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Research Article **Open Access**

HUMAN CAPITAL AND ECONOMIC PERFORMANCE OF PAKISTAN

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Abstract

In this paper we will study the relationship between human capital and economic performance in the light of Human Capital index and Economic Performance Index. Secondary data for the period of 1972-D2018 was collected from World Development Indicators, Pakistan Economic Survey, and State Bank of Pakistan reports. Different statistical techniques were applied to determine long run and short run relationship between variables. The findings of study show that there is a positive and significant relationship between human capital and economic performance. Thus, the Government should increase investment in education and health to make the human capital more effective.

Keywords: Human capital index; economic performance; economic growth.

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1. Introduction

1.1. Background of study

Human capital concept comes from the classical economics in 1776 and finally develop to a scientific theory (Fitzsimons, (1999). In the classical economic, the human capital had no significant place in the economy. After the study of Schultz (1966) human capital emerged as the most significant element of economic growth. Human capital is the staple of skill, knowledge, habit and cognitive ability that accelerate economic growth if develop collectively. According to the new theory of human capital education and new technology are two vital need for human capital development because both increase the ability of workers to produce more in given time (Riley (2012); Lucas (1988); Mankiw (1992). Many economic theories suggested to increase the investment in field of education, new technology and skill to improve the productivity of labor. Health. Education, skill and efficiency improve the productivity and effectiveness of workers. Todaro, (2002). Human capital and the economic performance are joint to gather strongly if the human capital is in effective form. Training is also important to improve the skill of human capital (Singh, 1999).

After establishment of Pakistan 19947 there are many problems which were faced in every field of economy. For the 1st time in Pakistan Prime Minister, Zulfiqar Ali Bhutto, paid special attention on the education and skill development of youth. He tried to give free education and also opened many vocational institutes where short courses were offered free of cost for adult education and skill development. He also focused on the export of skill labor to Middle East. Later on, very litter attention was paid on the development of human capital because of privatization of education sector.

1.2. Objective of study

The objective of this paper is to investigate the impact of human capital on economic performance of Pakistan because it is one of the populous country of the world and having more than forty percent working age labour. But even then the economic performance of the country is very poor. This prompts the authors to probe into the causes of the poor economic performance of the country keeping in view the development of human resources.

2. Literature review;

Asgher (2012) investigated the relation between human capital health and stated that in spite of spending on education and health Pakistan is a poor country. He used time series data for years from 1974 to 2009 to investigate the responsibility of government to increase investment in education and health sector. His finding was that the government did not allocate sufficient funds for development of human resources in Pakistan during his study period. Ali and Ahmed (2013) emphasized that investment in health & education is essential for better economic growth. Effective human capital increases productivity and earning capacity of workers rapidly. This study collected data from 34 districts of Punjab for analysis and OLS technique was used to analysis the data. Faridi (2015) stated that education plays a key role for formation of human capital. There is a long run and significant relation between human capital and economic growth. He applied ADF and Johanson-jeselius test to investigate the relations between human capital and economic growth during the period of 1972-2013 variables. ADF and Johanson-Jeselius test applied to investigate the variables and see relation how human capital effect the economic performance. The finding suggested that there is a good and significant association between human capital and economics

performance. It is suggested that government should increase allocation of funds for education in budget. Ali, Alam, and Noor (2016) studied empirical relationship between human capital and economy development. Secondary data for period of 1981-2014 was used in this study. The results reveal that there is positive association between human resources development and economic development a country. If human capital is more efficient then economy will grow rapidly and attain sustainable economic development. Liu and Memon (2020) explored relationship between education, skill and earning of workers. They took three-year data from 2005 to 2008 of the workers having age between 15 and 64 years and found there is positive relationship between worker's income and their relevant skill as well as experience. They emphasized that special focus should be given to improve the skill of workers through inculcating education and skill in their relevant fields.

3.Data and Methodology

3.1 Research design

Analyzing the model, we preferred the time series data of 47 years that covered time period from 1972-2018. Economic performance index was taken as dependent variable while employed lab our force (EMP), Gross fixed capital formation (GFCF) Foreign Direct Investment (FDI) and Human Capital index (HCI) were taken as independent variables. We used different statistical techniques such as Descriptive statistics, ADF Test, Correlation Analysis, ARDL Model, Bound Test and Error Correction Model were applied to determine long run and short run relationship between independent and dependent variables.

3.2 Specification of model

The econometric model of this study is shown in the following equation: -

$$EPI=\alpha 0+ \beta_1 (EMP) +\beta_2 (GFCF) +\beta_3 (FDI) +\beta_4(HCI)+\beta_5(TRADE)+\epsilon$$

Where:

EPI = Economic performance index.

EMP = Employed lab our force.

GFCF= Gross fixed capital formation.

FDI = Foreign Direct Investment

HCI = Human capital investment

Trade= International trade.

ϵ = Error term

Bs = Parameters

3.3 Description of Variables

3.3.1 Economic performance index:

EPI mean economic performance index. Economic performance index (EPI) is a Marco economic indicator that reflects overall performance of country's economy and reports any changes in the level of economic performance. It is a strong macro indicator that measure the performance of any economy in terms of government, household and firms. Economic performance index deals variables that influence these three sectors (firm, household and government) simultaneously;

3.3.2 Weighted of EPI:

The current value of EPI score can be calculated as: 100% minus pf absolute vales of inflation rate, the unemployment rate, minus of the budget

deficit as % of GDP and plus the % change in real GDP. Any change in the economy has strong impact on economic performance index. If inflation rate is increased, it will negatively affect economic performance of a country. Similarly, increase in unemployment rate will also have negative impact on GDP. Budget deficit also has negative effect on economic growth of a country.

In IMF working paper written by Lee and Kharkov this relationship has highlighted in the following equation: -

$$EPI = 100\% - |Inf\ (\%)| - |Unem\ (\%)| - |Def/GDP\ (\%)| + |\Delta GDP\ (\%)|$$

3.3.3 Gross fixed capital formation (GFCF):

Gross fixed capital formation is a macroeconomic concept developed by the Simon Kuznets (1930). It gives better idea of capital formation and later in 1950s its numerical standards were developed to calculate the value addition of capital assets It is a major component expenditure on gross domestic product (GDP) that shows how much new value of asset added in an economy is invested vis-a-vis their consumption. GFCF does not measure investment in financial assets and only net additional fixed assets are included in value addition and financial assets are excluded from it.

3.3.4 Total employed labor force (EMP)

The Labor force is the number of persons who are employed plus those people who are searching for job or willing to work and all the people who are above 16-year age are the part of labor force. The formula of labor force is as under: - Labor force = total employed + total unemployed

4.3.4.1 Employment

Employment is a contract between employer and employee in which employee provides a specific service, in return the employee is paid wages.

The full employment does not mean that there is no body unemployed its mean cyclical unemployment is equal to zero. According to the organization for economic co-operation and development (OECD), a person having age of 15 not being a paid work remain in unemployment criteria. But in case of unemployment people have no jobs and unable to find the new jobs and do not produce anything.

4.3.4.2 Human capital index (HCI)

In human capital index the human capital measures the child born today can expect to reach the age of 18 and at the age 18 they can get better education and health. In poor countries the child can't reach at age of 18 and not having good education and health because of low value of HCI. These countries have low investment in education, health and utilization of resources. There are many risks involved before reaching 18 years of education and these are leaving school or suffering chronical disease or become disable due to malnutrition before reaching this age. Good education and better health are basic requirement for performing economic activity. There are many components to deal with the human capital index calculation and see the result and consequence on the next generation. The human capital index is calculated on the basis of following formula.

$$HCI = Survival \times Education \times Health$$

In the above equation of human capital index, there are three main indicators such as health, survival and education. HCI value shows that the performance of education and health sector. If the HCI value is higher than the economy will perform well. This index highlights the important role of human capital in economic development

4.3.4.3 Trade and growth

Trade is regarded as the principal component of economic growth. It is basically carried out in two main ways which is import and export, import is that goods and service buy from the rest of the world by a country's resident, rather than buying domestically produced items. Exports include goods and services that are produced domestically but are sold to customers living in other countries. If the volume of exports is high, then a nation will earn foreign exchange and its trade balance is surplus. If the volume of imports vis-à-vis exports is high, then a nation will suffer trade deficit and it has to pay for extra importing goods and services.

Thus, Trade has been found to be effective in fostering economic growth in developing countries. All major economies of the world were built on the basis of trade. China is the best example of 21st century.

4.4. ADF Unit Root Test

Dickey and Fuller (1979, 1981) test is used to check stationarity among variables and it shows their order of co-integration. The general form of the equation of Augmented Dicky-Fuller (ADF) Unit Root test is the following: -

$$\Delta Z_t = \gamma Z_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Z_{t-i} + \varepsilon_t$$

Where

Δ =first difference proxy

p = lag operative

T = time subscript

$\boldsymbol{\varepsilon}$ = miscue term

ADF test contains three forms such as,

- Without intercept and trend,

$$\Delta Z_t = \gamma Z_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Z + \varepsilon_t$$

- With intercept,

$$\Delta Z_t = a_0 + \gamma Z_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Z + \varepsilon_t$$

- With intercept and trend,

$$\Delta Z_t = a_0 + \gamma Z + \beta t + \sum_{i=1}^{p} \beta_i \Delta Z_{t-i} + \varepsilon_t$$

From these above three equations the test is perform level and 1st difference. The two main hypothesis are made such as 1st is the null hypothesis in which the under estimated variable has unit root and the 2nd is alternative hypothesis in which the under estimated variable has no unit root.

3.5 Autoregressive Distributed Lag (ARDL) Model

The general form of ARDL Model (p, q) is as,

$$Y_t = a_0 + \sum_{j=0}^{q} \beta_j \; L^j \; X_t + \sum_{j=0}^{p} \gamma_i \; L^j \; Y_t + \varepsilon_t$$

Where the above equation shows,

L = stand for the lag proxy

$L^A = E_{xt\text{-}j}$ is a activating model in the level of the variable and their lags (Patterson, 2000)

According to the ARDL model equation of variable is shown as under: -

$$\Delta EPI_t = a_0 + \sum_{i=1}^{p} \beta_i \Delta EPI_{t-i} + \sum_{i=1}^{p} \varphi_i \Delta EMP_{t-i} + \sum_{i=1}^{p} \gamma_i \Delta GFCF_{t-i} + \sum_{i=1}^{p} \delta_i \Delta HCI_{t-i} + \sum_{i=1}^{p} \sigma_i \Delta FDI_{t-i} + \sum_{i=1}^{p} \rho_i \Delta TRADE_{t-i} + \lambda_1 EPI_{t-1} + \lambda_2 EMP_{t-1} + \lambda_3 GFCF_{t-1} + \lambda_4 HCI_{t-1} + \lambda_5 FDI_{t-1} + \lambda_6 TRADE_{t-1} + \mu_t$$

In above equation the β, $\boldsymbol{\varphi}$, $\boldsymbol{\gamma}$, $\boldsymbol{\delta}$ shows the short run relationship and the $\boldsymbol{\lambda}$ shows long run relation between variables. There are two hypotheses: null hypothesis and alternative hypothesis which are as follows: -

H_0 = Null hypothesis = No co-integration

$$\boldsymbol{\lambda}_1 = \boldsymbol{\lambda}_2 = \boldsymbol{\lambda}_3 = \boldsymbol{\lambda}_4 = \boldsymbol{\lambda}_5 = \boldsymbol{\lambda}_6 = 0$$

H_1 = Alternative hypothesis = Co-integration exist

$$\boldsymbol{\lambda}_1 \neq \boldsymbol{\lambda}_2 \neq \boldsymbol{\lambda}_3 \neq \boldsymbol{\lambda}_4 \neq \boldsymbol{\lambda}_5 \neq \boldsymbol{\lambda}_6 \neq 0$$

The long run relationship is shown in the following equation: -

$$EPI_t = a_0 + \sum_{i=0}^{m} \beta_{1i} EPI_{t-i} + \sum_{i=0}^{n} \varphi_{1i} EMP_{t-i} + \sum_{i=0}^{o} \gamma_{1i} GFCF_{t-i} + \sum_{i=0}^{p} \delta_{1i} HCI_{t-i} + \sum_{i=0}^{q} \sigma_{1i} FDI_{t-i} + \sum_{i=0}^{r} \rho_{1i} TRADE_{t-i} + \mu_t$$

4. Results and Discussions

4.1 Descriptive Statistics

The results of descriptive statistics of variables are shown in Table 1

Table 1: Demographic statistics of variables

Variables	Mean	Maxi	Mini	Stand. Deviation	Skewness	urtosis	JB	Prob.

PI	.44668	.75488	4122 5	6.365449	10747	38250	58296	05034
EMP	14456	.89000	9800 0	6.986775	59648	59648	36865	42069
FCF	64876	.23542	4000 0	2.258311	23193	04272	.613 456	99587
DI	79522	68323	5360 0	0.989598	62832	61314	18144	00113
CI	.2800 21	400123	7812	.0570032	48215	14122	32311	61350
ADE	49680	.90950	7198 2	2.717896	44264	33360	02259	59736

Table 1 shows descriptive analysis of all variable in the model. Here, the EPI is the dependent variable and other EMP, GFCF, FDI, HCI and TRADE are independent variables. The dependent variable EPI has mean value 84.4, maximum value 92.75 and minimum value 68.41. The standard deviation is 6.36 and has negative skew-ness which is 1.13. Now the next 1st independent variable EMP mean values is 33.14 and standard deviation value is 6.9 and it has positive skew-ness 1.55. Probability value of EPI is 0.005 and value of EMP is 0.042 which is less than 0.09 and both are the significant variable. Next variable is GFCF and its mean value is 15.65, maximum, minimum and standard deviation values are 19.23, 11.4 and 2.2 respectively. GFCF is negatively skewed. The mean value of FDI is 0.5, maximum and minimum value of FDI is 3.6 and -1.4. Standard deviation of FDI is 0.98 and has positively skewed which is 0.96. Probability value of FDI is 0.00013 which is

significant. Human capital index mean value is 0.28, maximum value is 0.4 and minimum vales is 0.16. Probability value of HCI is 0.04, which is significant and less than 0.09. Standard deviation of HCI and TRADE values are 0.057 and 2.71. Probability of TRADE is 0.8 which id insignificant and negatively skewed

4.2 Correlation Analysis

The results of correlation analysis are given in Table 2.

Table 2. Results of Correlation Analysis

Variable	EPI	EMP	GFCF	FDI	HCI	TRADE
EPI	1.000000					
EMP	0.193508	1.000000				
GFCF	0.087574	0.32453	1.000000			
FDI	0.198227	0.359009	0.526110	1.000000		
HCI	0.148279	0.848718	0.467292	0.131757	1.000000	
TRADE	0.057141	0.29732	0.391392	0.254458	0.102172	1.000000

In our model, EPI is dependent and EMP, GCFC, HCI, FDI, TRADE are independent variables. The table 2 shows the correlation between variables as

EPI and EMP are negatively correlated with value is -0.1935 while the EPI and GFCF are positive correlated and their correlation value is 0.08757. Economic performance index and foreign direct investment shows the negative correlation and their value is -0.19. EPI and human capital index has negative correlation between each other and their value is -0.14. EPI and trade shows positive correlation with value of 0.05.

4.3 Augmented Dicky-Fuller (ADF) Unit Root Test

The results of ADF test are shown in Table 3.

Table 3: Results of ADF Test

Variable	Level			1st difference			Conclusion
	Intercept	T&I	one	intercept	T&I	None	
MP	_	_	_	4.018030 P(0.0030)	-4.08713* P(0.0158)	-4.068155 P(0.001)	L(1)
FCF	_	_	_	5.194047 P(0.001)	-5.61968* P(0.002)	-5.257883 P(0.000)	(1)
DI				-4.290431 P(0.0014)	-4.450533* P(0.0048)	-4.327277 P(0.001)	L(1)
CI				6.41010*	6.381431	3.332854	L(1)

				P(0000 0)	(00000)	P(0.000 14)	
Trade	3.5426 1*P(0.0 11)	3.4722 53 P(0.05)	_				L(0)
PI	4.3306 *P(0.00 1)	4.2562 3P(0.0 08)	.399 6	_	_	_	L(0)

ADF test shows that variables are stationary at level, 1st difference and 2nd difference. If all variables are stationers at 1st difference, then we can use the OLS technique and if they are stationary at 1st difference and level then we can use ARDL model. In above table, EPI and TRADE are stationary at the level and HCI, GFCF, FDI, EMP are stationary at the 1st difference. Thus, the variables in the model are stationers at different level so we can use ARDL model for analysis.

4.4 ARDL Model

The results of ARDL Model are shown in Table 4.

Table 4: Results of ARDL Model

Long Run Coefficients

Variable	Co-efficient	Std. Error	t-Statistic	Prob.
EMP	0.883765	0.228453	3.868478	0.0006
GFCF	-1.302030	0.807083	-1.613256	0.1175
HCI	6.805012	1.926308	3.532671	0.0014
TRADE	0.712627	0.259680	2.744250	0.0103

FDI	4.135611	1.468010	2.817154	0.0086
C	56.09771	18.03785	3.109999	0.0042

The calculated results in table 4 show that first variable EMP is positively related to EPI (Economic performance index) and its the probability value shows that relationship between EMP and EPI is significant in the long run. It means if one employment is increased one unit it will likely to increase economic performance index by 88 percent. Employment increase means more jobs are created and more unemployed persons are employed and consequently output is increased. There is significant long run relationship between these two variables. Our result is consistent with the findings of Faridi (2015), Muneer (2018) and Qadri (2011).

The second variable GFCF shows negatively relationship with EPI and its probability value shows that these variables have insignificant relationship. Human capital index (HCI) show the positive relationship with economic performance and its probability values shows the HCI is positive and significant relationship. If one unit increases in human capital it will likely to increase 6.8% the EPI. There is significant and positive relationship between human capital and economic performance in the long run. These result support the findings of Khan, Elahi (2018) and Asgher (2012). Moreover, Trade shows positive association with economic performance. Probability value which is 0.0103 shows that trade is significant and positively association with the EPI in the long run. If one increases in the trade it is likely to increase in EPI by 71. Percent. These two variables have strong positive relationship in the long run. Our results are consistent with the results of Qadri (2013), kali,

Reyes (2006). Last variable is FDI and its co-efficient sign is positive and show positive relation with the economic performance and the value of probability is less than 0.09 so FDI is significant. It means If one unit increases in FDI it is likely that economic performance will increase by 4.1 percent. These two variables also have positive association in the long run. Result of FDI and economic performance support the findings of Ramadhan (2017), Williams (2005).

4.5 Bound Test

Bound test is used to verify long run relationship between variables. The results of this Test are shown in Table 5

Table 5: Bound Test results

F-STAT	3.473620	
CRITICAL BOND VAUE	LCB	UCB
10%	2.26	3.35
5%	2.62	3.79
1%	3.41	4.68

Values are taken from EVIEWS

Table 5 shows the bond test result and also verify the long run relationship between variables. In the light of these results the null hypothesis is rejected and the alternative hypothesis is accepted. In the bond test we observe the value of F-statistics 3.473620 which is greater than one value of LCB and at-least lower than the one value of the UCB, highlighting long run relationship between variables in the model.

4.6 Error Correction Model (ECM). The short run results drawn through Error Correction Model are shown in Table 6

Table 6: Results of ECM

Co-integrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EMP)	0.362929	0.465946	0.778907	0.4423
D(EMP(-1))	-1.578966	0.435358	-3.626821	0.0011
D(GFCF)	-0.553469	0.719934	0.768778	0.4482
D(HCI)	-7.462086	2.063638	-3.615986	0.0011
D(TRADE)	0.781437	0.302357	2.584482	0.0151
D(FDI)	2.407213	1.852535	1.299416	0.2040
D(FDI(-1))	-1.808113	2.900877	-0.623299	0.5380
D(FDI(-2))	-0.309696	2.574858	-0.120277	0.9051
D(FDI(-3))	3.830704	1.791059	2.138793	0.0410
CointEq(-1)	-0.296557	0.129390	-8.474822	0.0000

Cointeq = EPI - (0.8838*EMP -1.3020*GFCF -6.8050*HCI + 0.7126*TRADE

-4.1356*FDI + 56.0978)

Table 6 shows short run results in which we see the value of coefficient which lies between the 0 and -1. The value of 0.29 shows that the variation in EPI towards the equilibrium level in the current period adjusted by the 29.65% in the next year. Employment, trade and FDI have positive relationship with economic performance index in the short run while GFCF HCI have negative association with economic performance index in the short run.

4.6 Cu sum and Cu sum square tests

These tests are used to check stability of data during study period. The results of Cu sum and Cu sum square are plotted into Fig 1 and Fig 2.

Fig 1: Result of Cu sum test

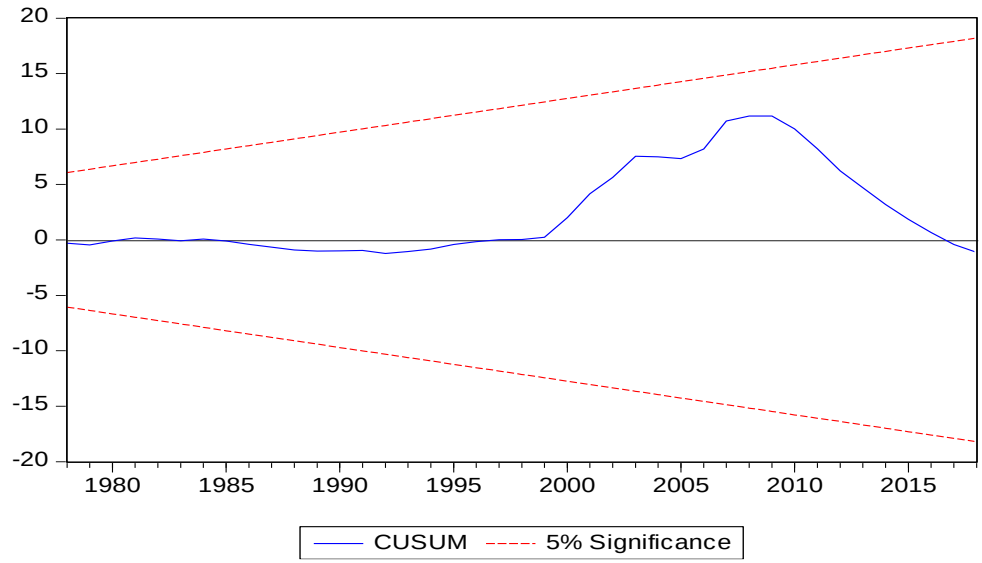
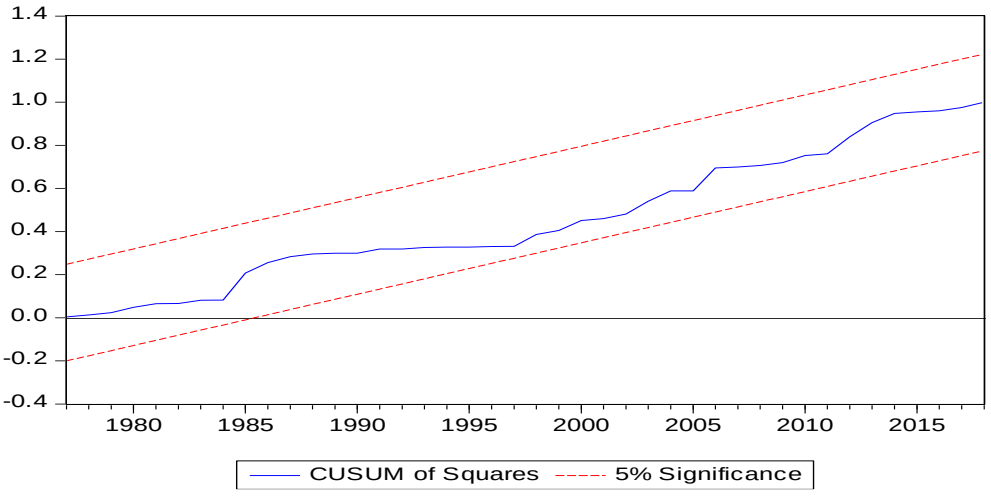


Fig. 2: Cu sum square test results



The above two graphs explain the stability of the data at 5% significance level. Its means variance of the series is stable during study period,1980-2015.

5. Findings of study

In this study we explored relationship between human capital and economic performance. The basic theme of this study was to measure the economic performance with the help of effective human capital. Analyzing the model, we selected the time series data for the period from 1972 to 2018. The data was taken from World Development indicators, IMF and other sources We used the descriptive, Correlation Analysis, ADF Test, ARDL approach, BOND test and Error Correction model. Descriptive statistics shows the mean, median, mode, standard deviation, minimum, maximum, JB value and probability value of all variables. The correlation analysis shows the correlation between variables. ADF test shows the stationary of variables and the results show that the variable is mixture of stationary at I (0). Trade and EPI is stationary at the I ($0_{)}$ and EMP, GFCF and FDI are stationary at $I_{(1)}$. The model is variety of stationary at level and 1^{st} difference so we used the ARDL model to analysis the long relationship between the variable. In ARDL model, the variable is significant because the T-statistic value was greater and probability value was less than the 0.09. The coefficient sign shows that there is a positive relation between EPI with HCI, EMP, trade and FDI. The results of ARDL model shows that there is significant relationship between all variables in the long run. The Error Correction Model results show that Employment, trade and FDI have positive relationship with economic performance index while GFCF HCI have negative association with economic performance index in the short run.

6. Conclusions

From the above results we can conclude that human capital is very important for economic development for a country like Pakistan so special focus should be given on its development by allocating financial resources to education, health and skill development and new technology. The improvement in these four sectors will improve the quality of human capital and consequently the productivity of lab our and capacity of country will also improve. It will expand the size of the economy and will lead the country to knowledge economy. This is the only solution that if Pakistan wants to produce high tech products it will have to develop the quality of its human capital and should abandon its policy of promoting labor-intensive industry producing primary products of low quality which has no value in international market.

7. Police Recommendations

We would like to make the following recommendation for the development of human capital in Pakistan.

- Government should increase the investment in field of education also promote technical education based on information technology.
- Government should pay proper attention on health of people and provides free treatment and medicines to poor people by allocating necessary funds in the budget.
- Government increase spending on research and development (R&D) for promoting research culture and innovations.
- Policy initiatives should be taken to improve the skill of labor and also improve the technology in the country.

● Government should promote the private and public investment for new projects to reduce unemployment from the country.

● The trend of seeking employment in public sector should be discouraged and policy initiatives should be taken to encourage young graduates to start their own businesses and opt entrepreneurship for value addition, innovation and job creation and reduce burden on public sector.

8. Limitations and Contribution of this study

This study has contributed into the body of knowledge on the role of human capital in promotion of economic developing by examining the impact of human capital on economic development index. The findings of this study also support the previous studies on the significance of human capital and its impact on economic growth. Though this study is restricted to Pakistan yet its results can be generalized to other developing countries because the situation of human resources development are similar to all countries. We have determined the impact of Human capital index, Foreign Direct Investment, Trade, Employment and Gross fixed capital formation on economic development index in this study more variables can be added in the future studies. Similarly, the period of study can also be expanded.

The results of this study provide insight that developing countries should focus on improving employment, foreign direct investment and international trade through fiscal incentives because not only Pakistan but also all developing countries are facing problem of high unemployment, low foreign direct investment and trade deficit. The policy makers of developing countries must focus on these three variables. This study also highlights the importance of education, health and skill development to improve the quality of labor and level of productivity. The good health of workers improves their productivity

and quality education and high skill will enhance their efficiency. These three elements are vital organs of human capital development and all policy actions should be evolved around them. Our study suggests that trade can only be enhanced by producing quality products in order to satisfy foreign customers and fetching premium price of products. This is the age of knowledge and technology and now the nations are competing with one another in these two fields. No country can progress without developing knowledge and opting cutting edge technology. The education and good health have positive relationship with earning of labor. If the labor is educated, skilled and has good health its earning will be high and in this way per capita income will also be increased. This study also emphasizes that gross fixed capital formation may be promoted because it has positive relationship with economic development in the long run. Thus, our study has contributed into the body of existing knowledge in multi-dimensional ways and policy makers of different countries can get insight from its results.

Data availability statement

The data that supports the findings of this study will be available on request.

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Contribution of Authors

Both authors jointly carried out this research study and collaborated each other. The author 1 collected data, conducted its statistical analysis. He e prepared initial draft of manuscript. The Author 2 helped Author 1 in selected of title of research, guided in statistical analysis and formatted final draft of manuscript. Both authors carefully read final draft of manuscript and find it fit for publishing. Both authors fully followed ethical values during the course of this research work.

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