679.000	180.1924	25356.71	836.1811	1375.144
Sum Sq. Dev.	8.42E+08	134544.7	202.3351	6463292.	465.6658	657.0717
Observations	51	51	51	51	45	45

Table 2 and 3 represents the values of descriptive statistics. The average enrollment at a higher level of education is approximately 0.299 million, and at the secondary level, the enrollment is about 0.129 million. The skewness measures the degree of asymmetry of the series. The values near zero represent the series is symmetrical around its mean and represents the normal distribution; in table 2, except for ENR_H, all other variables indicate the normal skewness. The kurtosis measures the peakedness or flatness of the distribution of series and kurtosis is the measure of normality of the series. The kurtosis value near 3 indicates the distribution is mesokurtic and normally distributed. In table 2, except ENR_H, all other variables confirm that they are normally distributed and mesokurtic, while the ENR_H is leptokurtic with a value greater than 3. Jarque-Bera test statistics measure the difference of skewness and kurtosis with those from the normal distribution. Jarque-Bera is a test of normality. With HO; Residuals are not normally distributed, and H1; Residuals are normally distributed. The probability statistics show that almost all the variables are normally distributed except for some variables.

Table 4. Results of Augmented Dickey-Fuller Test (ADF)

Variables	***t-Statistics***	***Probability***	***Conclusion***
LENR_SM	-5.935573**	0.0000	I (1)
LENR_H	-6.493819**	0.0000	I (1)
LENR_S	-5.371733**	0.0000	I (1)
LENR_SF	-7.198889**	0.0000	I (1)
LINS_SF	-8.115792**	0.0000	I (1)
LINS_S	-7.485587**	0.0000	I (1)
LINS_SM	-7.313950**	0.0000	I (1)
LINS_H	-5.955370**	0.0000	I (1)
LGDP_PC	-5.958891**	0.0000	I (1)
LUMEN	-6.010262**	0.0000	I (1)
LGSP_S	-4.369808**	0.0011	I (1)
LGSP_H	-7.646288**	0.0000	I (1)

A. Unit Root Test

To check the stationarity of data, the Augmented Dickey-Fuller test was utilized, and the null hypothesis of non-stationarity was rejected at 1% of the significance level. Table 4 contains the result of the ADF Test.

B. Unrestricted Co-Integration Rank Test

Johansen Juselius (1990) developed one of the crucial tests for the examination of co-integration, which is useful to measure the magnitude and symbols of the long-run relationship between variables and to provide marginal values for the stated equation (2.2). The Johansen Juselius co-integration test starts with unrestricted VAR to select optimal lag. After the selection of optimal lag, the Johansen co-integration test was used with (1-p) lag. The lag was selected on the basis of AIC. Johansen Juselius co-integration test provides the evidence of the existence of a long-run relationship between variables, having Cointegration equation by using Trace Test and Max Eigen Statistics. The information shows the existence of two co-integration equations at a significance level of 0.05.

Table 5. Optimal Lag Selection

VAR Lag Order Selection Criteria
Endogenous variables: LENR_H LGSP_H LGDP LINS_H LUNEM
Exogenous variables: C
Sample: 1965 2015
Included observations: 47

Lag	Log	LR	FPE	AIR	SC	HQ
0	-103.1392	NA	6.86e-05	4.601670	4.798494	4.675736
1	114.0245	378.8814	1.94e-08*	-3.575510	-2.394564*	-3.131112*
2	132.7406	28.67153	2.63e-08	-3.308111	-1.143045	-2.493382
3	154.1513	28.24388	3.38e-08	-3.577881*	-0.006187	-1.970314
4	189.0802	38.64476*	2.70e-08	-3.155374	0.555427	-2.022490

** indicates lag order selected by the criterion*
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Table 6. Unrestricted Cointegration Rank Test (Trace)& Max Eigen Test

Hypothesized		Trace Statistics	0.05		Max-Eigen Statistics	0.05	
No. of CE(s)	Eigenvalue	Statistics	Critical Value	Prob.**	Statistics	Critical Value	Prob**
None*	0.723877	110.2669	69.81889	0.0000	54.05017	33.87687	0.0001
At most, 1*	0.504931	56.21675	47.85613	0.0068	29.52844	27.58434	0.0278
At most 2	0.332271	26.68831	29.79707	0.1095	16.96268	21.13162	0.1738

At most 3	0.129264	9.725632	15.49471	0.3024	5.813478	14.26460	0.6373
At most 4	0.088940	3.912154	3.841466	0.0479	3.912154	3.841466	0.0479

Trace test indicates 2 Cointegration eqn(s) at the 0.05 level
Max-eigenvalue test indicates 2 Cointegration eqn(s) at the 0.05 level
** denotes rejection of the hypothesis at the 0.05 level*
***MacKinnon-Haug-Michelis (1999) p-values*

Equation (1.1) Normalized co-integrating coefficients: Long run model

$$LENR\_H_t = 1.0898 LGDP\_C + 1.0433 LGSP\_H + 0.70186 LINS\_H - 0.13078 LUNEM + \varepsilon_t$$

(6.6375) (4.5233) (6.1811) (-3.6500)

The results indicate that except unemployment, all other independent variables sustain a positive relationship to the enrollment at a higher level of education in Pakistan. The outcomes of the paper explain that a one percent increase in GDP per capita brings a 1.0898 percent increase in enrollment at a higher level of education. The per capita GDP is the biggest contributor as a determining factor of enrollment, which proves the income matters more than any other variable to influence the enrollment rate. Bringing a one percent increase in government spending on higher education brought a 1.0433% percent rise in enrollment. This indicates that income and money-related variables are most important in signifying and explaining the determinants of enrollment in Pakistan. This is true because according to the national poverty report 2015-16, the poverty rate in Pakistan in 2013-14 was 29.5% which shows that almost 30% of 120 million people are below the poverty line. In this manner, the monetary variables are crucial to be considered as a determinant of enrollment; furthermore, in Pakistan, the higher. Education is not subsidized completely, and poor people are sensitive to monetary variables. Henceforth these affect the enrollment rate strongly at a higher level of education.

On the other hand, the relationship of unemployment with higher education is negative, and the probable reason behind this negative relationship is the fewer opportunities available in the labor market of Pakistan; adults preferred to go for self-employment rather than get higher education and searching for a formal job. According to World Bank, the rate of self-employment in Pakistan in 2018 was 61.06%, and from the last few years, the trend is upward, which shows that 62% of the total employed labor force run their own businesses without formal jobs. Moreover, the trend of unemployment with the alliance to education is going on increasing for the past few years, which reflects the labor market is failed to play its role in providing jobs to graduated students. This scenario explains the limitation of the labor market in terms of providing jobs to educated people.

Table 7. Error Correction Model

Dependent Variable= LENR_H		
Independent Variable	Coefficients	t-statistics
Constant	0.045478	1.26893
CointEq1	-0.161659	-1.38510
D(LENR_H(-1))	0.159151	0.84648
D(LENR_H(-2))	0.229381	1.24097
D(LGDP_C(-1))	0.200075	0.88677
D(LGDP_C(-2))	0.044608	0.72089
D(LUNEM(-1))	-0.138270	-0.60557

D(LUNEM(-2))	0.038320	0.66977
D(LINS_H(-1))	-0.104826	-0.26256
D(LINS_H(-2))	0.222471	0.69114
D(LGSP_H(-1))	-0.148081	-1.09203
D(LGSP_H(-2))	-0.242201	-2.17686
R2 =0.233, F-Statistics=0.9985, Adjusted R2 = 0.1856		

C. An analysis of Short-run dynamism

A category of multiple time series models is the Error Correction Model (ECM) that can directly estimate the speed of adjustment of a dependent variable to its equilibrium as there is a change in an independent variable. ECM is one of the ways to explain the Multivariate relationships characteristics of economic series. The Error Correction Model identifies the possibilities of short-run relationships. In Error Correction Model (ECM), the adjustment coefficient shows that the previous period deviation from the long-run. Equilibrium is corrected in the current period at an adjustment speed of 16.165%.

D. Diagnostic analysis

The model was tested against any variation and biasness; residual diagnostic tests were employed to see whether series have the problem such as Autocorrelation and Heteroskedasticity or not. Serial Correlation LM Test and VEC Residual Heteroskedasticity Tests confirm the non-existence of autocorrelation and heteroskedasticity problems in the series. The same diagnostic tests were used for the second model to ensure the credibility of logged series against any serial correlation and heteroskedasticity.

Model 2:

$$S.Edu.Enroll_t = \beta_{0_t} + \beta_1 INS\_S_t + \beta_2 GSPS\_S_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t$$

Table 8. Unrestricted Cointegration Rank Test (Trace) and (Maximum Eigenvalue)

Hypothesized		Trace Statistics	0.05		Max-Eigen Statistics	0.05	
No. of CE(s)	Eigenvalue	Statistics	Critical Value	Prob.**	Statistics	Critical Value	Prob**
None*	0.706053	101.1379	69.81889	0.0000	0.706053	51.42293	33.87687
At most 1*	0.417602	49.71494	47.85613	0.0331	0.417602	22.70523	27.58434
At most 2	0.340365	27.00971	29.79707	0.1014	0.340365	17.47488	21.13162
At most 3	0.181697	9.534832	15.49471	0.3182	0.181697	8.421961	14.26460

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
** denotes rejection of the hypothesis at the 0.05 level*
***MacKinnon-Haug-Michelis (1999) p-values*

Equation (1.2) Normalized co-integrating coefficients: 1 co-integrating Equation(s)

$$LENR\_S_t = 0.49193 LGDP\_C + 0.59554 LGSP\_S + 0.81363 LINS\_S - 0.05806 LUNEM + \varepsilon_t$$

(2.0029) (3.0780) (11.3340) (-2.2681)

The second model explained the determinants of enrollment collectively for males and females at the secondary level of education in Pakistan. According to the results from the long-run model of co-integration, it is evident that at the secondary level of education, the major determinant is the number of secondary schools

which strongly impact the enrollment rate more than any other variable. Results advocated that if Government spending on education is increasing by one percent, it proliferate the secondary enrollment by 3.078%. The GDP per capita also sustain the positive association with enrollment, but the significance of income is less than what it was at a higher level of education. Perhaps the basic reason for this is the full subsidization of school fees at the secondary level of education by the Government, so the extent of the effect of income is comparatively less at the secondary level of education.

Table 9. Error Correction Model (VECM)

Dependent Variable= LENR_S		
Independent Variable	Coefficients	t-statistics
Constant	0.359100	2.15834
CointEq1	-0.124239	-1.37500
D(LENR_H(-1))	0.159151	0.84648
D(LGDP_C(-1))	0.22024	0.32917
D(LUNEM(-1))	-0.08194	-0.48742
D(LINS_S(-1))	0.060340	0.45406
D(LGSP_S(-1))	-0.012764	-0.86479
R2 =0.3124, F-Statistics=1.032 , Adjusted R2 = 0.1856		

E. Short Run Dynamism

In Error Correction Model (ECM), the adjustment coefficient demonstrates that the previous period abnormality from long-run equilibrium is adjusted in the current period at a correction speed of 12.42%.

Model 3:

$$S.F.Edu.Enroll_t = \beta_{0t} + \beta_1 INS\_SF_t + \beta_2 GSPS\_S_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t$$

The third model attempted to estimate the determinant of enrollment for females solely at the secondary level of education in Pakistan. The purpose of using the separate model for males and females was to capture the disparity effect among both genders in many ways, such as the impact of income on enrollment is the same for boys and girls in determining enrollment or not? The impact of government spending can improve female enrollment more than boys or not? Lastly, is a number of institution matters a lot for females as compared to males or not?

F. Unrestricted Vector Autoregressive Model

Vector autoregression (VAR) is a stochastic process model used to capture the linear interdependencies among multiple time series. VAR models generalize the univariate autoregressive model (AR model) by allowing for more than one evolving variable. All variables in a VAR enter the model in the same way: each variable has an equation explaining its evolution based on its own lagged values, the lagged values of the other model variables, and an error term. Unrestricted Vector Autoregressive method is used for the third model because for the third model; there was no evidence found for the existence of the Johansen Juselius co-integration.

Table 10. VAR Estimation

Vector Autoregression Estimates Standard errors in ( ) & t-statistics in [ ]					
	LENR_FS	LGDP_PC	LGSP_S	LUNEM	LINS_FS

LENR_FS	0.834449	0.082771	-0.308052	0.918962	0.077963
	(0.08385)	(0.14017)	(0.16506)	(0.60826)	(0.16480)
	[9.95181]	[0.59052]	[-1.86633]	[1.51081]	[0.47307]
LGDP_PC	0.141451	0.716403	0.183151	0.587737	0.146721
	(0.053506)	(0.08944)	(0.10533)	(0.38815)	(0.10516)
	[2.700818]	[8.00952]	[1.73887]	[1.51422]	[1.39516]
LGSP_S	0.180081	0.356192	0.107100	-0.658949	-0.199181
	(0.08682)	(0.14514)	(0.17091)	(0.62983)	(0.17065)
	[2.074140]	[2.45417]	[0.62664]	[-1.04624]	[-1.16722]
LUNEM	0.019841	-0.000404	0.016556	0.682573	0.006612
	(0.01464)	(0.02448)	(0.02882)	(0.10621)	(0.02878)
	[1.355259]	[-0.01650]	[0.57442]	[6.42638]	[0.22976]
LINS_FS	0.189694	0.103559	0.187654	-1.304909	0.835570
	(0.08415)	(0.14067)	(0.16566)	(0.61046)	(0.16540)
	[2.25415]	[0.73616]	[1.13279]	[-2.13757]	[5.05182]
C	0.966520	-1.317466	4.373266	-2.424320	0.159597
	(0.59914)	(1.00156)	(1.17942)	(4.34631)	(1.17759)

Table 11. Equation Estimation

Dependent Variable: LENR_FS
Method: Least Squares
*LENR_FS = C(1)*LENR_FS(-1) + C(2)*LGDP(-1) + C(3) *LGSP_S(-1) + C(4)*LUNEM(-1) +C(5)*LINS_FS(-1) + C(6)*

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.834449	0.083849	9.951811	0.0000
C(2)	0.141451	0.053506	2.700818	0.0098
C(3)	0.180081	0.086822	2.074140	0.0439
C(4)	0.019841	0.014642	1.355259	0.1823
C(5)	0.189694	0.084153	2.254154	0.0299
C(6)	0.966520	0.599143	1.613172	0.1148

R-squared	0.996252	Mean dependent var	12.78720
Adjusted R-squared	0.995771	S.D. dependent var	0.950750
S.E. of regression	0.061825	Akaike info criterion	-2.605448
Sum squared resid	0.149071	Schwarz criterion	-2.364560
Log-likelihood	64.62259	Hannan-Quinn criteria.	-2.515648
F-statistic	2073.262	Durbin-Watson stat	2.115834
Prob(F-statistic)	0.000000		

The Unrestricted VAR is also required to start with the selection of optimal lag and then run the Unrestricted VAR model. VAR treats all the variables as endogenous variables, and there are no exogenous variables, and each variable has its own equation. VAR model only provides the t-statistics, and to estimate the significance of variable, the p-values are required, and VAR provides the way to measure each equation separately to see the significance of each variable by considering one variable as dependent and the other as an independent. The results from the estimated equation show that unemployment is insignificant for females in determining the enrollment of females at the secondary level. The GDP per capita is more strongly and significantly explains the enrollment of females. Government spending and a number of institutions do influence the enrollment of females at the secondary level of education positively.

Table 12. Stability Test (AR Roots Table)

Roots of Characteristic Polynomial
Endogenous variables: LENR_FS LGDP LGSP_S LUNEM LINS_FS
Exogenous variables: C

Root	Modulus

0.997034	0.997034
0.906750	0.906750
0.772624	0.772624
0.249844 - 0.118950i	0.276715
0.249844 + 0.118950i	0.276715
No root lies outside the unit circle. VAR satisfies the stability condition.	

Table 13. Wald Test

Wald Test:			
Test Statistic	Value	df	Probability
Chi-square	6.036862	2	0.0489
Null Hypothesis: C(4)=C(5)=0 Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(4)		0.029841	0.014642
C(5)		0.189694	0.084153
Restrictions are linear in coefficients.			

Table 14. Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.132270	Prob. F(1,38)	0.7181
Obs*R-squared	0.156092	Prob. Chi-Square(1)	0.6928

Table 15. Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.229398	Prob. F(5,39)	0.0706
Obs*R-squared	10.00289	Prob. Chi-Square(5)	0.0752
Scaled explained SS	8.117986	Prob. Chi-Square(5)	0.1499

The results of the residual diagnostic analysis show that there is no autocorrelation, heteroskedasticity problem in the series, as well as these series did not void the assumption of normality and stability.

Model 4:

$$S.M.Edu.Enroll_t = \beta_{0_t} + \beta_1 INS\_SM_t + \beta_2 GSPS_t + \beta_3 UNEMP_t + \beta_4 GDP\_PC_t + \varepsilon_t$$

Table 16. Unrestricted Vector Autoregression

Vector Autoregression Estimates
Sample (adjusted): 1971 2015
Included observations: 45 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	LENR_MS	LGDP	LINS_MS	LUNEM	LGSP_S
LENR_MS(-1)	0.847490	0.123199	0.058257	0.530662	-0.322709
	(0.08859)	(0.16265)	(0.11994)	(0.72351)	(0.19005)
	[9.56642]	[0.75744]	[0.48572]	[0.73345]	[-1.69798]
LGDP(-1)	0.100407	0.742957	0.040411	0.444807	0.202851
	(0.04620)	(0.08482)	(0.06255)	(0.37729)	(0.09911)
	[2.173452]	[8.75938]	[0.64611]	[1.17895]	[2.04678]
LINS_MS(-1)	0.136685	0.117631	0.912081	-0.772525	0.078082
	(0.06512)	(0.11957)	(0.08817)	(0.53185)	(0.13971)
	[2.098906]	[0.98381]	[10.3448]	[-1.45251]	[0.55889]
LUNEM(-1)	-0.027324	-0.003578	0.009957	0.808654	-0.009811
	(0.01126)	(0.02067)	(0.01524)	(0.09194)	(0.02415)
	[-2.42729]	[-0.17310]	[0.65328]	[8.79561]	[-0.40626]
LGSP_S(-1)	0.071892	0.367511	-0.135441	-1.017244	0.160891
	(0.07487)	(0.13747)	(0.10137)	(0.61148)	(0.16063)
	[0.96020]	[2.67345]	[-1.33614]	[-1.66357]	[1.00165]
C	0.891271	-2.330182	0.233281	0.511340	5.332300
	(0.75659)	(1.38912)	(1.02433)	(6.17907)	(1.62313)
	[1.17801]	[-1.67746]	[0.22774]	[0.08275]	[3.28519]

Table 17. Equation Estimation

Dependent Variable: LENR_MS
Method: Least Squares
Included observations: 45 after adjustments
*LENR_MS = C(1)*LENR_MS(-1) + C(2)*LGDP(-1) + C(3) *LINS_MS(-1) + C(4)*LUNEM(-1) +C(5)*LGSP_S(-1) + C(6)*

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.847490	0.088590	9.566419	0.0000
C(2)	0.100407	0.046197	2.173452	0.0325
C(3)	0.136685	0.065122	2.098906	0.0416
C(4)	-0.027324	0.011257	-2.427289	0.0194
C(5)	0.071892	0.074872	0.960200	0.3429
C(6)	0.891271	0.756591	1.178008	0.2459
R-squared	0.991609	Mean dependent var		13.54635
Adjusted R-squared	0.990533	S.D. dependent var		0.583371
S.E. of regression	0.056760	Akaike info criterion		-2.776397
Sum squared resid	0.125647	Schwarz criterion		-2.535509
Log-likelihood	68.46893	Hannan-Quinn criteria.		-2.686596
F-statistic	921.7744	Durbin-Watson stat		1.402357
Prob(F-statistic)	0.000000			

The results from the estimated equation show that the GDP per capita does influence the enrollment of boys at the secondary level, but the magnitude of influence is much lower than from females. This exactly explains the culture of Pakistan, in which boys are considered as ahead of family, and the impact of change in GDP per capita is less on boys, which shows less sensitivity towards income in case of boy's enrollment. The unemployment rate shows a significant negative association with the dependent variable, but for girls, it was insignificant. The probable reason for this is the culture of Pakistan in which, on average, females are not doing any job, but they only manage their household activities and keep focusing on their families. But for males, the high unemployment rate provides the signals that there are fewer opportunities in the labor market, and instead, to get admitted in school, it is better to learn some technical skills and go for self-

employment. The reason is quite genuine because the statistics show that from the last 5 decades the rate of enrollment of boys is decreasing every year which shows that tendency to go school in boys are lessening with every passing year.

V. CONCLUSION AND RECOMMENDATIONS

In this paper, we have examined (i) the relationship between enrollment rate and educational financing by government in terms of education spending and a number of institutions in Pakistan, (ii) the effect of per capita GDP on enrollment rate at a secondary and higher level of education, (iii) impact of labor market opportunities on the enrollment rate of both genders males and females. The empirical tools used in this paper are grounded on the technique of Johansen Juselius.

Co-integration test, Error Correction Model, and Unrestricted Vector Autoregressive (VAR) method. Normalized Co-Integration Coefficient explains the long-run relationship among variables in the presence of co-integration, and Unrestricted VAR affirms the significance of the relationship in the absence of co-integration.

A. Conclusion

Previous studies have mostly dedicated their focus to explain the determinants of enrollment by utilizing primary data based on surveys of one or two years. Those studies were lacking in dynamism because of the absence of time series data which can assist in providing the larger picture of the concerned issue. The study in this paper enhances the analysis by adding time series data and labor market situation as key elements, which have largely been ignored in the literature. Our study contributes to the empirical literature with the findings (i) that there is a significant positive relationship between government financing mechanism and enrollment at a secondary and higher level of education, (ii) the analysis suggested that government spending has a stronger impact on the higher enrollment as compared to the secondary level enrollment, (iii) the GDP per capita sustain the positive relationship with enrollment at both secondary and higher level of education, in addition, the impact of GDP per capita is stronger for females as compared to males, (iv) outcome advocated that unemployment sustain negative association with enrollment at both levels of education, but the extent of significance is much huge at a higher level than of secondary. Lastly, the results suggested that unemployment is insignificant for females at the secondary level of education.

B. Recommendation

The outcomes of this study suggest several promising directions for future research. Firstly it would be interesting to analyze the relationship by using both secondary and primary data, which can provide comprehensive results both at macro and micro levels. Lastly, it will be beneficial for literature if the relationship could find from the perspective of two major agents of economy– Government and Household.

C. Policy implications

As a final point, the study offers an empirical basis for promoting education and achieving a high enrollment rate. It has two policy implications for Pakistan. First, the government should undertake social reforms in order to create awareness among people, so they send their girls to schools, and ultimately, the gender gap will be narrowed down. Second, the government has to pay more attention to educational financing, and it can create a mechanism for cash transfers to the poor so that the impact of low income, which leads towards low enrollment, could be normalized for poor people.

REFERENCES

[1] Afzal, M., Rehman, H. U., Farooq, M. S., & Sarwar, K., Education and economic growth in Pakistan: A cointegration and causality analysis. International Journal of Educational Research, 50(5–6) (2011) 321–335. https://doi.org/10.1016/j.ijer.2011.10.004

[2] Arai, K., A Cross-Sectional Analysis of The Determinants of Enrollment In Higher Education in Japan. Hitotsubashi Journal of Economics, 30(2) (1989) 101–120.

[3] Arif, G. M., Saqib, N. U., Zahid, G. M., & Khan, A. H., Poverty, Gender, and Primary School Enrolment in Pakistan. Pakistan Development Review, 38(4) (1999) 979–992.

[4] Aslam, M., Education Gender Gaps in Pakistan : Is the Labor Market to Blame ? Economic Development and Cultural Change, 57(4) (2009) 747–784.

[5] Baldacci, E., Clements, B., Gupta, S., & Cui, Q., Social Spending, Human Capital, and Growth in Developing Countries : Implications for Achieving the MDGs (No. wp/04/217), (2004).

[6] Barro, R. J., Economic Growth in a Cross-Section of Countries. The Quarterly Journal of Economics, 106(2) (1991) 407–443.

[7] Birdsall, N., Ross, D., & Sabot, R., Underinvestment in Education : How Much Growth has Pakistan Foregone ? The Pakistan Development Reviewpakistan de, 32(4) (1993) 453–499.

[8] Burney, N. A., & Irfan, M., Determinants of Child School Enrolment : Evidence from LDCs Using Choice-Theoretic. International Journal of Social Economics, 22(1) (1995) 24–40.

[9] Carsamer, E., & Ekyem, E., An Empirical Analysis of Government Educational Expenditure on Enrolments at Primary and Secondary School Levels in Africa.International Journal of Economics, Commerce and Management, 3(7) (2015) 273–294.

[10] Devi, S., & Devi, A. (2014). Determinants of School Enrolment in Pakistan. Journal of Education and Practice, 5(17), 74–83.

[11] Hassan, G., & Cooray, A., Journal of Asian Economics Effects of Male and Female Education on Economic Growth : Some Evidence From Asia, Journal of Asian Economics, 36 (2015) 97–109.

[12] Huijsman, R., Kolek, T., Kodde, D. A., & Ritzen, J. M. M., An Empirical Analysis of College Enrollment in the

Netherlands. De Economist, 134(2) (1986). https://doi.org/10.1007/BF01706288

[13] Hussain, A., National human development report 2003: poverty, growth, and governance. Karachi, Oxford university press, (2003).

[14] Hussain, Z., Khilji, B. A., Mujahid, M., Javed, Z. H., & Khilji, B. A., Impact Of Education on Socio-Economic Status of Villagers Life : A Case Study of Shrien Wala Village of Faisalabad, 46(2) (2018) 133–146.

[15] Khalil, M. A., Khalil, R., Arshad, I., & Khalild, M. K., Global Trade and Technology as Indicators of Competitiveness and Economic Development : A Study of Pakistan â€™ s Position in International Market, The Journal of Social Sciences Research, (2018). (March 2019). https://doi.org/10.32861/jssr.spi2.498.504

[16] Khan, S. M., Amjad, R., & Din, M. (2005). Human Capital and Economic Growth in Pakistan. The Pakistan Development Review, 44(4), 455–478.

[17] Khan, S. R., Mahmood, N., & Hussain, F., AN Appraisal of School Level Enrollments and Facilities in Pakistan 1970/71 - 1982/83. Pakistan Economic and Social Review, 24(2) (1986) 83–112.

[18] Mani, S., Hoddinott, J., & Strauss, J., Determinants of Schooling : Empirical Evidence from Rural Ethiopia. Journal of African Economies, 22(5) (2013) 693–731. https://doi.org/10.1093/jae/ejt007

[19] Memon, F., & Jonker, L., Educational level and Family Planning among Pakistani Women: A Prospective Explorative Knowledge, Attitude and Practice Study. Middle East Fertility Society Journal, 23(4) (2018) 464–467.

[20] Moretti, E., Private and Social Returns to Education. Rivista Di Politica Economica, 96(3) (2006) 3–46.

[21] Nidup, J., Determinants of School Enrolment In Bhutan : Does Income Matter To Poor ?, Asian Journal of Economic Modelling, 4(2) (2016) 95–103.

[22] psacharopoulos, George, & Patrons, harry Antony, (2018). Returns to Investment in Education A Decennial Review of the Global Literature (No. wps8402).

[23] Sabir, M., & Abdullah, T., Gender and Public Spending on Education in Pakistan: A Case Study of Disaggregated Benefit Incidence. The Pakistan Development Review, 41(4) (2002) 477–493.

[24] Schultz, T. P., Why Governments Should Invest More to Educate Girls. World Development, 30(2) (2002) 207–225.

[25] Schultz, T. W., Investment in Human Capital. The American Economic Review, 51(1) (1961) 1–17.

[26] Shapiro, D., & Oleko Tambashe, B., Gender, Poverty, Family Structure, and Investments in Children's Education In Kinshasa, Congo. Economics of Education Review, 20(4) (2001) 359–375.

[27] Singh, P. K., & Butool, F., Educational Levels of Muslims and Their Work Participation in the Selected States of India. SSRG International Journal of Economics and Management Studies, (2015) 2(April).

[28] Song, L., Appleton, S., & Knight, J., Why Do Girls in Rural China Have Lower School Enrollment? World Development, 34(9) (2006) 1639–1653. https://doi.org/10.1016/j.worlddev.2005.12.009

[29] Subbarao, K., & Raney, L., Social Gains from Female Education Study, (1992). (women in development No. was 1045).

[30] Sultana, M., & Haque, M. S., The Cause of Low Enrolment of females in Secondary Education : A Comparative Study between Bangladesh and Pakistan. International Journal of Development Research, 8(9) (2018) 23110–23116.

[31] Zimmerman, F. J., Determinants Of School Enrollment And Performance In Bulgaria : The Role Of Income Among The Poor And Rich. In Contemporary Economic Policy, 19 (2001) 87–98.