

INSTITUTIONS AND ECONOMIC GROWTH IN SOUTH ASIA

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ABSTRACT

Institutions affect the process of economic growth through their many indicators. The authors have checked the relationship between institutions and economic growth in selected countries of South Asia by using data from 1995 to 2010. The results of 'Fixed Effects Estimation' and 'Generalize Method of Moments' confirmed the significant positive relationship between institutions and economic growth for Bangladesh, India, Pakistan and Sri Lanka. Implementation and enforcement power of any economic policy is based on institutional efficiency and quality, so it is suggested that the respective countries should give more focus to build better institutions that, in turn, lead to more economic growth and development.

Keyword: *Institution, Economic Growth, South Asia, GMM*

Jel classification: *O4, O43*

INTRODUCTION

In the last two decades, there is much debate on the major determinants of economic growth. Researchers in the field of economics are still lacking in finding out the very fundamental ingredients of economic growth, the differences in productivity and output. Some countries have lower living standards than that of the others because of low economic growth, low labour productivity and poor performance of economic institutions. This study is designed to explore the institutional role in enhancing economic growth and to explain the differences in living standard among nations living in South Asian region.

In literature, the most cited definition of institutions is "a set of rules, compliance, procedures, and moral and ethical behavioral norms

designed to constrain the behavior of individuals in the interests of maximizing the wealth or utility of principals” (North, 1981, p. 201-202). Schmieding (1992) states that institutions “encompass not only bureaucracies and administrations but also, and more importantly, the entire body of formal laws, rules and regulations as well as the informal conventions and patterns of behavior that constitute the non-budget constraints under which economic agents can pursue their own individual ends” (p. 233). Institutions are the set of established and prevailing rules and laws that makes the social interactions. In short and in a more comprehensive way, institutions are the formal rules and informal norms that together with the enforcement mechanism develop the culture, social behavior and the human interactions. People’s interactions, in turn, help in forming institutions. Institutions can be formal or informal. Formal institutions mean rules and regulations (which are in written shape) and informal institutions mean social behavior and social and cultural capital (informal norms).

Presence of institutions is the ideal thing for the groups of conflict thinking. Groups would be satisfied only in the presence of strong institutions, as the institutions are helpful in resolving conflicts among groups and enhancing their productivity. In this way, institutions are the source to maximize the output. People from different groups can determine the distribution of gains from the uses of their political power.

Two types of institutions *i.e.*, economic institutions, and political institutions are considered very helpful in enhancing economic growth and development of a country. Economic institutions accelerate economic growth because they influence the investment decision in physical as well as human capital, production process and technology. Economic institutions are also helpful in allocations of resources and determining the growth potential of a country. Political institutions determine the constraints and incentives in the political field. Not all individuals and groups of individuals have the same set of choices. So, the political power is the deciding body that has come to a decision. Different groups of institutions may also induce a variety of resource allocation. Some of them promote rent seeking and some of them would allow the competitive forces to play their role. So, given the individual’s preferences and set of institutions, that group will choose the institution of its own choice that has greater political will. Economic institutions causes’ political institution and political institutions causes economic

institutions. Economic institutions depend upon political institutions and the distribution of political powers. Better economic and political institutions lead to higher economic growth and resultantly higher economic growth require more refined and quality economic and political institutions.

Institutions can affect the performance of an economy through resources allocation. Resources allocation is concerned to provide public goods and services, efficient investment decisions and interventions to improve the market functioning. If resources allocation is efficient, then it will lead to more economic growth. Inefficiency in resources allocation may lead toward inefficient decisions regarding public and private investment that will, in turn, lead to lesser economic growth. Institutions support the economic growth process through reducing the level of corruption. In the presences of strong and refined institutions, the level of corruption goes down.

Institutions exhibits increasing return to scale in their nature due to the reason that, they reduce the uncertainty through coordination effect and by initial setup cost. Institutions are helpful in reducing uncertainly (North, 1990), helpful in reducing economic volatility (Klomp & Haan, 2009; Aceomglu et al., 2003; Rodrik, 1999; Mobarak, 2005; Quinn & Wooley, 1996, 2001), lowering transaction cost (North, 1990; Hodgson, 2006; Javaid & Iftikhar, 2011) and securing property rights (North & Weingast 1989; North, 1990; Hodgson, 2006). Institutions can provide the incentive for investment, opportunities for human capital accumulation and adoption of new technologies. Economic institutions influence the structure of economic incentives for investment in a society.

The nature of institutions may be different in different societies. They may be different due to the formal way of decision making or political institutions *i.e.*, local body system, autocracy or democracy. They may be different due to economic institutions *i.e.*, protecting the property rights, freedom of business, tax structure, and freedom of corruption.

The role of institution is explained in literature with the help of two theories *i.e.*, “Predatory Theory” and “Contract Theory”. Jones (1981), DeLong & Shleifer (1993) and Olsen (2000) supporting the “Predatory Theory” by focusing and highlighting the importance of property rights and their protection from expropriation. The “Contract Theory” develops

the link among the type and enforcement of contract to the efficiency of organization (Coase, 1937, 1960; Williamson, 1975, 1985; Grossman & Hart, 1986; Hart & Moore, 1990; Hart, 1995).

Jones & Romer (2009) and Economides & Egger (2009) considered the institutions as a major ingredient of economic growth. According to Brousseau & Glachant (2008), Kirman (2007), Chang (2006), and Furubotn & Richter (2005), the institutional analysis is at its developmental stage. There is need to be done of more research on institutional framework in the process of economic growth (Pelikan, 2003; Rodrick, 2004a).

There are two main schools of thoughts regarding the growth empirics. The first is the 'Neo-Classical Growth Model' presented by Solow (1956). The other is 'Endogenous Growth Theory' given by Lucas (1988) and Romer (1989). The first school of thought said that the economic growth was based on the accumulation of physical capital and is affected by population growth. The second school of thought including Mankiw et al. (1992) said that with physical capital and population growth, technology or human capital was also the basic ingredient of economic growth. An enormous literature showed that institutions matter in the process of economic growth and development (Acemoglu, et al. 2001; 2002; 2003; 2005, Easterly & Levine, 2001; Dollar & Kraay, 2003; Hall & Jones, 1999; Rodrik et al., 2004; Rodrik et al. 2002; Rodrik, 1999; Knack & Keefer; 1995; and Mauro, 1995). Rodrik, Subramanian & Trebbi (2002) found that the contribution of institutions in economic growth was more than that of the geography and trade. Poor and weak institutions of the country lead to poor and weak macroeconomic policies. Lack of property rights protection reduces investment in both physical capital and human capital that also harms the economic growth. The association between institutions and economic performance has come forward recently as a most important issue of attention. The literature showed that the higher economic growth and development were the result of the quality institutions. Two way relationships between institutions and economic growth are to be expected. Better quality institutions lead to higher economic growth and resultantly higher economic growth require more refined and quality institutions. So feedback causality between institutions and economic growth seems to exist.

Institutions are very helpful in explaining the cross-country variation in growth differences. Institutions can affect the process of economic growth

through their many indicators. However, there is controversy in the literature on the relationship between institutions and economic growth. Some researchers are of the view that quality institutions lead to economic growth and hence economic development. Institutions have become the main stream of economic theory. Others are of the view that institutional analysis is now at its developmental stage. It is high time for the researchers conducted more research in this regard. The present study is designed to explore, whether the institutions are helpful in the process of economic growth in four South Asian countries *i.e.*, in Pakistan, India, Sri Lanka and Bangladesh. To explore the relationship between institutions and economic growth in four South Asian countries was the objective of the study.

There is gap in literature that most of the previous studies have examined the institutions and growth linkages, while using one indicator or proxy for each of institutions and economic growth. To fill this gap, this study uses more comprehensive measures known as institution index and GDP index for measuring each of institutions and economic growth, respectively. Most of the earlier studies are based on cross section estimations. This research work used panel regression to avoid the problems that were associated with cross section regressions. Panel regression also gives more robust results than cross section estimations.

This study is a significant addition in existing body of literature as this study will help the governments and other policy makers of the respective countries for assessing the role of institutions towards raising their economic growth and hence economic development. Keeping in view the above discussion, this study includes the institutions as another important factor into the 'Augmented Production Function'. The other variables in production function are physical capital, population and human capital. Inflation is also included because it measures the macroeconomic instability of the country.

REVIEW OF LITERATURE

In the last two decades, there is much debate on the major determinants of economic growth. The factors *i.e.*, physical capital, human capital, trade, investment, technology, foreign direct investment (FDI) and geography have found to affect the economic growth in most of empirical studies. Recent research focuses on whether the institutions matter for

economic growth or not. There is a distinguished line of research that keeps the institutions at the center point of growth analysis. Institutions may affect directly or indirectly to the growth process of a country. Institutions are very crucial in the way of economic growth and development. An enormous literature showed that institutions matter in the process of economic growth and development (Acemoglu, et al. 2001; 2002; 2003; 2005, Easterly & Levine, 2001; Dollar & Kraay 2003; Hall & Jones, 1999; Rodrik et al., 2004; Rodrik et al., 2002; Rodrik, 1999; Knack & Keefer, 1995; Mauro, 1995; Rodrik, Subramanian & Trebbi, 2002; Siddique & Ahmed, 2009; and Lee & Kim, 2009).

Ulubasoglu & Doucouliagos (2004) have found that '*political freedom*' has positive effect on human capital and Total Factor Productivity (TFP), while it has negative effect on labour force and physical capital. '*Economic freedom*' has positive effect on all the variables *i.e.*, human capital, physical capital, TFP and labour force. The combine effect of political freedom and economic freedom was found positive on economic growth.

Developing countries with democratic governments that promote political freedom and civil liberties to their people achieved higher rates of economic growth than that of the non-democratic governments. Lack of political freedom and non-democracy seriously harms the economic performance of a country (Nelson & Singh, 1998).

Knack & Keefer (1995) found that political violence, Gastil political and Gastil civil liberties measures are insufficient measure of institutions. Institutions that protect property rights are very important for economic growth and investment. Ali & Crain (2002) found that civil liberties and political regime did not help in accelerating economic growth, while economic freedom is helpful in the process of economic growth. They found that the economic infrastructure of a country was not connected to high political regime and different levels of civil liberties. Institutions were promoting economic freedom and efficiency and affect the economic performance of a country (Adkins, Moomaw & Savvides, 2002). More economic freedom and human capital accumulation can moved the country closer to productions frontier and improved the economic performance of a country. They also found that economic freedom was promoting the TFP.

Vijayaraghavan & Ward (2001) showed that the security of property rights and size of government was the most significant indicators of the institutions that promote economic growth. In developing countries, economic freedom up to some extent was caused by political freedom in between 1975 to 1990 (Haan & Strum, 2003). Carlsson & Lundstrom (2002) have found that economic freedom index have significant and robust effect on economic growth. All the indicators of economic freedom have significant and positive effect on growth, except government size and trade freedom with foreigners.

Institutional economics are helpful to generalize the new classical economics by adding the institutional theories in economics. Hosseini (2008) found that non productivity, incompetence and uncertainty of the institutions are the factors that handicap the process of economic growth and developmental in Iran. Klomp & Haan (2009) found that the democracy and growth volatility have negative relationship with each other. They also found that some dimensions of policy uncertainty and political instability increase economic growth volatility.

European integration is attractive for most of transition economies because of successful presence and establishment of democratic regime with higher economic performance. It is also more attractive because it stimulates the countries for institutional and structural reforms. Chousa, Khan, Melikyan & Tamazian (2005) said that the growth was necessary for developing the better and stronger institutions but only growth was not enough. The results of Wagner, Schneider & Halla (2009) have confirmed that the institutional variables like rule of law, low level of corruption and quality of rules and regulations have a positive and significant effect on satisfaction with democracy.

Le (2008) found that growth was positively related to higher quality of institutions and large size of trade in the long run. Remittances inserted the negative sign with growth. The short run results also support the long run results. Grogan & Moers (2001) have found that the institutions had much importance for FDI and economic growth. Causation existed between growth and institutions. In FDI and institutions, the degree of causation was low.

The major institutional developments for a transitions economy are legalization and emergence of market economy, protecting the property

rights, private sector growth, development of financial institutions and markets and the liberalization of political type institutions. Hasan, Wachtel & Zhou (2009) showed that developments of financial markets, securing the property rights, legal environment and political diversity have associated with higher rates of economic growth.

Institutions and macroeconomic policies matter for economic growth but it works differently in different countries according to the classification of income. Lee & Kim (2009) found that policy variables such as tertiary education, technology and institutions were the ingredients of long run economic growth. Institutions and secondary education were the major ingredients of economic growth for low income countries, while higher education and technology adoption appears to be significant factor in upper middle income and higher income countries. The results of causality indicated bidirectional causality between institutions and growth.

Haider, Din & Ghani (2011) showed that higher corruption level and low quality of governance leads to increase in inflation and harm the growth process of Pakistan. Rule of law, high level of human capital, free markets and low level of government consumption have showed the better indicators for economic growth (Barro, 1996). Siddique & Ahmed (2009) find that, in Pakistan, institutions are helpful in promoting long run economic growth. Karim, Zaidi, Ismail & Karim (2011) found the log-run relationship among FDI and different institutional variables. Acemoglu & Robinson (2008) said that the key differences in prosperity across the countries are the differences in economic institution. To carry the developmental process, it is necessary to reform these institutions. It is difficult to reform the economic institutions because economic institutions are the collective choice of political processes. They also said that we can learn a lot from the countries that are in political transition, reforming their institutions and move into more successful way of economic development.

Most of the above discussed studies have examined the impact of institutions on economic growth by taking only one or two indicators of institutions and found that the different indicators of institutions were positively related to economic growth. Most of the above discussed studies are based on cross section regressions. Results of cross section regression are not free from serious problem. In addition, there is hardly

any study in existing body of empirical studies that finds out the relationship between institutions and economic growth in South Asian countries. So, this study is a significant addition in existing literature and is designed to explore the relationship between institutions and economic growth. Panel Data Regressions were used to get more robust results in this study. Another significance of this study is that it uses a more comprehensive measures *i.e.*, institutions index, GDP Index and education index in its analysis.

DATA SOURCES AND METHODOLOGY

To achieve the objectives of the study, this study utilized secondary source data. The annually time series data have been collected for the period of 1995 to 2010 in case of Bangladesh, India, Pakistan and Sri Lanka. The data on real gross domestic output (RGDP), education, physical capital, population, inflation and different indicators of institutions have been taken from World Development Indicators (WDI), Freedom House Index (FHI) and United Nations Development Program (UNDP).

To find out the relationship between institutions and economic growth, the following model was estimated:

$$YI_{it} = \beta_0 + \beta_1 INS_{it} + \beta_2 PG_{it} + \beta_3 KG_{it} + \beta_4 EI_{it} + \beta_5 INF_{it} + \varepsilon_{it}$$

Where:

- YI = RGDP Index
- INS = Institutions Index
- PG = Population Growth
- KG = Growth of Physical Capital
- EI = Education Index
- INF = Inflation
- ε = White Noise Error Term

RGDP Index (YI)

The present study uses relatively new proxy of economic growth instead of using conventional measures of economic growth. This study developed a comprehensive measure of economic growth known as

RGDP Index and is abbreviated by Yi. This index has been developed by using UNDP methodology given in the year 2000.

Education Index (Ei)

Education is considering one of the most important indicators of human capital theory. It is considered very important for understanding the growth process. Recent research showed that education was the most important determinant of economic growth. This study utilized the comprehensive measure of education known as education index. This index was developed using the UNDP methodology given in the year of 2000.

Institutions Index (Ins)

Institutions play a key role in the growth process of a country. It is important tool to create harmony in the economy or society and helpful in making fair understanding of human behavior. There is variety of indicators/proxies that have been used to measure the effect of institutions. Index of Economic Freedom reported by Heritage Foundation was used as a measure of institutions in this study as Index of Economic Freedom is based on comprehensive measure of different policy parameters. Index of Economic freedom is an equally weighted index of above indicators. Equal weights were used in this index to avoid the biased behavior toward any specific policy parameter. Each component of index is ranked on 0-100 scale. In INS, 0 score indicates lowest quality of institutions, while 100 score indicates the highest quality of institutions.

Capital (Kg)

Solow (1956) said that high savings leads to more stock of capital that, in turn, used for investment purposes. Physical capital plays a major role in the process of economic growth and development because investment is mainly based on the availability of the finance. Capital is measured through the growth rate of gross fixed capital formation. Capital formation is the addition in the stock of physical capital in a country.

Population (Pg)

Population of a country is helpful in growth process in two ways. Population not only provides the labour force to the country, but it also creates the economics of scale. It plays a major role in establishing the new markets and creating the incentives for production. In this research work, population was measured by growth rate of population.

Time series and cross section data have faced certain limitations. One of the problems of time series analysis is that it fails to give good results in case of a very few observations. In case of very few observations, it is difficult to get significant t-statistics and F-statistics from regressions results. To overcome time series and cross sectional deficiencies, this study utilized panel data to analyze the trends of different cross section over time. Estimation of panel data are considered to be the most efficient and recent analytical techniques in handling the economic data. The main reasons of popularity of panel data estimations is that, it allows the inclusion of both time periods T (*i.e.*, weeks, months, quarters, years, *etc.*) and cross sections N (*i.e.*, individuals, firms, countries, *etc.*).

Fixed Effects Model (FEM)

Each cross section may have its own individual characteristics. Those characteristic may or may not affect the explained variables. FEM is used to explore the relationship between explanatory and explained variables within an entity. FEM estimation assumed that some factors within the entity may have impact on explained variables. Fixed Effects control these factors by introducing dummy variables for time invariant characteristics *i.e.*, race, colonial origin, religion *etc.* Secondly, time invariant characteristics are unique and exclusive for each cross section. It has not effect or has not correlation with other individual characteristics. So, each entity is different, therefore error term and intercept term of each should not be correlated with others. Fixed Effects has constant slopes and different intercept term for each cross section unit. It can also be said that Fixed Effects estimator treated the entity specific or group specific. This means that it allows the different constant for each entity. The equation of FEM can be written as follow:

$$Y_{it} = \alpha_i + \beta X_{it} + u_{it}$$

Where:

- Y = Dependent variable
- α = Intercept for each cross section unit.
- X = Explanatory variable
- i = Each cross section unit or entity
- t = Time period
- u = Error term

Fixed Effects model is also known as Least Squares Dummy Variables (LSDV), because in the estimation of Fixed Effects Model, dummy or binary variables are used for time invariant characteristics. The validity of these variables can be checked through performing the F-test. The hypothesis of F-test can be written as:

$$H_0 = u_1 = u_2 \dots u_{N-1} = 0$$

Baltagi (2005) said that it is simply the Chow test with restricted residual sum of square that is obtained from OLS regression. The unrestricted residual sum of square is obtained by Least Square Dummy variables of Fixed Effects Regressions. F-test follows the Chi square distribution. The rejection of the null hypothesis tells that the estimation of Fixed Effects is consistent and efficient. For the calculation of F-test the following formula is used:

$$F = \frac{\frac{RRSS - URSS}{N} - 1}{\frac{URSS}{NT - N - K}}$$

Where:

- RRSS = Restricted Residual Sum of Squares
- URSS = Unrestricted Residual Sum of Squares
- N = Number of Cross Sections
- K = Number of Parameters to be Estimated
- T = Time Period

Generalize Methods of Moments (GMM)

The present study uses Fixed Effects estimation as well as Generalize Methods of Moments (GMM) estimation in its analysis, as there might be

the problem of endogeneity. It could be arise in regressors, especially in institutional variable, as it has a strong positive correlation with other variables. Empirical literature showed that GMM estimator has been applied on cross-sectional, time series and panel data. The basis of GMM is taken from earlier work and its most obvious statistical antecedents are Method of Moments (Pearson, 1893, 1895) and Instrument Variable (IV) technique (Reiersol, 1941; Sargan, 1958; Hansen, 1982). The starting point of GMM estimation is a theoretical relation that the parameters should satisfy that is to choose the parameter estimates so that the theoretical relation is satisfied as closely as possible.

GMM was developed by Hansen & Singleton (1988). Johnston & DiNardo (1997) said that “(i) GMM nests many common estimators and provides a useful framework for their comparison and evolution. (ii) GMM provides a “simple” alternative to other estimates, especially when it is difficult to write down the Maximum Likelihood Estimator” (p. 327).

The GMM estimator is a robust estimator because unlike Maximum Likelihood Estimation (MLE), it does not require any information of the exact distribution of the disturbances. It is an assumption free method or it is non-parametric method. The theoretical relations that the parameters should satisfy are usually conditions of orthogonally between the some function of the parameters $f(\theta)$ and a set of instrumental variables z_t :

$$E (f (\theta)'Z) = 0$$

Where θ_s are the parameters to be estimated. The GMM selects the parameter estimator, so, that the function “ f ” and the instruments are least correlated, as defined by the criterion function:

$$J(\theta) = (m(\theta))' Um(\theta)$$

Where $m(\theta) = f(\theta)'Z$ and “ U ” is a weighting matrix. Any symmetric positive definite matrix “ U ” will yield a consistent estimate of q . However, it can be shown that a necessary but not sufficient condition to obtain an efficient estimate is to set “ U ” equal to the inverse of the covariance matrix of the sample moments m .

To apply this methodology, the following equation was estimated by GMM:

$$\Delta Y_i = \beta_0 + \beta_1 I_i + \beta_2 X_i + \epsilon_i$$

RESULTS AND THEIR INTERPRETATION

Table 1 exhibits the descriptive statistics. Overall average score of RGDP Index (Y_i) is 52.03. In terms of Y_i, Bangladesh and Pakistan perform below the overall averages score, while Sri Lanka and India is above the overall average. Regarding Education Index (E_i), Sri Lanka is on the top with 82.82 score, while the overall average score of E_i stood at 58.23. The overall average score of institutions index (INS), while is 54.30, of all countries included in the study ranges from 49 to 61. This implies that the institutions are of average quality in these countries of South Asia. There is dire need of improving the quality if institutions in this region of South Asia. The overall mean score of PG and KG is 1.53 and 11.13, respectively.

Table 1: Descriptive Statistics

	Mean	Median	Maximum	Minimum	SD*
Overall Sample					
Y _i	52.03	52.40	66.00	35.20	7.17
PG	1.53	1.59	2.66	0.44	0.53
KG	11.13	9.14	28.04	-11.96	9.64
E _i	58.23	53.51	85.00	38.00	16.09
INF	117.07	110.71	247.09	53.41	43.57
INS	54.30	54.00	66.00	40.90	5.540
Bangladesh					
Y _i	43.81	44.38	50.40	35.20	4.34
PG	1.60	1.70	2.09	1.05	0.38
KG	8.40	8.38	12.06	1.80	2.47
E _i	45.54	45.00	53.88	38.00	5.70
INF	132.39	124.02	192.42	95.94	29.35
INS	49.07	49.95	52.90	40.90	3.13
India					
Y _i	53.83	55.15	59.10	45.49	4.35
PG	1.54	1.52	1.78	1.34	0.17
KG	9.58	7.99	18.85	-0.01	5.80
E _i	59.66	60.00	66.40	52.96	4.67

	Mean	Median	Maximum	Minimum	SD*
INF	96.81	90.42	148.65	62.53	24.94
INS	50.94	51.20	54.40	45.10	2.81
Pakistan					
YI	50.40	50.00	54.54	45.80	3.20
PG	2.10	1.86	2.66	1.76	0.37
KG	2.34	3.97	19.90	-11.96	8.43
EI	44.88	44.00	52.40	38.12	4.72
INF	124.63	113.00	247.09	57.25	55.63
INS	55.78	55.90	58.40	53.00	1.65
Sri Lanka					
YI	60.09	60.50	66.00	52.00	4.48
PG	0.89	0.95	1.24	0.44	0.27
KG	24.18	24.54	28.04	20.04	2.23
EI	82.82	83.00	85.00	81.00	1.26
INF	114.46	102.58	211.77	53.41	51.36
INS	61.41	62.05	66.00	54.60	3.31

*Standard Deviation

Table 2: Cross Correlation

	YI	INS	KG	PG	EI	INF
YI	1.00	–	–	–	–	–
INS	0.62	1.00	–	–	–	–
KG	0.54	0.51	1.00	–	–	–
PG	-0.54	-0.41	-0.71	1.00	–	–
EI	0.80	0.64	0.77	-0.84	1.00	–
INF	0.22	-0.11	-0.12	-0.17	0.04	1.00

Table 2 present the results of correlation among variable. These results show that EI and INS are highly correlated with YI *i.e.*, with the value of 0.80 and 0.62, respectively. The correlation between PG and YI and between KG and YI has been found -0.54 and 0.54, respectively.

To examine the relationship between institutions and economic growth, various econometric techniques were used. F-tests, Fixed Effects

estimation and GMM techniques are applied to meet the objective of the study. The results of above techniques are being presented:

The results of the F-test in Table 3 are used to the choice between Fixed Effects and Common Constant method. As F-test gives the results in favor of Fixed Effects Method, so, the model has been estimated by Fixed Effects Method. The results are present in Table 4.

Table 3: F-Test Estimates

Effects Test	Statistic	d.f.	Prob.
Cross-section F	11.157	(3,55)	0.000
Cross-section Chi-square	30.421	3	0.000

Table 4: Fixed Effects Estimates

Dependent Variable: YI

Variables	Coefficient	Standard-error	t-value	p-value
C	0.091	0.139	0.654	0.516
PG	0.034	0.021	1.678	0.099
KG	0.116	0.020	5.734	0.000
EI	0.195	0.098	1.998	0.050
INS	0.309	0.133	2.326	0.024
INF	0.070	0.012	5.907	0.000
<i>R</i> ²	<i>0.865</i>			
<i>Adj. R</i> ²	<i>0.845</i>			
<i>F</i> -statistic	<i>43.869 (0.000)</i>			

Fixed Effects estimation has been used to control the country specific differences. The entire variables such as PG, KG, EI, INS and INF have the positive effect on YI. KG and INS are statistically significant at 1 percent level of significance. EI and INS are statically significant at 5 percent level of significance, while PG seems to be significant at 10 percent level of significance. The INS has been found to be the major contribution to YI as the estimated coefficient of INS is 0.309. The value of R-square is 0.865. It shows that 86.5 percent variation in YI is due to KG, PG, EI, INS and INF. The F-test hypothesis is rejected that the countries effect is not important. F-test is significant at 01 percent level of significance.

The present study also applies the GMM to eliminate the endogeneity if any that may arise due to the correlation of country specific effects or it may be due to the time invariant characteristics or it may be due to the left or right hand side endogenous variables. As Efendic, Pugh & Adnett (2011) said that the institutions were endogenous. To solve the problem of endogeneity bias, this study utilized the GMM. The results of GMM are presented in the Table 5.

Table 5: GMM Estimates
Dependent Variable: YI

Variables	Coefficient	standard-error	t-value	p-value
C	0.005	0.069	0.073	0.942
PG	0.035	0.019	1.831	0.073
KG	0.103	0.029	3.557	0.001
EL	0.105	0.062	1.675	0.100
INF	0.080	0.013	5.916	0.000
INS	0.546	0.021	25.610	0.000
<i>R</i> ²	0.858			
<i>Adj. R</i> ²	0.837			
<i>J</i> -statistic	49.244			

The most important issues while applying the GMM is choosing the valid instrument. Trade freedom is used as the instrument of the institutional index due to the following reasons. Firstly, the cross correlation between trade freedom and institutional index is 0.83, which shows that they are highly correlated and can be used as the instrument. Further, the coefficient of Henson Modified J-statistics also shows that the instrument is valid. The estimated results of GMM in Table 5 portray the same picture as Fixed Effects estimation shows in Table 4. In GMM estimation, INS also appears the major determinant of YI. The entire variables have the positive and statistically significant effect on YI.

CONCLUSION AND RECOMMENDATIONS

Institutions are very crucial in the way of economic growth and economic development process. The association between institutions and economic performance has come recently forward as a most important issue of attention. From the descriptive statistics, it has been found that the institutions in this region of South Asia are of average quality. It has also

been found from the estimated results of each of Fixed Effects Method and GMM that the variables physical capital, population, education, inflation and institutions have the positive and significant effect on economic growth in selected countries of South Asia. The variable 'institutions' has been found to be the major determinant of the economic growth of all selected countries. On the basis of the findings, the present study recommends that monetary authorities should keep inflation below its threshold level so that it can neither harm the economic growth nor the institutions. The present study also recommends the adoption of such policies that raise the education level of the masses, skills of the population and quality of institutions that, in turn, lead to more economic growth and development. The present study also suggests that the countries should adopt those institutional structure and policies that assured the enforcement mechanism, fair regulation of labour and credit and should allow free exchange. Implementation and enforcement power of any economic policy is based on institutional quality that is why policy makers should explore further the other indicators of institutional growth. As institutions has been found to be the significant determinant of economic growth of all selected sampled countries, so the present study recommends the development of effective institutions for enhancing economic growth in these countries of South Asia.

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