The Power of Human Capital and Political Stability: Unlocking Pakistan's Economic Potential

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Abstract

Indeed, investing in human capital and ensuring political stability are critical for unlocking Pakistan's economic development. They boost economic progress, attract investments, and create opportunities by leveraging the country's youth and innovation potential. Overall, these factors ensure sustainable development and resilience against global issues. Therefore, the current study investigates the impact of human capital, the polity index, and government expenditure on Pakistan's economic growth. To evaluate it empirically, the researcher utilized the time series data ranging from 1985 to 2023 on human capital, labor force participation, foreign direct investment (FDI), Polity index, Government expenditure, and economic growth. GDP growth is dependent while selecting the other mentioned variables as independent. After confirming that all the variables are first difference stationary, the Johansen co-integration approach has been applied to detect links between variables. Results reveal that all the variables like human capital, employed labor force, FDI, polity index, and public expenditure positively impact Pakistan's GDP growth. They said empirical investigation finds that human capital, labor force, polity index, FDI, and public expenditure can increase economic development in Pakistan. Overall, these factors collectively add to sustainable economic progress and resilience.

Keywords: Human Capital, Employed Labor Force, FDI, Polity Index, GDP Growth.

Historical Background

In an environment where the marginal production of capital (MPK) declines, Solow (1956) and Swan (1956) demonstrated that economic growth is entirely independent of capital accumulation using the neoclassical growth theory. Solow's model is based on four variables: output (Y), which is dependent on technology (A) which is also known as labor effectiveness, capital (K), and labor (L); time is indicated by "t." According to Solow, the model is also known as the exogenous growth model because the values of capital and technology are established exogenously (Ayoub & Mukherjee, 2019). As a result, the long-term growth rate is zero, and the consumption rate stays constant throughout time. To remove a zero growth rate, the growth theorists of neoclassical attribute economic development to exogenous forces such as population expansion and technological advancement.

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Romer (1986) and Lucas (1988) subsequently established a novel concept of growth, claiming th rough empirical evaluation that knowledge and human capital determine the level of technology "A," which is determined endogenously. Their idea was hence dubbed the endogenous growth model.

Romer asserts that human resources play a crucial part in the growth process, which Romer calls human capital gained through knowledge and the learning-by-doing phenomenon (Putri & Mintaroem, 2020). Most economists agree that the four primary, standard, and vital factors influencing an economy's growth in a region are the availability of natural resources, technical development, human capital, and physical capital needed for economic activity (Keji, 2021).

Human capital: The concept of human capital is articulated comprehensively, encompassing the knowledge, abilities, experience, skills, and competencies that an individual acquires, Nainggolan et al. (2022). These attributes are generally understood to be cultivated through several factors, such as research and development, health, education, and migration, since "new growth theory" contends that these are some of the key components in the creation of technical progress and, consequently, economic growth, (Romer 1989; Barro, 1990).

This paper also mentioned the role of public expenditures on human capital and education, along with the employed labor force, in promoting economic growth.

Number of employed labor force: People who are currently employed and making contributions to the economy are referred to as the employed labor force. They work in a variety of jobs, including temporary, seasonal, full-time, and part-time jobs (Taqi et al., 2021). Numerous factors, such as industry demands, demographic changes, and economic situations, can affect the size and makeup of the employed labor force. The data is used by millions of laborers employed.

Another crucial source is foreign direct investment, which is helpful for economic growth.

Foreign Direct Investment (FDI): The inflow of capital investment to a host nation is considered foreign direct investment. If the host nation has a sizable consumer market, FDI could replace commodity trade and support the economic development of the host nation, Javaid (2017). The government's all-encompassing initiatives, in which exports and investment complement each other, are essential to FDI promotion. Additionally, the recipient economy's various features influence FDI inflows. The factors encompass the prevailing wage level, the degree of educational attainment, the nature of institutional and political frameworks, taxation regulations, market dimensions, and the broader macroeconomic landscape, Nainggolan et al. (2022). Pakistan, like other developing nations, aspires to attain the ideal rate of growth in the economy by attracting more FDI, as it bridges the gap between saving and investment, creating more job opportunities, skills, technology, and management. This study also tried to check the impact of FDI on economic growth. In comparison, it is essential to mention that political stability is necessary to make it fertile and smooth for attracting FDI. Therefore, the current study also tried to check the impact of political stability (measured through the polity index) on the economic growth of Pakistan.

Polity Index: The Polity Project created the Polity Index, a tool for gauging a nation's degree of democracy and autocracy. It offers a framework for grouping political regimes according to traits, including executive restrictions and the openness of the executive hiring process regarding the rivalry of political engagement, Blum and Gründler (2020).

The range of the index is -10 to +10: +10 indicates a full democracy, 0 represents a mixed regime, while -10 indicates a full autocracy. Research in economics and the social sciences frequently uses this indicator to examine political stability and governance patterns over time and across nations.

Another important source of economic growth is government expenditure.

Government expenditure: Government expenditure is a fundamental element of public finance, crucial in fostering economic development and growth. Therefore, appropriately calibrated government spending not only ensures economic stability but also makes space for infrastructure growth. Gulcemal (2020). Thus, Keynes maintained that government spending stimulates economic development, national income, and aggregate demand through multiplier effects in healthcare, education, and agriculture. Danladi (2015). This study used the above variable, for which the data is used in US dollars(constant 2015 US).

Literature Review

The aim of a literature review of prior studies is to find information or knowledge about earlier studies on the particular topic of interest. Previous studies may have been conducted domestically or abroad.

Nainggolan et al. (2022) employed panel data from 34 provinces from 2015 to 2019 to perform quantitative research and evaluate every province in Indonesia. The results demonstrated that economic growth was positively and considerably impacted by both the human development index and total government spending. Gulcemal (2020) researched to evaluate the effect of physical and human capital on GDP growth. He used a data set of panel types for 16 developing nations from 1990 to 2018 to find the long-term effects of human and physical capital on GDP growth. The results indicate that human development supports economic progress.

Taqi et al. (2021) reviewed a study that analyzed the relationship between HDI and Pakistan's GDP per capita, a measure of economic growth, for the period 1980 up to 2018. The study demonstrated a substantial correlation between each country's GDP and HDI. The conclusion is that GDP per capita may benefit from HDI levels. On the one hand, increasing levels of human development open up new avenues for economic progress. Keji (2021) objectively investigates the connection between economic growth and human capital in Nigeria from 1981 to 2017. This was preceded by poor policies in critical economic sectors such as health and education, which could have raise productivity for Nigeria's growth. The study employed Johansen and vector autoregressive techniques to address this unattractive phenomenon. The results demonstrated that predicted human capital coefficients significantly affect Nigeria's economic growth over the long run. Javaid (2017) investigated how Pakistan's GDP grew between 1973 and 2014 through external capital inflows, like official development assistance, remittances, and foreign direct investment. He used the error correction technique for short-run effects and the autoregressive distributed lag (ARDL) technique for long-run effects. He discovered that while remittances have a negligible impact on economic growth, foreign direct investment and official development assistance positively and considerably affected Pakistan's GDP growth.

Munir et al. (2016) investigated the effects of personal remittances, FDI, and human capital on Pakistan's economic growth from 1980 to 2014. They used the Johansen Co-integration method to analyze the data. Their results showed that FDI, human capital, and personal remittances positively affected Pakistan's economic development.

Acemoglu et al. (2019) especially examine the connection between growth and democracy. They conclude that democratic institutions do promote economic advancement by reducing social dissatisfaction, bolstering political stability, and enacting growth-promoting reforms like taxation and spending on public goods like healthcare and education. Similarly, Blum and Gründler (2020) cite coups as a significant cause of political instability that is thought to slow economic growth by two to three percentage points.

Methodology

Data Collection

This study utilizes time series data for 39 years from 1985 to 2023 on GDP per capita, Education Expenditure, Population per Doctor, total employed labor force, foreign direct investment (FDI), Gross national expenditure, and polity index. The World Bank's World Development Indicator and Pakistan's economic surveys provide information on the factors above.

Model Specification

This study aims to examine the role of FDI, Total employed labor force, Education Expenditure, Population per Doctor, Gross national expenditure, and polity index on the rate of economic growth.

$$Yt = \beta o + \beta 1 Pop.per.Doct + \beta 2 Edu.Expt + \beta 3 T.emp.LFt + \beta 4 FDIt + \beta 5 GN.Expt + \beta 6 Polity\ indext + et$$

In the above equation, Yt shows GDP per capita (US$),

Pop.per.Doct = population per doctor, Edu. Exp = Education expenditure (US$),

T.emp.LF = Total employed labor force (In millions), FDI = Foreign direct investment (US$), GN.Expt = Government expenditure (US$), Polity index = Polity index (political stability, whose value lies between +10 & -10)

The current study tried to regress the effect of human capital on Pakistan's economic growth by obtaining the two proxies for human capital. First, Education Expenditure took in US dollars (US), while second, the Population per Doctor in Pakistan.

Analytical Techniques

Test for Unit Root

Using the E-views program, the Augmented Dickey-Fuller test is applied to find whether variables are stationary. Since using non-stationary data renders the estimation's conclusions inaccurate, stationarity testing is required. Usually, selecting the first difference makes the variables stationary.

Once the variables are immovable, the ARDL and Bound test can be performed without producing inaccurate results. The findings of the ADF test integrate all of the variables in this study at first differences I(I). Therefore, the Johansen co-integration procedure is suggested whenever the variables are I (I).

Co-integration Test

Examining co-integration between variables comes next; the order of integration of the variables has been determined. If there is a long-term, or equilibrium, link between two variables, they are said to be co-integrated.

Bound Test

The bound test shows the long-run connections among the independent and dependent variables. A long-term relationship exists if the value of F-statistics is greater than or equal to the upper or lower bounds and vice versa. Similarly, if the value of the F-statistic falls between the lower and upper bounds, it is meaningless or inconclusive.

Optimal Lag Selection

To lessen residual correlation, the best criteria for lag selection are applied. Specifically, the degree of lag time from vector autoregressive (SC) is determined using the Hannah-Quinn Information Criteria (HQ), Akaike Information Criteria (AIC), and Schwartz Information Criteria. Generally speaking, pick the condition with the lowest value since the better the model is, the lower the value.

Data Analysis

Table 1: Unit root test at Level (α=0.05)

Variable's Name	Test	T-Stat.	Critical. Value	P-Value.	Decision.
GDP per capita (US$)	Intercept	0.123021	- 2.932114	0.9435	Non-stationary
	Intercept and Trend	-2.396360	-3.527856	0.6634	
FDI (US$)	Intercept	-2.945298	-2.642842	0.9956	Non-Stationary
	Intercept and Trend	-2.532424	-3.956090	0.5110	
Total employed labor force (million)	Intercept	0.839407	-2.773467	0.9526	Non-stationary
	Intercept and Trend	-3.534675	-3.768473	0.0643	
Education Exp (US$)	Intercept	5.963456	-2.852410	0.9925	Non-stationary
	Intercept and Trend	2.6543330	-3.7654759	0.9851	
Population per Doctor	Intercept	5.697533	-2.945842	0.9112	Non-stationary
	Intercept and Trend	2.653017	-3.654623	0.8994	
Gross national expenditure (constant 2015 US$	Intercept	-2.552923	-2.945842	0.1120	Non-stationary
	Intercept and Trend	-3.460468	-3.544284	0.0597	
Polity index	Intercept	-0.054104	-2.945842	0.9469	Non-stationary
	Intercept and Trend	-3.934493	-3.274582	0.0883	

The following describes the hypothesis for examining unit roots:

H_o: $\delta = 0$ Existence of Unit Root (Non-Stationary)

H_1: $\delta \neq 0$ Non Existence of Unit Root (Stationary)

Here H1 displays the alternative hypothesis while Hofor the null hypothesis. If the t-statistics value is less than the critical values at the 5% significance level, the null hypothesis—which holds that the series is stationary—can be rejected.

When all variables' T-statistics values are higher than the critical values at the 05% significance level, the Ho null hypothesis is rejected and the H1 alternative hypothesis is adopted.
This indicates that GDP per capita, FDI, total employed labor force, education expenditure, population per doctor, gross national expenditure, and polity index are all non-stationary at the level.

Table 2: Test for unit root at 1st difference, α=0.05

Variable's Name	Test	T-Stat.	Critical. Value	P-Value.	Decision.
GDP per capita (US$)	Intercept	-4.206783	-2.924332	0.0023	Stationary
	Intercept and Trend	-4.217361	-3.644284	0.0226	
FDI (US$)	Intercept	-3.235042	-2.798404	0.0224	Stationary
	Intercept and Trend	-4.415127	-3.321784	0.0015	
Total employed labor force (million)	Intercept	-4.801163	-2.894210	0.0153	Stationary
	Intercept and Trend	-4.563571	-3.611044	0.0221	
Education Exp (US$)	Intercept	1.347238	-2.895467	0.0484	Stationary
	Intercept and Trend	-5.063190	-3.499359	0.0114	
Population per Doctor	Intercept	-3.111005	-2.843972	0.0032	Stationary
	Intercept and Trend	-7.274883	-3.228379	0.0015	
Gross national expenditure (constant 2015 US$	Intercept	-5.417582	-2.6704	0.0000	Stationary
	Intercept and Trend	-5.628143	-3.544284	0.0003	
Polity index	Intercept	-5.134820	-2.888404	0.0001	Stationary
	Intercept and Trend	-5.522266	-3.384284	0.0004	

The following describes the hypothesis for examining unit roots:
H_o: $\delta = 0$ Existence of Unit Root (Non-Stationary)
H_1: $\delta \neq 0$ Non-Existence of Unit Root (Stationary),
Here the null hypothesis is shown by Ho and the alternative hypothesis by H1. If the critical values are greater than t-statistics value at the 5% significance level, the null hypothesis—which holds the stationarity of series, can be rejected. This indicates that GDP per capita, FDI, total employed labor force, education expenditure, population per doctor, gross national expenditure and polity index, all are non-stationary at first difference I(I).

Lag Length

Table 3: VAR Order for Lag Selection for the Model

Lag.	LogL.	LR.	FPE.	AIC.	SC.	HQ.
0	-2907.218	NA	6.63e+65	171.4246	171.7388	171.5317
1	-2618.802	441.1059	5.40e+59	157.3413	160.8553	158.1987
2	-2540.451	87.56925*	1.42e+59	155.6148	159.3285*	157.2223
3	-2460.481	56.44950	8.18e+58*	153.7930*	160.7065	156.1507*

*indicatessignificanceat5%

All criteria (AIC, LR, SC FPE and HQ) validated the first lag for computing VAR at 5% in table 5.1 above. Out of five assumptions, the Linear Deterministic Model was selected in order to use the Johansen approach.

Table 4: Johansen long run Results: Dependent variable = GDP per capita

S. No	Variable	Coefficient	S.E	t – values
1	FDI (US$)	1.59 E - 07	0.01780	-6.36702
2	Total employed labor force (million)	5.28	8.7E-05	5.34142
3	Population per doctor	- 1.201	0.00021	0.96666
4	Education Exp (US$)	2.08 E - 07	7.8E-05	-1.88755
5	Gross national expenditure (constant 2015 US$	1.46 E - 08	0.02879	0.85521
6	Polity index	46.8		
7	C	2739.8		

The above table shows the long run Johansen results where the Coefficient of FDI have significant and positive sign showing that FDI have positive effect on Pakistan's GDP growth. The findings indicate that an increase of one unit in foreign direct investment results in an average rise of 1.59 E-07 units in Pakistan's economic development.

These findings are similar and supporting the results found by Jehangir et al. (2020) and Hummaira et al. (2021). The total employed labor force's coefficient is positive, suggesting that GDP growth will be positively and significantly impacted. According to the results, Pakistan's economic growth increases by an average of 5.28 units for every unit rise in the total employed labor force. These findings are comparable to those of Jehangir et al. (2020).

The Coefficient of population per doctor have significant negative sign, showing negative effect of increasing population in proportion to doctors on GDP, For example, an increase of one doctor per unit of population results in an average 1.201 unit increase in GDP per capita or economic growth. Simply it states the increase in health expenditure (proxy for human capital) leads to economic growth. These results are supported also by the study of Faisal (2022) and Taqi (2021).

The Coefficient of education expenditures has significant positive sign expressing that education expenditures have positive impact on Pakistan's GDP growth. Results show that a unit increase in education expenditure leads to increase Pakistan's economic growth by 2.08 E – 07 units on average.

The positive and significant sign of the gross national expenditure coefficient suggests that gross national expenditures have a positive effect on Pakistan's GDP growth. The findings indicate that

a one-unit rise in gross national expenditures results in an average 1.46 E-07 units increase in economic growth of Pakistan. These results are matching with the results founded by Hummaira (2021) and Shafiq et.al. (2021). While the Coefficient of polity index also have positive and significant sign indicating that polity index means that moving towards democracy from autocracy, have a positive effect on Pakistan's GDP growth. The findings indicate that each increase of one unit in democracy results in an average increase of 46.8 units in Pakistan's economic growth.

Table 5: Short Run (VECM) Results of the Model

S. No	Variable	Coefficient	S.E	t – values
1	CointEq1	-0.030076	7.0E-09	1.06
2	D(FDI)(-1)	-1.4E-09	1.0E-8	0.21
3	D(FDI) (-2)	-9.64E-09	0.00844	0.95
4	D(total_ empl_labor_force) (-1)	6.71	7.55143	0.88
5	D(total_ empl_labor_force) (-2)	5.56	6.56205	0.84
6	D(population per Doctor(-1))	-0.079	0.16670	-0.4
7	D(population per Doctor (-2))	0.139	0.14043	0.99
8	D(education_expenditure (-1)	-4.08E-08	1.9E-08	2.1
9	D(education_expenditure(-2)	3.83E-08	2.03E-08	1.9
10	D(Gross national_expend.(-1)	-4.44E-10	1.7E-09	0.26
11	D(Gross national_expend. (-2)	-2.9E-10	1.4E-09	0.21
12	D(Polity index(-1))	1.79	1.63450	1.03
13	D(Polity index (-2))	0.52	1.49613	0.35
14	C	6.61	19.6090	0.33

The above table shows the VECM i.e. results for short run of the model where the value of ECM is --0.030076 which shows how quickly the short-term divergence will be adjusted to the long-term equilibrium level. The second lag is suitable based on the SC criterion. Despite the extremely low result, it indicates that the long-run equilibrium is corrected by 0.030076 percent every year. Long-term stable equilibrium can be attained with the aid of appropriate governmental policy. However, FDI has short-term detrimental effects on Pakistan's economic growth i.e. a unit increase in FDI leads to decrease economic growth up to1.4E-09 units in first and 9.64E-09 units in second lag.

On the other hand, the total employed labor force's coefficient has a positive and significant sign, suggesting that it has a beneficial effect on Pakistan's economic development. The findings indicate that a one-unit increase in the total employed labor force boosts Pakistan's economic growth by 6.71 and 5.56 units on average in first and 2nd lag respectively in short run. The Coefficient of population per doctor have negative and significant sign, signifying a negative effect of increasing population in proportion to doctors on GDP, for example, more physicians per population means more money is spent on the health sector. According to the results, there is a short-term, average drop of 0.079 units in GDP per capita or economic growth for every unit increase in the population per doctor. In the second lag, the coefficient of education expenditures has positive and significant sign, indicating that education spending has a short-term beneficial effect on Pakistan's GDP growth.

The findings indicate that a one-unit increase in education spending results in an average 3.83–08 unit rise in Pakistan's economic development.

In the near term, gross national expenditures have negative and significant impact on Pakistan's GDP growth, according to the coefficient of gross national expenditures.
The findings indicate that a one-unit rise in gross national expenditures results in an average decline in Pakistan's economic growth of 2.9 E-10 and 4.44 E-10 units. While the Coefficient of polity index also have positive and significant sign in both first and 2nd lag indicating that polity index means that moving towards democracy from autocracy, has positive impact on Pakistan's economic growth. The findings indicate that a one-unit improvement in democracy boosts the growth of Pakistan's economy by 1.7 and 0.52 units on average.

Conclusion and Policy Suggestions

This research examines the ways in which Pakistan's economic growth is determined by the numerous factors having human capital, employed labor force, foreign direct investment (FDI), and polity index and government expenditure. The analysis in this study spans the years 1985 through 2023 and is based on annual time series data. The variables are compiled using data from the Pakistani Economic Surveys and the World Development Indicators. The variables' stationarity is confirmed using the augmented Dickey-Fuller test. The unit root test results reveal that all the variables, including having human capital, employed labor force, foreign direct investment (FDI), polity index and GDP are at first difference stationary I(1).
The Johansen co-integration strategy is utilized because of the first difference stationary variables and to obtain short-term and long-term results. The results of the study show that each factor has a substantial impact on Pakistan's economic growth. The impact of human capital (measured through education and health expenditures i.e. population per doctor), FDI, government expenditure were found to be positive.
Similarly, the coefficient sign of polity index was also found to be positive which shows that in era of democracy rather autocracy, the economic growth is positively affected.
Given all of the study's empirical findings, the Pakistani government and private sector should take steps to improve the caliber of its workforce, which will raise earning potential both domestically and abroad and increase remittances, which contribute to the economic growth of a country. FDI as well as public expenditure also affected positively the economic growth; therefore they should also be encouraged through appropriate public policy.
Finally, the impact of polity index on growth of economy was also found to be positive means that democracy type of government is more growth friendly than autocracy and therefore it is highly needed to encourage democracy than autocracy in the said country.

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