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IMPACT OF HUMAN CAPITAL AND SOCIAL CAPABILITIES ON ECONOMIC GROWTH OF PAKISTAN: A TIME SERIES ANALYSIS

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ABSTRACT

Theoretically, human capital has a significant relationship with economic growth. In this regard, the present study was conducted to determine the conditions that have a significant and positive relationship with economic growth. The main objective of the study was to explore the impact of human capital and social capabilities or skills on the economic growth of Pakistan. The study estimates the impact of human capital and social capabilities on economic growth of Pakistan by using time series data from the period of 1980-2018 taken from World Bank. Autoregressive distributed lag framework is used for the valuation of variables relationship and direction of connection of variables. Human capital influenced by education expenditure, social capabilities, gross fixed capital formation (GFCF) and children mortality. This study indicates the role of human capital in growth and development of Pakistan. Results showed that health and education are the two main sectors which need significant attention of government. In addition, more investment on human capital can increase the social capabilities. Final consumption expenditure depends on current economic conditions of a nation. Results showed progressive human capital influence economic growth due to social capabilities. These objectives can be attained through sharing the suitable amount of GDP to these sectors.

Keywords: Human capital; Social capabilities; Time series data; Pakistan.

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INTRODUCTION

Human capital is a broad term which shows the various types of investments on individual. Simply, it is an investment on human skills through improving their health and education, which ultimately increase the knowledge and human capabilities (Schultz, 1961). Literature shows that economic development cannot be possible without human capital. Human capital which is tool of growth that shows the skills, knowledge, tendency, opinion and other related traits of production (Goode, 1959). Harbison and Myers (1964) supported this idea that economists use oftenly the term human capital for health, human capabilities and education that improve the work rate of a nation. It can be taken as advanced expertise, information and the capability of people that are required for construction, goods and services in the labor market.

The concept human capital has been started after the works of Becker (1964), Uzawa (1965), Mincer (1970), Rosen (1976) and Schultz (1961). Harbison (1971) documented that wealth of nation is logically identified through its extent of human capital. The difference in socio economic level among the different countries of the world is not only measured by abundance of their natural resources and physical capital but also determined through stock of quality and quantity of human resources. Bergheim (2005) stated that human capital is the most important to enhance efficiency of labor and physical capital. Schultz (1961) also explained that human capital is a main component that increases the resources of firm and supports the workers to raise the output to maintain the competitive benefits.

In economics, the word human capital may be used during 1890s (Fisher, 1897) however it became more famous after publishing of article of Mincer (1958) in Journal of Political Economy. Furthermore, it is a combined theoretical concept that describes the skills, knowledge, capabilities and other characteristics present within people which are associated with economic activities. Human capital encompasses all the investments on human that establish their skills (Becker and Gary, 1962). The theory of human capital is based on expectations that the benefits of workers, training and education increase the marginal physical performance of labour. Performance of firms is closely associated with the payment and benefits of workers which positively enhance the behaviour of workers towards the work (Blanchflower, 1991). Todaro and Smith (2003) documented that human capital is an economic value which is enclosed by education, health and human abilities that increase the productivity and it is a valuable source of a country. According to Schultz, Becker, Mincer concept of basic theory of human capital, which shows that investment in human capital through improving health and education, will increase the work productivity of workers or labour. It can be indicated that in growth theories, human capital has great significance. In human capital education and health are considered as key components regarding improving human capabilities (Todaro and Smith, 2009).

Social capabilities indicate the significance of potential to achieve modern technology. In the catching up process, it attracts capital and participates in universal markets. This technique indicates the ability of country and its growth rate, if country is technically backward but more advanced regarding social activities (Abramovitz, 1986). Institutional activities are also come along with to economic progress. Abramovitz (1986) stated the significance of social capabilities in diffusion and adoption of technology. Further he documented that improvement in human capital leads to economic growth. The components of social capabilities permit economic experts to maximize their capabilities to improve quality of company. In an economic system, if human capital is properly exploited, it can affect the productivity of system.

Physical capital, social capital and human capital have association with each other. Physical capital is developed through modifications in substances that help the production while human capital is generated through transforms in human that conduct capabilities and skills which enable them to act in different sense. Similarly, social capital develops the relations between people and that help the action. If physical capital is integrated in visible material form and less tangible, then human capital is less tangible. Human capital is a collection of characters and qualities such as knowledge, training, experience, decision, intelligence and understanding that are present in a person or group of individuals in a population. Social capital and human capital has relation with each other.

Abramovitz (1995) discussed that social capabilities principally comprised of different components that link to basic social attitudes of people and political institution than the capacity to utilize modern skills or techniques. According to common factors, various dimensions of social capabilities such as autonomy, accountability and transformation are derived. Another element is the capacity to adopt new technology that should be interchangeable at social level. It shows capacity of an economy to share the productive sources to economic activities including labour, and its willingness to be engaged with the risks of the international economy. Transformation is process of social capabilities that contains four indicators that are agriculture, labour market, financial market and technology. Financial structure is used to finance the consumption pattern. Jadoon et al. (2015) monitored the effects of trade liberalization and human capital of the lower and high income Asian countries on the growth during 1981-2012. They also investigated effects of open trade and its indirect effects on growth. Fixed effect model was used for estimation. Two econometric models were used. Dependent variable was human capital while trade liberalization, dependency ratio and per capita income were independent variables. They also used gross capital formation labor force and human capital variables. The conclusion showed that effect of open trade on human capital was optimistic on both groups however more important for those countries who are developed due to skilled human capital. It indicated that 1 % increase in trade to GDP ratio that was lead to 0.05 % increase in school enrollment.

Okoro et al. (2014) analysed the improvement in economic growth due to human capital development during 1970- 2011 in Nigeria. The ordinary least square analysis was used to estimate the results. GDP was dependent variable and primary, secondary, tertiary school enrolments were independent variables. The conclusion indicated that has significant impact of economic growth and human capital with each other and overall optimistic effects on economic growth of Nigeria. Primary, secondary, tertiary school enrolments have linear relationship with GDP. Sammar and Waqas (2014) investigated the economic growth and human capital formation in Pakistan the period of 1979- 2010. Furthermore, to estimate short run and long run relationship between human capital and economic growth in Pakistan. Different multivariate and univariate techniques were used to estimate cointegration between variables. ADF unit root test and Johansen co integration approach were used. Error correlation model was used to analysis the long and short run relation among variables. Education, mortality rate in children, GDP and fixed capital formation variables were used as independent variables. The human capital was more prominent production factor while education and health were also important contributors of human capital. Education and health were factors that increased the productivity factor and enhanced the economic growth. Result showed long run relation between economic growth and human capital. Effect of education enrolment index was positive on economic growth. Other factors had important effects on economic growth.

Minhaj (2018) studied the impact of government spending, private investment and trade deficit on the welfare of Pakistan during 1972-2017. The objective of this study was to determine the effect of different components of government expenditures like education, health, subsidies and law and order on economic growth. ARDL was used to estimate the results. Per capita income was a dependent variable, govt. expenditure on health, education, subsidy and law order were independent variables in first model. Employment rate was dependent variable and independent variables were private investment, current account deficit used in second model. The empirical results revealed that all elements of government spending had positive and significant long run combination with entity's welfare variable namely per capita income. Other factor like law and order expenditures had negative and non-significant effects on economic growth. On other hand in employment level, govt. expenditure on education revealed long term significant effects on employment. Govt. expenditure on health showed non-significant effects on employment. Jeffrey (2018) explored the interrelationship among economic progress and expenditure on education for Ivory Coast from 1970 to 2015. Results showed constructive and positive influence of govt. expenditure on education which improved economic growth for short term. The conclusion showed a unidirectional causality link among different variables.

Alper and Demiral (2016) investigated public social expenditures and their effects on economic growth during 2002- 2013. Feasible generalized least squares estimator was used. GDP per capita used as dependent variable. Total public expenditures on health, social protection and education as a percentage of GDP were independent variables. The conclusion indicated that impact of social protection, health and education expenditures on economic growth was positively significant. Government spent expenditures on education was best contributor for growth of economy. The study concluded that social expenditures in all three aspects devoted significantly to economic growth. Altiner and Toktas (2017) predicted the link between education, financial growth and human capital during 2000-2014 in developing countries. Fixed effects estimator was applied to measure the correlation between human capital stock and economic growth. Wald test used to estimate the heteroscedasticity. GDP per capita was a dependent variable whereas primary to tertiary enrollment rate, gross fixed capital and total labour force were used independent in model. The estimated results indicated that all variables except primary school enrolment rate had positive and vital effect on economic growth. Secondary school enrolment rate has increased impact on financial growth. It was resolved that the impact of primary school enrolment rate on economic growth was negative. 1 % Gross fixed capital increased financial growth through 0.008 %.

Banerjee (2012) investigated economic growth as influenced by human capital in 55 countries during 1980-2007. The study related to identify the relationship among quality composition of human capital,

technological change and its long run impact on economic growth. Real GDP per capita was dependent variable. Random effect model used to measure estimation. Primary, secondary, tertiary education, increase in occupation, progress or increase in average years of education, log of initial average years of education, logarithm of real per Capita GDP and investment share of GDP were independent variables. Education (primary and secondary) has major effect on rate of technological change. But tertiary education has negative impact. Result indicated that stock of human capital was employed in research sector and technological advance was greater and that drive to faster growth. Chani et al. (2012) depicted the relationship between financial development and human capital formation (HCF) in Pakistan during 1972-2009. Gross domestic product taken as reliant variable and HCF, labour force and investment in physical capital taken as independent variables. Granger causality test and auto regressive distribution lag used to measure the long term relationship amongst the variables. The result of co integration recorded that variable were co integrated with each other. These variables had strong and long run relations. Causality test showed that bidirectional causality association between HCF and economic development. Asset in human capital and labour force were static at first variance.

Victoria (2015) interrogated and explored the effect of human capital investment on financial progress in Nigeria during 1982-2011. He also identified the relationship among investment in education, health and financial growth. Johansen Cointegration and ordinary least square techniques used to review the results. Real GDP was reliant variable while govt. expenses on education, health, GCF, primary, secondary and tertiary enrolment rate were independent variables. The results demonstrated that the long run association present among expenses on health, education and financial growth. Expenditure on education, health, gross capital formation, enrolment rate (secondary and tertiary) has significant and positive impact on financial growth. Idenyi et al. (2016) analyzed the correlation between financial growth and HCD, effect of govt. expenses on health and education on Nigerian economy during 1970-2013. Augmented Dickey fuller and Philip Person test used to estimate the impact. Co integration technique used to determine the effects. GDP was dependent variable. Expenses on health and education were independent variables. Outcomes depicted that HCD factors have significant impact on economic growth. Total expenses on health and education exhibited optimistic effects on financial growth. This result showed that 1% increase in expenditure on education led to increased 23.5 % GDP. There was an optimistic long term correlation between HCD and financial growth in Nigeria.

The general objective of this study is to explore the impact of human capital and social capabilities on economic growth in case of Pakistan by using time series data from 1980-2018 and to suggest policy recommendations.

METHODOLOGY

The study estimates the impact of human capital and social capabilities on economic growth of Pakistan by using time series data from the period of 1980-2018 taken from World Bank. Child mortality rate, Gross fixed capital formation, final consumption expenditure percentage of GDP, govt. education expenditure and GDP per capita are the variables that are used for estimation of this study.

Theoretical Framework

Human capital can be defined as it is a quality or an intangible resource which cannot be indexed on a community's balance sheet. Human capital is the economic value of an employee's skills and experience. It consists of training, health, skills, knowledge, education and other values such as loyalty and punctuality. Human capital concept admits that all labour is not equal, but workers can reform the quality of that capital through labourer. Education, training, skills, experiences and capabilities are all the economic value of a worker and also for economy as a whole. Theodore Schultz sketched worked regarding human capital theory in the 1960s and as an economist, initiated a design to train and invest in education and human capital. After this, education out-looked as an investment just as an investment in physical capital, with the

opinion that, education and schooling raised the productivity of workers and systems (Schultz, 1971). Human capital theory detects education as an appliance which promotes the stock of human abilities present in a country that measures the level of economic growth. Moreover, the theory clarifies that the stock of human output can be utilized in an economy and can be invested in human and physical capital.

Trevor Swan and Robert Solow presented the neoclassical growth models during 1950's. In the economy, the output gains in respect to more input of labour and capital. Human capital and human health variables have no function in this model. In this model economy is beneath the law of diminishing return to scale. According to assumptions, this growth model incur some significance to the economy; specially that capital stock jump up and economy growth slowdown, in order to possess the economy promoting it must use capital in technological progress. Technological progress is taken as exogenous in this model. The factor of production was labour and capital and the model showed positive but diminishing marginal productivity. Later, it was noticed that there were few variables which were not involved in this model however they caused reduction in economic growth. In the mid-1980s a new chart was organized in literature, by Paul Romer (1986) that is called endogenous growth model. Endogenous growth model attempts to describe how human capital enhances the growth (Makiw et al., 1992). This model consists of skills, knowledge and innovation as determinative factors for development. So investment in training and education were efficient distributors for workers to motivate them for more work and to attain financial growth. In this regard, the model tried to imagine a growth fabricated internally. In this field the strong economists were Paul Romer (1986) and Lucas (1988). According to Lucas (1988), investment in human capital has all over impact that proceeds the technology level through the external impact of human capital (Oketch, 2006). On the other hand Romer's model interrelated with human capital to change in technology would outcome in innovation and technological developments. In the respect of endogenous growth model, the interesting variables in it are indicators within physical and human capital to pinch the factor of production. Health, education, training and increase in population score. It is significant to estimate country's economic freedom, to obtain positive externalities from education. In other words, human capital and technology are endogenous to the system. It can increase the recognition of the mysteries of fast and elongate supportable large growth performances of East Asian economies.

In the time series model, before analysis it is essential to check the short and long run association between variables. To measure the long run correlation between financial growth and human capital, Cointegration test is used. Augmented Dickey Fuller unit root test is applied to measure static position between variables. Autoregressive distributed lag model (ARDL) used to estimate the short and long run correspondence between variables.

Augmented Dickey Fuller (ADF) Unit Root Test

Dickey and Fuller introduced new test unit root test. This test was advanced to clarify the problems of autocorrelation because lagged terms dependent variables inserted as an independent variables. The lag lengths are either resolute through Akaike information criterion or through Schwartz, Bayesian Criterion (SBC) such as lag length which naturally whiten the residual. To test the unit root ADF give following three possibilities. These are three equations that provide three different possibilities.

Autoregressive Distributed Lag (ARDL)

For the valuation of variables relationship and direction of connection of variables is used autoregressive distributed lag framework. This approach developed by Pesaran and Perasan (1997) and Pesaran and Shin (1995). In this approach no need to relate pre testing variables and this test is available on the existing level of variables. Cointegration is applied to measure long run relation between the variables. The study uses the bounds testing procedure to guess the presence of a long run combination between variables. Pesaran et al. (2001) proposed two critical bounds to test the F statistics. There is two bounds i.e. lower bound and upper bound. Upper bound concludes that the variables are correlated at first difference and there present Cointegration between variables. On the other hand, lower bound considers that the variables are

integrated at level and there is no Cointegration between the variables. F statistics test value must be greater than critical value of bounds, so it shows that there is long run association amongst variables irrespective of their order of combination. If F- statistics value is less than critical lower bound then null hypothesis of no Cointegration is acknowledged means that there is no long run association between the variables. If F- statistics is present between the critical bounds then the test is taken as inconclusive.

The aggregate production called Cobb-Douglas production, which can be written as;

$$Y = A^* f(L, K, H) \tag{1}$$

Where A^* is the factor productivity expressed through the state of technology, L is labour force, K is capital stock, H is human capital.

Using the Cobb-Douglas form;

$$Y = A \cdot K^\alpha \cdot L^\beta \cdot H^\gamma \cdot \mu_t \tag{2}$$

According to endogenous growth theory $\alpha + \beta + \gamma > 1$, it means return to scale is rising.

The model below was occupied in trial to drive the effect of investment in education and health on economic growth in Pakistan.

$$GDP = f(CMR, GEE, FCE, GFCF) \tag{3}$$

$$GDP = \beta_0 + \beta_1 CMR + \beta_2 GEE + \beta_3 FCE + \beta_4 GFCF \tag{4}$$

Situated on the assumption of linearity of the variables, we take Log of both sides. So the model will be

$$GDP = \beta_0 + \beta_1 \text{Log}CMR + \beta_2 \text{Log}GEE + \beta_3 \text{Log}FCE + \beta_4 \text{Log}GFCF + \mu_t \tag{5}$$

The variables in the equation can be explained as;

GDP= Gross Domestic Product

CMR= Child Mortality Rate

GEE= Government Education Expenditure

FCE= Final Consumption Expenditure % of GDP

GFCF= Gross Fixed Capital Formation

μ_t = Error term

Table 1 shows description of variables and indicators.

Table 1. Variables and definition.

Variables	Description	Indicator
Economic growth	It indicates the size of an economy of a nation.	Gross domestic Product/ GDP
Physical Capital	A physical capital which is used in production process	Gross Fixed Capital Formation (GFCF)
Human Capital	Human capital is collected if human beings are educated and healthier. Human capital shows optimistic influence on economic growth.	Education: Government Education expenditure (GEE) Health: Child Mortality Rate. (CMR)
Social Capabilities	It relates to transformation by the enhanced efficiency in the use of factor of production.	Final Consumption Expenditure(FCE)

Gross Domestic Product

It determines the overall goods and services produced within boundary of country in a year. It exhibits economic growth of a nation. In current study, GDP is taken as a dependent variable. Figure 1 denotes that GDP in Pakistan was higher in 1980 and decreased in 2018, and significantly influenced efficiency of government because GDP is the most important determinant factor of economy.

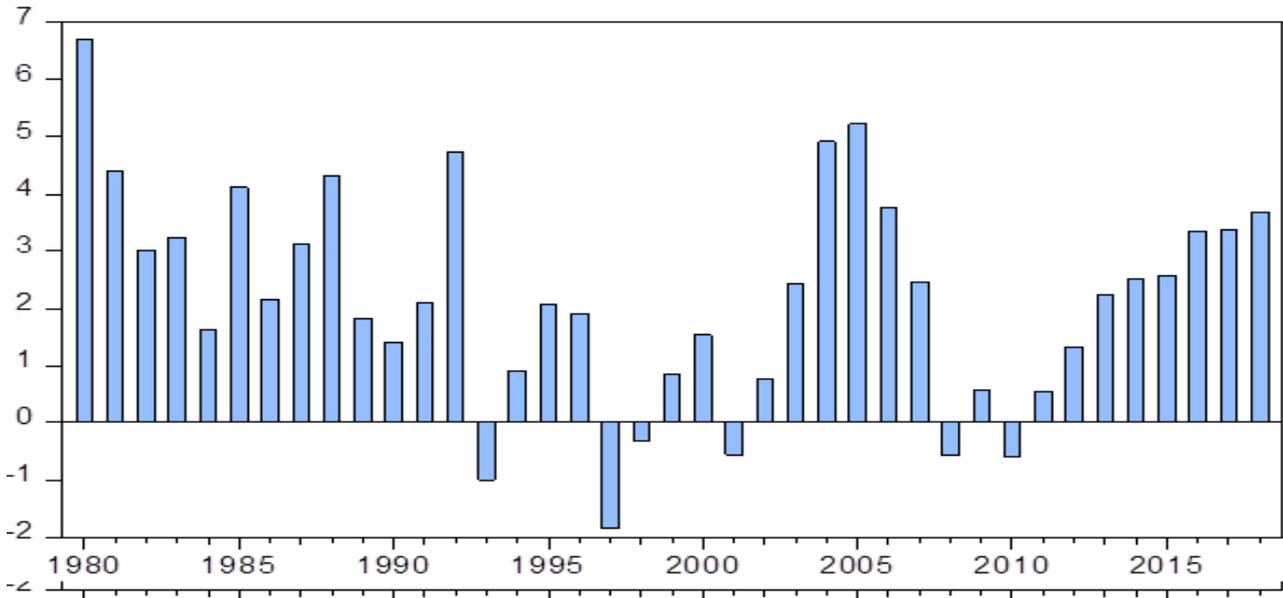


Figure 1. Gross Domestic Product (Source: Calculated from Eviews).

Physical Capital

It is gross fixed capital formation (GFCF) that shows factor of production. GFCF estimates the value or worth of existing and new fixed resources through the households and govt. in economy. In term of theory, GFCF has recognized as an important element to facilitate economic growth. It is used to calculate about future business activities and outlines of economic development. The graphical representation of this variable is shown in Figure 2.

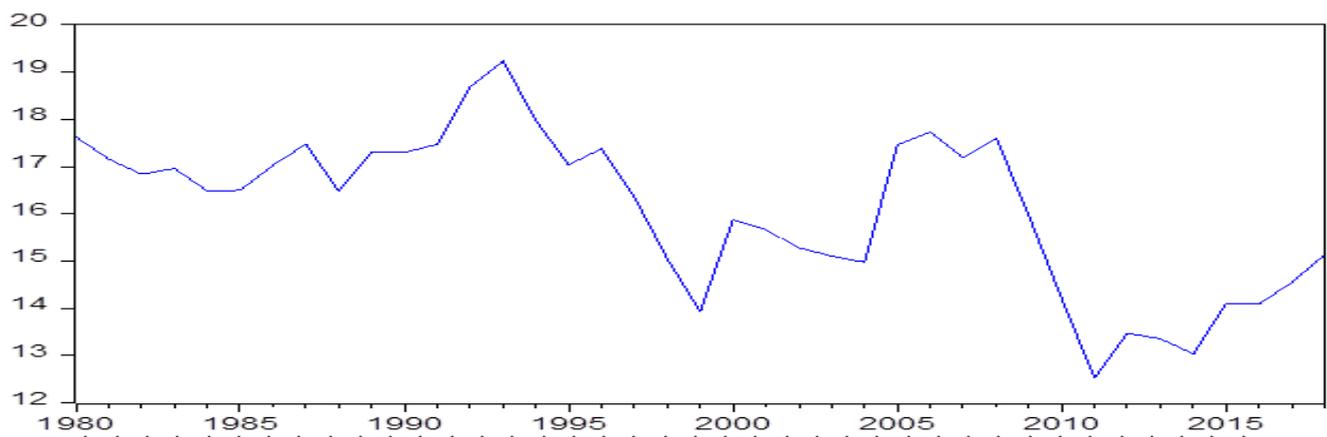


Figure 2. Gross fixed capital formations (Source: Obtained from Eviews).

Child Mortality Rate

Child mortality is the mortality of children under the age of five. Children are the assets of a nation and considered future human capital. Children have right to access best healthy life in a country. The main social problem is child mortality in developing countries than developed countries. It is mostly occurred in middle and low income countries. This problem is not affected by the biological elements; it is influenced from economic and cultural factors. When child mortality rate comes in Pakistan it denotes that Pakistan is

between those countries that ranking is very low in the health. According to human development index Pakistan ranks 146 out of 187 through the United Nation Development Programme. Health status of children in Pakistan is inferior. The chance of child mortality rate in low income countries is 18 times greater than developed countries. The graphical representation of this variable is shown in Figure 3.

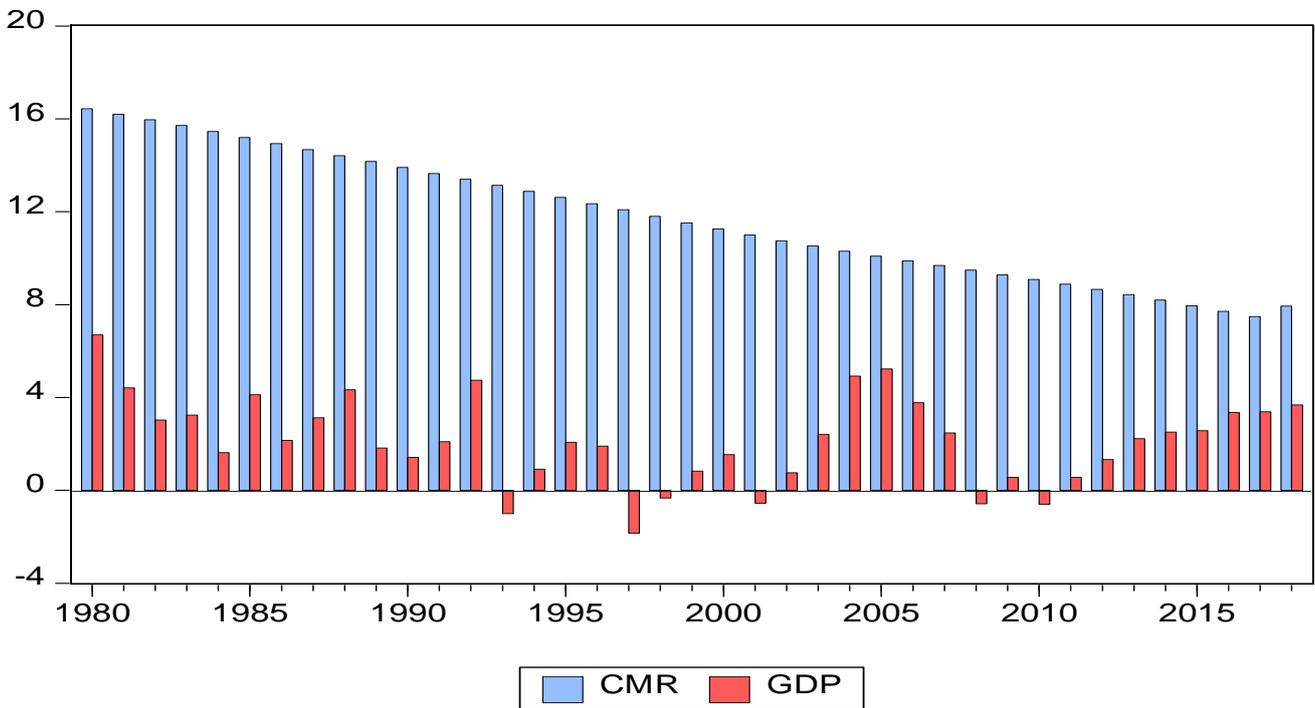


Figure 3. Child Mortality Rate (Source: Taken from Eviews).

Government Education Expenditure

Government education expenditure has an optimistic influence on economic growth and also exhibits the direction of economic growth. Human capital with quality education is positive sign for economic growth. The graphical representation of this variable is shown in Figure 4. The countries possessing more stock of human capital and invest greater amount in education will possess faster economic growth rate. This variable is obtained from Jeffery (2018).

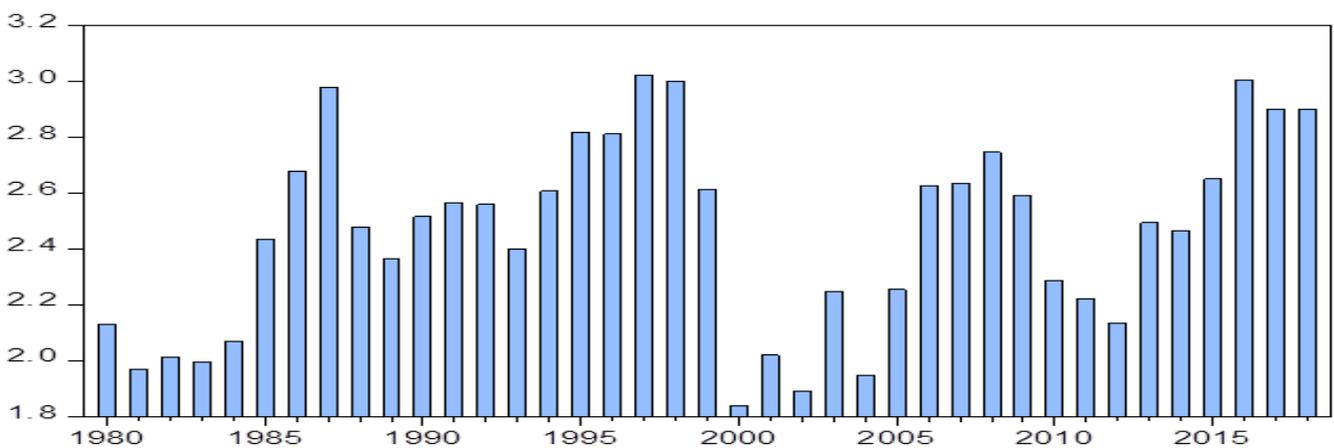


Figure 4. Government Education Expenditure (Source: Received from Eviews).

Social Capabilities

Social capabilities are human capabilities that increase the efficiency of economic growth. Financial development is a driving force of transformation and main dimension of social capabilities. In common financial development mentions to a position when private sectors of an economy play a part further

actively in financial activities of a specific economy. Final usage of expenses in national accounts and expenses on services and goods which are taken to direct fulfillment of individual or collective requirements in the community are documented in income account under the transaction final usage expenses. It is taken to estimate its effect on economic growth. This Figure denotes the fluctuations in final consumption expenditure and economic growth. Final consumption expenditure in Pakistan has fluctuations that are shown in Figure 5. In 1980, it increased while decreased during 1991 due to inefficiency of public sector.

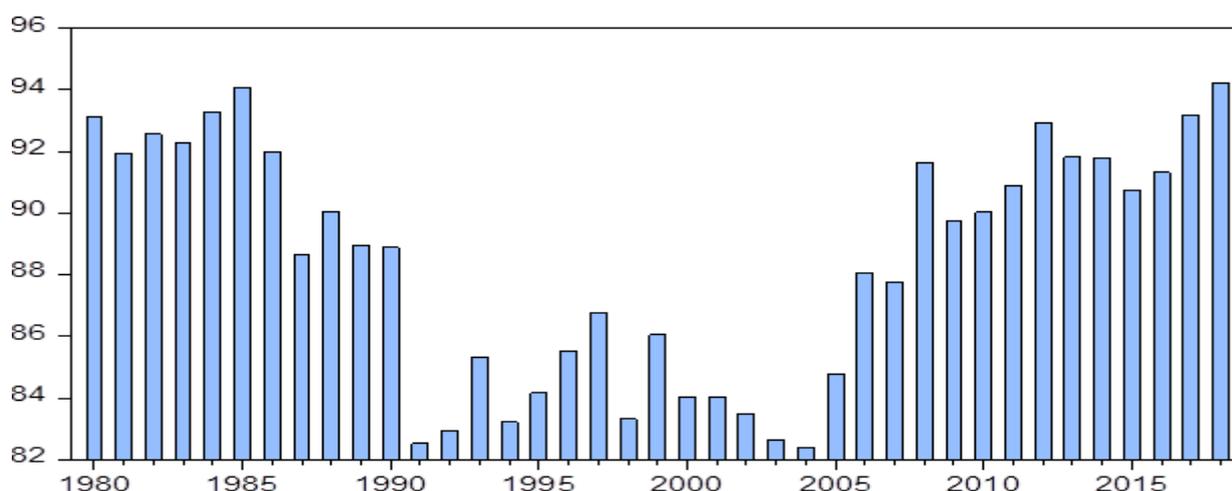


Figure 5. Final consumption expenditure (Source: Calculated from Eviews)

RESULTS AND DISCUSSION

Unit Root Results

The test which is assisted through the literature is Augmented Dickey Fuller unit root test and has been used. ADF test has a supplementary advantage to scrap the autocorrelation because it contains an additional lagged terms of dependent variables as an independent variable. Results are given in Table 2.

Table 2. Unit root test for variables

Variables	GDP	CMR	GEE	FCE	GFCF
T- Statistics	-4.0349***	-13.124***	-5.6669***	-7.0674***	-5.33***
Probability	0.000	0.000	0.000	0.000	0.000
Integrated order	1(0)	1(0)	1(1)	1(1)	1(1)

Note: *** shows 1 percent level of significance.

Variable in data seem to be stationary because the variables have p-value more than the level of significance. Result shows that child mortality rate and GDP becomes stationary at level 1(0) and rest of all final consumption expenses, expenses of govt. on education and GFCF become stationary at first difference 1(1). No any variable is at second difference 1(2). It means that variables have different level of integration. These values are determined by using AIC criteria. Hence, ARDL approach to Cointegration is the best one and is being applied.

Bound Testing Cointegration Results

The ARDL bound testing approach is used to assess the cointegration by managing F-statistic. Bound test is used to estimate long term association amongst the dependent and independent variable. The null hypothesis showed that no long run association however p value in chi square test is smaller than

significance level. So by this result rejects the null hypothesis. There exists a long run relationship. The results of F statistics shown in Table 3 denote that there exists cointegration between GDP, GEE, FCE, CMR, and GFCF when these variables are set out as dependent variable.

Table 3. Results of Bound Test Approach.

Wald Test			
Test Statistics	Value	df	Probability
F- Statistics	3.198	3 ,21	0.04
Chi- square	9.59	3	0.02

Source: Author’s calculation.

Long Run Cointegration Results

After applying the ADF unit root test and its results, ARDL approach is used. This is applied to estimate the short and long term association among GDP, GEE, FCE, and CMR in the present study. There are some steps of the application of ARDL test. The first step is to select model on the basis of lag criterion AIC and SC. Automatic lag model 4 is selected as there AIC and SC values were the lowest.

Table 4 shows the outcomes of the ARDL model. The value of Durbin Watson is 2.2 that denotes the no existence of autocorrelation. R squared has 0.64 that exhibits 64% of changes occurred in reliant variable due to independent variable. F statistics probability is 0.012 means less than level of significance 5% in short run shows that model is significant. Long run ARDL results shows that GEE is significant and has a constructive outcome on GDP. It is observed that if 1% increases GEE tends to increase economic growth 2.99% (Jeffery, 2018). GFCF has important but positive effect on GDP. If 1% enhances gross fixed capital formation so it tends to increase economic growth 0.88% in long run. Child mortality rate also has significant and positive impact on GDP. 1% enhances child mortality rate so 25.2% increase GDP. Final consumption expenditure % of GDP has significant and negative impact in short and long term on financial growth. It is noticed that if 1% increases final consumption expenditure so 0. 25% decrease GDP.

Table 4. Results of the Long Run ARDL Model.

Variables	Coefficient	Std. Error	T- Statistics	Probability
GEE(-1)	2.99	1.46	2.04	0.05
GFCF(-1)	-0.83	0.39	-2.13	0.04
FCE(-1)	-0.25	0.11	-2.19	0.03
CMR(-1)	52.5	25.7	2.03	0.05
D(CMR(-1))	54.5	25.09	2.17	0.04
D(FCE(-1))	-0.25	0.11	-2.19	0.03
D(Gee(-1))	2.19	1.25	1.74	0.09
D(GFCF(-1))	0.88	0.43	2.05	0.05
C	48.29	16.14	2.99	0.006
R-squared		0.64	Durbin Watson stat	2.2

Source: Estimated by author.

Results of Error Correction Model

In order to create equilibrium, the coefficient of ECM must be negative but statistically significant. Table 5 shows that the GDP has an ECM value of -0.925, which exhibits disequilibrium in the dependent variable, but it will reach to equilibrium level through a rate of 92% in one period. The coefficient value of 0.925 denotes the speed of adjustment of the variables in the model. ECM denotes child mortality rate has a positive relation with economic growth. Government education expenditure and gross fixed capital formation are also having a positive relationship.

Table 5. Error Correction Model.

Variables	Coefficient	Std. Error	T-statistic	Prob.
D(CMR)	3.047029	1.918198	1.588485	0.1271
D(CMR(-1))	54.59961	8.569819	6.371152	0.0000
D(GEEDU)	0.710892	0.880685	0.807204	0.4286
D(GEEDU(-1))	2.194368	0.873897	2.511015	0.0203
D(GFCF)	0.184946	0.220805	0.837601	0.4117
D(GFCF(-1))	0.889537	0.335047	2.654964	0.0148
D(GFCF(-2))	0.550245	0.258231	2.130826	0.0451
D(GFCF(-3))	0.578885	0.253108	2.287108	0.0327
ECM	-0.925152	0.138025	-6.702763	0.0000

Source: Estimated by author.

CONCLUSIONS AND RECOMMENDATIONS

The effect of human capital on economic growth has been analyzed very widely throughout the world. Suitable investment in health and education is central to any sustainable economic growth arrangements that must be sought through any developing country, especially like ours. It considers all the strategies and opportunities and demands that forcefully experience the development of human progress. This study supports a significant and positive association between economic growth and measures of human capital. Pakistan can relocate itself as a dominant force by the quality and quantity of the products from the whole school system. Pakistan is also making her labour force suitable in the highly ambitious and globalized economy by a structural well-funded, correct, beneficial investment in the education and health sector in the best direction and proper planning of educational and health institutions.

The main purpose of the investigation was to probe the association between financial growth and HCF in Pakistan. For exploring the study, time series data ranging from 1980 to 2018 were used. The study outcomes showed the short and long-run association among economic growth, govt. Expenses on education, child mortality rate, final consumption expenditure (FCE) and GFCF. In the short run, 2 variables showed positive and significant influence on economic growth, except FCE and government education expenditure. FCE has a significant but negative impact on economic growth because of the inefficiency of the public sector. Government education expenditure has insignificant but positive effects on economic growth in the long term. Economic growth is positively and significantly related to child mortality rate and gross fixed capital formation in the long run. Few variables have not positive results in the short term but essential share in the short of having good output in the long term. Empirical verification also demonstrates that human capital plays a vital role in the success of a country. These outcomes recommend that when a country keeps strong institutions and its people have sufficient final consumption expenditure, it leads to better utilization of human capital.

In Pakistan spending on education and health sector is still less than other developing nations. There is significant scope for enhancing the economic growth by investing more in human capital. To attain aforementioned targets and goals, education and health sectors are very important and specific attention should be given to these sectors. The budgetary allocation should be made possible to achieve better education and health facilities. It is recommended that to increase the government education expenditure towards productive expenditure such as constructions of new educational institutions with adequate learning facilities. In Pakistan, government should endorse productive planning and monitoring. In addition, government should allocate more capital expenditure on health and education with learning facilities like computers, libraries, laboratories and other learning materials. The donor companies like World Bank, United Nations Education, Scientific and Cultural Organization (UNESCO), United Nation

Development Program (UNDP) etc. should also be involved to fund and support educational and health sectors.

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