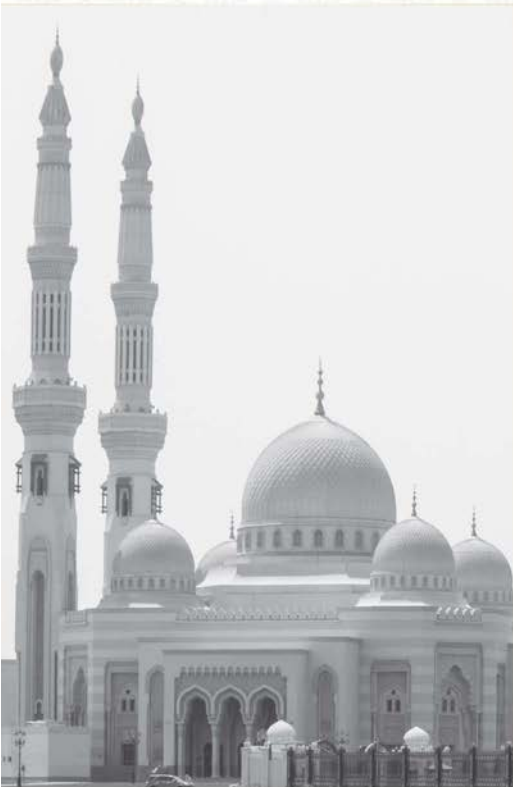


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هل المؤسسات تسبب النمو؟ النظرية والأدلة من بعض دول منظمة
التعاون الإسلامي

DO INSTITUTIONS CAUSE GROWTH? THEORY AND
EVIDENCE FROM SOME SELECTED OIC COUNTRIES¹

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الملخص

الغرض الرئيس من هذا البحث التجريبي يدور حول إقامة علاقة بين العوامل المؤسسية والنمو الاقتصادي. حيث أُخِذَتْ عينة من أربعين دولة إسلامية تتبع منظمة التعاون الإسلامي (OIC). ثم جُمِعَتْ بيانات السلاسل المقطعية خلال الفترة من 2002 وحتى 2018 من مصادر رسمية وموثوقة دولياً، وباستخدام أدوات قياس اقتصادية مناسبة بقصد التقدير. أظهرت النتائج أنّ العوامل المؤسسية مهمة فعليا لأجل تحقيق نمو اقتصادي أعلى. كما تمّ التوصل إلى أن السيطرة على الفساد هي الدافع الأساسي خلف النمو الاقتصادي. وبالمثل فإنّ بعض القيود التنفيذية تُسهم في الإضرار بالنمو الاقتصادي. كما أنّ الدور القانوني وفاعلية الحكومة تلعب دورا فعالا وإيجابيا في عملية النمو، مع أنّها لم تكن ذات دلالة إحصائية. العوامل الثابتة مثل الانفتاح التجاري ومتوسط سنوات الدراسة لعبا دورا إيجابيا في النمو الاقتصادي كما كان متوقعا. بالإضافة إلى ذلك، فقد كان هناك أثرٌ إيجابيٌ إلا أنه ضئيل في مستوى التوظيف للقوى العاملة ومخزون رأس المال على النمو الاقتصادي. توصي الدراسة الدول الإسلامية المنتمة لمنظمة التعاون الإسلامي بالدفع نحو السيطرة على الفساد وتخفيف القيود المتعلقة بالنظام التنفيذي، وتحسين فاعلية الحكومة من أجل تسريع عملية النمو الاقتصادي. قدمت هذه الدراسة فهما مفصلا لدور المؤسسات في النمو الاقتصادي عمليا ونظريا للدول الأعضاء في منظمة التعاون الإسلامي لأول مرة.

Abstract

The main purpose behind this empirical investigation was to establish a relationship between institutional factors and economic growth. For this purpose, a sample of 40 countries belonging to Organization of Islamic Cooperation (OIC) is utilized. Panel data for the period 2002-2018 is collected from internationally reliable sources and suitable econometric tools are employed for the estimation purpose. Results revealed that indeed institutional factors matter for achieving higher

economic growth. Control of corruption is found to be the main driving forces behind the economic growth of OIC countries. Similarly, constraints both executive and political are detrimental for economic growth. Rule of law and government effectiveness have played a positive role in the growth process; however, they are insignificant statistically. The control variables such as trade openness and mean years of schooling have played their expected positive role in economic growth. Moreover, employment level of the labor force and capital stock have impacted economic growth of these countries positively but insignificantly. The study recommends that countries belonging to the OIC shall move towards control corruption and relax constraints related to both executive and political regime and bring improvement in government and rule of law in order to speed up the process of economic growth. This study has provided detailed understanding about the role of institutions in economic growth both empirically and theoretically for OIC member countries for the first time.

الكلمات الدالة: المؤسسات، النمو الاقتصادي، الدول الإسلامية، بيانات السلاسل
المقطعية

Keywords: Institutions, Economic Growth, Muslim Countries, Panel Data.

1.0 Introduction

It has been observed in this real world that economic performance is not only dependent on different factors such as human and physical resources, but it is also realized that institutions are also playing a very significant role in the process of growth either these institutions are formal or informal, i.e. formal institutions are endorsed by the state and the rest are informal institutions. Institutions are features of the human population (Davis 2010, p.viii). North (1994) defined as: “The humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal

constraints (norm of behavior, conventions, and self-imposed code of conducts) and their enforcement characteristics”. And he also in opine that if institutions are “the rules of the games” then organizations and entrepreneurs are the players of the game. In the current literature, many studies discussed the impact of institutions on the performance of the economy (for example Sen 1999; Acemoglu, Johnson and Robinson 2005; Rodrik, Subramanian and Trebbi 2004; Banerjee and Iyer 2005). The interaction of both formal and informal institutions is also providing a reasonable ground for the speedy growth of any economy (Rutherford 1994; Hodgson 2015; Milonakis and Fine 2009). According to Polany (1944) that economic activities and the market are embedded into a larger set of social arrangements and institutions such as culture, customs, law or the state. However, Hindriks and Guala (2015, 2) have given three definitions of institutions as: “Rule-based conception: institutions are learned social behavioral rules that guide, enable and constrain behavior in social interaction. Equilibrium-based conception: institutions are equilibria of strategic games (namely social dilemmas/prisoners’ dilemmas) and constitutive rules conception: institutions are conceived as systems of constitutive rules that assign statuses and functions to physical entities – for example pieces of papers that are to be used as money.”

In the Islamic framework, formal and informal institutions have own characteristics. They are based on the “*Quran* and the traditions of Prophet (s.a.w.s.)”. Muslims believes that rules given by the aforementioned sources are universal. It is assumed that in the Islamic states both institutes have the maximum harmony with each. Consequently, the chances of conflict are minimum.

In this article, we investigate the impact of institutions on economic growth. We have focused on member countries of OIC organization. Either practically these two institutions are conflicting with each other or not. And theoretically we will discuss that how their interaction will improve the economic performance of the Islamic state (Nooteboom, 2007). In terms of sample selection, we have focused on member countries of OIC organization. The main motivation behind focusing on OIC is that it is largely ignored in previous literature and further it is the largest organization of Muslim countries. Based on data

availability, we have included 40 countries in our sample, for the secrecy purpose we did not mention the name of the countries.

The remaining part of the paper is divided into various sections. Section 2 will discuss the important definitions of conventional economics with more emphasis on the institutional economics. Section 3 will present the formal and informal institutions and their role in changing the economic performance particularly in the Islamic state. This section will also explain the whole phenomenon with the help of some examples taken from the Islamic history. Modeling and estimating methodology are presented in section 3. Results are discussed in detail in section 4. The final section is consisting of concluding remarks and policy implications.

2.0 Institutions, Pillars of Institutional Economics and Growth

This is a well-recognized phenomenon that most of the world economies have adopted the capitalist economic model. Because most of the planners and policy makers all over the world have got their training from the institutions which are well reputed in transforming the economic thoughts of conventional economics, i.e. classical, neo-classical and Keynesians. However, it is also a well-recognized phenomenon that same economic models, policies and policy instruments have different impacts on the growth of their economies. During the old colonial period, it was observed that most of the colonies are applying their master's models but the results were quite different.

Currently most of the Islamic states are applying the same economic models but the end result is different (North, 1990). The same can be observed in the current Islamic states, for example, the economic model of Malaysia and Pakistan are approximately developed on the same foundations, but their economic performance and pace of growth is different.

Most of the economic models which are developed for the economic growth and performance are based on the different school of thoughts (Bernstorff, 2004), i.e. classical, neo classical, Marxist, Keynesian, neo-Keynesian and institutional. Classical are in opine that knowledge, property rights, open competition are the main ingredients of growth. It is well worth to note that that still the models of economic

growth which was developed by this school is not able to support the sustainable economic growth. On the other hand, the economic models of neo-classical are based on very strong assumptions which have not the capacity to match with the economic issues of the real world, such as maximizing behavior, stable preferences and market equilibrium (Joskow, 2002; Pittaway, 2005).

In the conventional literature, it has been observed that approximately all of the models are based on the economic variables whereas there are very few spaces for the social, moral and ethical variables. For example, maximization of the profit, minimization of cost or opportunity cost are pure economic variables. However, these models are unable to solve the issues like positive transaction cost, incomplete knowledge and different types of the property rights. A very particular example of the failure of the neo-classical is the recent worst world financial crises which was observed in 2007. Similarly, after the depression of 1930's, the Keynesian economics gave the idea of autonomous demand and claimed that government knows the social welfare function simultaneously and its control plays a very important role in the process of growth. The game was over in 60s and 70 because of hyperinflation. Afterwards, the world had seen a new system, known as Marxism, which was based on socialist bureaucracy and was another sort of exploitation of the poor segment of the society.

At the end of second world war, former colonies became independent state, this period is known as post colonialism. Most part of the developing world followed the above-mentioned economic models. However, hardly any one was able to get the success and not qualified for the achieving the targets of development. There are number of reasons which were cited in the literature, i.e. lack of utilization of resources, lack of capital and human capital and interference of the international institutions. It is also interesting to note that even countries were rich resourced, but they still remained underdeveloped. For example, East European, Latin American, African economies or GCC. It is also interesting to note that post-colonial period Korea and Pakistan have seen the different economic growth even their models are similar.

Later on, it was realized that transaction cost, imperfect information and boundary rationality are also important areas where

the economist have to concentrate. Consequently, institutional economics was emerged as an independent school of thought (Matthews, 1986) and its methodology covers economic as well as social issues (Libecap, 1998). Consequently, the economist tried to develop theoretical and empirically models and discuss the significant role of the formal and informal institutions in the process of growth. It was also realized that exchange cannot take place without transaction cost. Pejovich (1999, p.166) concluded as “rational expectation theory brings the new institutional economics and neoclassical economics into proximity but not to convergence. Furthermore, rational expectation theorists consider the process of adaptation to an optimal solution as a steady trial-and-error process in which the participants cease to acquire new knowledge”. In short, there are four major pillars of institutional economics. These include informal, formal, property rights, and transaction costs.

3.0 Informal Institutions

“Informal rules are traditions, customs, moral values, religious beliefs, and all other norms of behavior that have passed the test of time” ... “They are maintained from one generation to another through various transmission mechanisms such as imitation, oral tradition, and teaching. The enforcement of informal rules takes place by means of sanctions such as expulsion from the community, ostracism by friends and neighbors, or loss of reputation” (Pejovich 1999, p.166-167). Material beliefs can change rapidly, as can the institutions have based on them, for example, systems of property rights, with changing factor and commodity prices (Lane-Fox, 1988). North (1990) pointed out that “informal institutions are: extensions, elaborations, and modifications of formal rules; socially sanctioned norms of behavior; and internally enforced standards of conduct”. According to Hillier (2000), “Informal institutional structures are generally located outside the formalized routines of governance and provide the medium where decision-making and bargaining take place”. The available literature is not conclusive on the exact definition of informal institutions. All definitions of information institutions share some common characteristics for example family and kinship and traditions. Sindzingre (2006) explained as: “Norms and contracts are said to be

formal not only because they are written, but also because they are guaranteed by a governmental legal system, in contrast with norms that are maintained ‘privately’ by social groups (e.g., traditions) through personal transactions and reputational mechanisms” (p.5-13).

3.1 Formal Institutions

“Formal rules are constitutions, statutes, common law, and other governmental regulations. They determine the political system (i.e., the governance structure and individual rights), the economic system (i.e., property rights and contracts), and the enforcement system (i.e., the judiciary and the police). Governmental authorities enforce formal rules by means of sanctions such as fines, imprisonment, and execution” (Pejovich 1999, p.167).

According to Hodgson (2001), “formal institutions, generally as explicit legal rules, represent the dominant context for market operation”. Knight (1992) defines as: “formal institutional rules represent those constraints which are more explicitly socially shared”. Likewise, North (1990) argues that “formal institutions constitute a relatively small proportion of total institutional constraints, formal institutions are seen to provide a level of stability to social and economic interaction”. North (1994) said as: “economies that adopt the formal rules of another economy will have very different performance characteristics than the first economy because of different informal norms and enforcement. The implication is that transferring the formal political and economic rules of successful Western economies to third-world and Eastern European economies is not a sufficient condition for good economic performance.”

3.2 Property Rights

According to Pejovich (1999, p.167), “Property rights are relationships among individuals that arise from the existence of scarce goods and pertain to their use. They are not about the relationship between individuals and objects. The most common types of property rights today are private property rights, communal property rights, and state or public property rights. Institutions, in this framework, can be seen as containers that hold property rights.” For Alchian, “property rights are ‘the rights of individuals to the use of resources (1965, p. 817) not

just under the law, but in reality”. Allen (1999) commented that that wealth and property rights are related monotonically.

Allen (1999) highlighted three distinct channels by which people are enhancing property rights: "First, the individual may steal the good in question. Second, the individual may privatize a good that was previously in the public domain. Finally, an individual may cooperate with other individuals with an agreement to divide the new wealth in some fashion." Cheung (1974) and Barzel (1985) documented those efforts for securing property are linked with theft positively.

3.3 Transaction Costs

“Transaction costs are the costs of all resources required to transfer property rights from one economic agent to another. They include the cost of making an exchange (i.e., discovering exchange opportunities, negotiating exchange, monitoring exchanges, and enforcing agreements) and the cost of maintaining and protecting the institutional structure (i.e., the judiciary, police, and armed forces)” (Pejovich 1999, p.167).

Allen (1999) presented two important definitions of transaction costs. These include the “Neoclassical” which is based on the costs of trading across a market, while the “property rights” definition is dependent on costs of establishing and enforcing property rights. There is a close relationship between the property rights and transaction cost which could be studied using the following “Coase theorem”:

- a) **Coase Theorem:** “in the absence of transaction costs, the allocation of resources is independent of the distribution of property rights” (Allen 1999).
- b) **Property Rights:** “the ability to freely exercise a choice over a good or service (Ellickson, 1991; Landa, 1994)”.

In the event of incomplete property rights, there is a greater tendency that individuals would be trying to maintain their existing property rights. Further, they would also to secure new property rights. Consequently, the property right definition of transaction cost would be like the following:

- c) **Transaction cost:** “the costs establishing and maintaining property rights” (Allen 1991).

Demsetz (1964) states that “Transaction cost may be defined as the cost of exchanging ownership titles” (1988, p. 64). This definition indicates that property rights and transaction costs can be seen in a scenario when there is exchange of property rights. From this, the neoclassical definition emerged which is given below.

- d) **Transaction Costs:** “the costs resulting from the transfer of property rights” (Niehans, 1987).

In conventional literature the definition of transaction cost can be concluded as follows: “In general, transaction costs are ubiquitous in market economies and can arise from the transfer of any property right because parties to exchanges must find one another, communicate and exchange information. There may be a necessity to inspect and measure goods to be transferred, draw up contracts, consult with lawyers or other experts and transfer title. Depending upon who provides these services, transaction costs can take one of two forms, inputs or resources including time - by a buyer and/or a seller or a margin between the buying and selling price of a commodity in a given market” (Stavins 1995, p. 134). According to Neihans (1987) as: “That parties find each other, they have to communicate and to exchange information . . . goods must be described, inspected, weighed and measured. Contracts are drawn up, lawyers may be consulted, title is transferred, and records have to be kept. In some cases, compliance needs to be enforced through legal action and breach of contract may lead to litigation” (p. 676).

3.4 Institutions and Economic Growth

There are two approaches discussing the relationship in between the growth and other independent variables. “The first approach emphasizes the need to start with democracy and other checks on government as the mechanisms for securing property rights. With such political institutions in place, investment in human and physical capital, and therefore economic growth, are expected to follow. The second approach emphasizes the need for human and physical capital accumulation to start the process. It holds that even pro-market

dictators can secure property rights as a matter of policy choice, not of political constraints. From the vantage point of poor countries, it sees democracy and other institutional improvements as the consequences of increased education and wealth, not as their causes” (Glaeser et al. 2004, p.271-272). North (1990), Acemoglu and Robinson (2013) and many others institutional economists are in opine that economic and political institutions have a significant impact on the pace of growth. Acemoglu et al. (2005) and Acemoglu and Robinson (2013) discussed in detail about the “non-democratic political institutions”, “weak rule of law” and “absence of private property rights” (extractive) whereas the reverse of extractive is the inclusive institutions. In their opinion that inclusive institutions are the cause of long-run growth, i.e. high association on one hand in between the poor innovations and “extractive” institutions whereas on the other hand in between high correlation in between innovation and “inclusive” institutions.

Montesquieu (1748) and Smith (1776) are in favor of limited government and also many institutional economists have the same opinion as Buchanan and Tullock (1962), North and Thomas (1973), North (1981, 1990). DeLong and Shleifer (1993) provided the empirical evidence and studied the case of European urban sector and found that limited government is the main cause of growth. Among others Knack and Keefer (1995), Mauro (1995), Hall and Jones (1999), Acemoglu, Johnson and Robinson (2001, 2002), Easterly and Levine (2003), Dollar and Kraay (2003), and Rodrik, Subramanian, and Trebbi (2002) have the same conclusion that political institutions with limited government has positive impact on the growth of the country.

In the opinion of Glaeser et al. (2004) that institutions are not the source of growth rather human capital and good policies are the main source of the growth. On the other side Constantine (2017), of Chenery and Syrquin (1975), Kuznets (1971), Kuznets (1961), Kuznets (1957), Lewis (1954), Ocampo et al. (2009), Pasinetti (1983), Saviotti and Pyka (2004), Syrquin et al. (1984), and many others concluded that economic structure (i.e. creation of new sectors and economic activities) of any country is the main source of growth rather than the institutions either extractive or inclusive. Mathur (1991), Azid (1993) added that it is the aggregate demand which ignites the economic growth. Hidalgo et al. (2007) has a very interesting view

about the economic structure of the economy and growth, in their view if good are produced in the periphery of the product space then the pace of growth will be very slow and if they are produced in the near at the center of the product space then economy can achieve its targets of growth successfully. Dasgupta and Stiglitz (1980), Nelson and Winter (1990), Mathur (1993), Andreoni (2014) and Schumpeter (2008) are in the favor of non-competitive market and diversifications, in their opinion market structure and strategies are more supportive to the innovations and technical progress. Chang (2003), Khan and Jomo (2000); Reinert (2008) concluded that growth and development change the direction of the institutions. Khan (2010), on the other hand said that the performance of institutions is based on the economic and political structure of the economy whereas North et al. (2007) emphasized that political structure is more important than the economic structure.

3.5 Institutions in Islamic Framework²

This section explains the institutional structure in the framework of Muslim society. Further, we have also briefly articulated the formulation of informal and formal rules. Islam regulates both asceticism and worldliness. In Islam, social, political, and military aspects precepts are discussed comprehensively. The religion of Islam has five pillars. These include Unity of God, Fasting, Prayers, Pilgrimage and Alms.

The state has both moral and ethical responsibilities. While deciding the rules, the state has to ensure the inclusion of social, cultural, moral and ethical variables along with economic variables. (Morrison, 2000). However, religion has been included rarely in applied studies. Anderson *et. al.* (2000) investigated the role of religion in the enterprise culture. The authorities are bound to take care of stakeholders (Sen, 1993; Boatright, 2002; Zaman 2005; Mannan, 1992).

² This section is part of Azid, T. (2012) "Impact of Interaction of Formal and Informal Institutions on Economic Growth and Development in the Framework of Islamic Economics", paper presented at the 8th *International Conference on Islamic Economics and Finance*, KBHU, Doha, Qatar.

Fortunately, the Islamic framework guides the economic agents towards the positive as well as normative aspects in all fields of life. We have the same guidance in the theories of economics, e.g. the theory of consumption, theory of production, theory of distribution and so on. The main objective of an Islamic government to maintain justice and increase welfare. It is recommended that the government should include the mentioned four ingredients to policy formulations (Choudhury, *et. al.* 2006; Azid *et. al.* 2008).

It is widely accepted that the Islamic system of governance works on the principle of no-injury or principle of *maslahah* which will minimize the transaction cost (Bashir, 1997). The early works of jurists are also based on these two principles. It is established that worldly goods are for the advantage of all, and no one has the right to use these goods to cause a loss to the other members of society. Islam gives training to man on how to develop morals, and how to use these morals to bring faster economic coordination.

Islam has its own rules, laws and regulations towards the nature as well as the economic perspective of the government, which are to some extent different from the conventional system. The Islamic norms are expected to change the policies and directions of the policies. Although we do not find any restriction on establishing firm any informal rules.

The Islamic system definitely accepts and appreciates norms helpful for poverty reduction and further considers a cultural norm with such objectives as a benefactor of the community. Moreover, the functioning of institutions regardless of their nature is based on the principles of Qur'an and *Sunnah*. It means that Islam encourages socially responsible institutions.

Mannan (1992) highlighted two important questions that need to be recognized while explaining the behavior of institutions:

- (i) "What contribution is the cooperation of the informal-formal institutes going to make?"
- (ii) "Who are the beneficiaries of the product of this cooperation?"

Iqbal and Mirakhor (2003:58) content that "In Islam, expected behavior of the state would not be any different from the expected behavior of any other member of the society".

4.0 Empirical Model and Estimating Methodology

4.1 Model

This study intends to identify the relationship between institutional factors and economic growth in the context of countries belonging to OIC. There are different institutional factors identified in the literature which can affect economic growth in one way or the other. We have focused on the dominant institutional factors such as executive constraints, political constraints, democracy, government effectiveness, rule of law and control of corruption to explore their relationship with economic growth. Basically, it is a growth-accounting modeling, therefore, we have used some control variables such as capital stock, mean year of schooling, trade openness and employment level in our model. The following base-line model is specified for the empirical analysis.

$$Growth_{it} = b_0 + b_1 econst_{it} + b_2 pconst_{it} + b_3 dem_{it} + b_4 gef_{it} + b_5 rol_{it} + b_6 coc_{it} + b_7 cstock_{it} + b_8 edu_{it} + b_9 emp_{it} + b_{90} trade_{it} + U_{it} \quad (1)$$

The dependent variable in expression 1 is the growth of real per capita GDP and it is used to capture economic growth. The independent variables include both executive and political constraints, democracy, government effectiveness, rule of law, control of corruption, physical capital stock, employment level and trade openness.

4.2 Sample, Data and Description of Variables

Initially, we focused on some selected countries included in OIC. However, we were able to get data for the period 2002 to 2018 for these countries. For economic growth, we have taken the growth of real per capita GDP. Executive constraints are measured on scale ranging from 1 to 7 where 1 shows unlimited executive authority while 7 stands from subordination. Political constraints are also capture through a scale which ranges from 1 to 7 where the value of 1 shows no political constraints while the value of 7 reflects highest political constraints. Democracy is measured by an index ranging from -10 to +10. The value of +10 the indication of strongest democracy while -10 shows strong autocracy. Observations on executive constrains,

political constraints and democracy index are taken from polity IV project. The index of government effectiveness ranges from -2.5 to +2.5. The index takes a value of -2.5 for weak governance performance and +2.5 for strong governance performance. The index used for the rule of law also ranges from -2.5 to +2.5 where -2.5 shows lowest rule of law and 2.5 is the reflection of highest rule of law. Control of corruption is also approximated by an index ranging from -2.5 to +2.5. The lowest value of the index reflects highest level of corruption while the highest value represents lowest level of corruption. Relevant data on government effectiveness, rule of law and control of corruption are collected from World Governance Indicators. Capital stock is used as a proxy for domestic investment while mean years of schooling are used to quantify human capital or education level. Trade openness is approximated by the ratio of exports plus imports to GDP while employment level of the labor force is measured by number of people engaged in millions. Data on per capita GDP are taken from World Development Indicators. Similarly, statistics on employment level and capital stock are taken from Penn World Tables. Finally, observations on mean years of schooling are obtained from UNDP. Detailed information on variables and data sources are shown in Table 1.

Table 1: Variables Construction and Data Sources

Variables	Description	Data Source
Economic Growth	The growth rate of real per capita GDP	World Development Indicators
Executive Constraints	Index ranges from 1 to 7 1: Unlimited Executive Authority 7: Executive Parity or Subordination	Polity 4 Project online available at: https://www.systemicpeace.org/polityproject.html
Political Constraints	Index ranges from 1 to 7 1: Unlimited Executive Authority 7: Executive Parity or Subordination	Polity 4 Project online available at: https://www.systemicpeace.org/polityproject.html
Democracy	Index ranges from -10 to +10 -10: (Strongly Autocratic)	Polity 4 Project online available at: https://www.systemicpeace.org/polityproject.html

	+10: (Strongly Democratic)	
Government Effectiveness	Index ranges from -2.5 to + 2.5 -2.5: weak governance performance +2.5: strong governance performance	World Governance Indicators
Rule of Law	Index ranges from -2.5 to + 2.5 -2.5: lowest rule of law +2.5: Highest rule of law	World Governance Indicators
Control of Corruption	Index ranges from -2.5 to + 2.5 -2.5: Highest corruption +2.5: Lowest corruption	World Governance Indicators
Capital Stock	Domestic Investment	Penn World Tables
Mean Year of Schooling	Education	
Employment Level	Labor Force Number of people engaged (In Millions)	Penn World Tables
Trade Openness	Trade as percentage of GDP	World Development Indicators

4.3 Estimating Methodology

For the estimation of model 1, panel data is obtained from different reliable sources. Panel data in literature is used extensively in applied research. The estimation of panel data model is usually done through the fixed and random effects estimators. Both the fixed and random effects estimators are specifically designed to handle panel data models. The fixed effects modeling is considered more effective in situations where the correlation between the error term and independent variables is suspected. On the other hand, the random is believed to be superior as compared to the fixed effects estimator in cases where the presence of correlation between the error term and independent variables is rejected. There are advantages as well as disadvantages associated both with random and fixed effects approaches. The fixed effects estimator is unable to take care of time-

invariant characteristics although works well in controlling the correlation between the independent variables and error term. Similarly, the random effects estimator becomes inefficient in the presence of serial correlation between the independent, however, it can handle time-invariant characteristics. The decision whether to use the fixed or random effects estimator is usually done through the Hausman specification (1978) test.

In addition to the fixed and random effects estimator, we have also focused our attention on employing some additional estimators such as the generalized least square (GLS) and Two stages least squares (2SLS) as well to estimate the specified model. The purpose of using the GLS is that it is used in the literature as the robustness testing of the traditional fixed effects modeling (see Chen and Gupta, 2009). On the other hand, the 2SLS estimator is very effective in situation where the endogeneity issue is present in the model. In the analysis, we have used lagged values of selected variables as instrument to tackle the potential endogeneity problem.

The Hausman test performed provided sound support to use the fixed effects estimator. Results of the fixed effects estimator are shown in bottom part of Table 3. Similarly, models are estimated with the help of White robust estimator in order to eliminate of the problem of heteroscedasticity. Similarly, the redundant testing provided in favor of using both cross-section as well as time fixed effects estimation. Besides regression analysis, we have calculated correlation among the variables and presented in Table 2. Correlation among all the variables lies within the acceptable range.

Table 2: Correlation Matrix

Probability	GROWTH	Capital Stock	Education	G-Effectiveness	Employment	Trade Openness	Executive Constraints	Political Constraints	Control of Corruption	Rule of Law	Democracy
GROWTH	1										
Capital Stock	0.022	1									
Education	0.055	0.589	1								
G-Effectiveness	-0.160	0.527	0.498	1							
Employment	0.192	0.670	0.048	0.051	1						
Trade Openness	-0.046	-0.009	0.367	0.510	-0.387	1					
Executive Constraints	0.011	-0.065	-0.245	-0.071	0.081	-0.248	1				
Political Constraints	0.034	-0.287	-0.341	-0.188	-0.004	-0.190	0.668	1			
Control of Corruption	-0.256	0.320	0.308	0.869	-0.181	0.513	-0.025	-0.144	1		
Rule of Law	-0.250	0.349	0.377	0.895	-0.148	0.501	-0.043	-0.116	0.927	1	
Democracy	0.053	-0.206	-0.387	-0.227	0.103	-0.306	0.932	0.745	-0.194	-0.195	1

5.0 Results and Discussion

Results extracted by employing appropriate econometric tools are depicted in Table 3. For instance, the fixed effects findings are shown in second column while third and fourth columns of Table 3 shows findings of GLS and 2SLS estimators. Similarly, models are estimated with the help of White robust estimator to get rid of the problem of heteroscedasticity. Similarly, the redundant testing provided in favor of using both cross-section as well as time fixed effects estimation. The methodologies chosen for the empirical analysis are consistent with the previous literature (Tahir and Alam, 2022; Tahir et al., 2019).

Table 3: Main Regression Results

Variables	Fixed Effects	GLS
Executive Constraints	-0.003 (0.002)	-0.006*** (0.001)
Political Constraints	-0.001 (0.003)	-0.005*** (0.002)
Democracy	0.002** (0.001)	0.002*** (0.0007)
Government Effectiveness	0.011 (0.009)	0.0001 (0.008)
Rule of Law	0.012 (0.009)	0.001 (0.008)
Control of Corruption	0.018*** (0.007)	0.026*** (0.004)
Capital Stock	0.002 (0.007)	-0.006** (0.003)
Mean Year of Schooling	0.092** (0.045)	-0.007 (0.026)
Employment Level	0.008 (0.015)	-0.007 (0.005)
Trade Openness	0.036*** (0.007)	0.024*** (0.005)
CONSTANT	-0.285 (0.104)	0.081 (0.028)
Diagnostics	R-Squared:0.350 Adj. R-Squared:0.276 F-Test: 4.727 Prob (F-Test): 0.000 Hausman Test: 47.722 Prob (Hausman Test):0.000	R-Squared:0.503 Adj. R-Squared:0.461 F-Test: 11.899 Prob (F-Test): 0.000

*Note: The dependent variable is the growth of real per capita GDP. While (***) , (**) and (*) stands for 1,5 and 10 percent significant level. Value in parenthesis shows standard errors.*

The results obtained using the fixed effects estimator shows that institutional factors matter for achieving higher economic growth. It is observed that their political system is the main hurdle in the growth of these countries.

Control of corruption is also found to be one of the main determinants for improving economic growth. The coefficient of control of corruption is both positive as well as statistically significant at standard level. Corruption is indeed harmful for the growth of the economy as it adversely affects real stakeholders in the economy. Corruption also shatters the confidence of investors especially of foreign investors and hence FDI inflows towards the domestic economy diminishes. Corruption is therefore needed to be controlled at all costs if the OIC member countries wants to accelerate economic growth. The observed relationship between control of corruption and economic growth is also consistent with the findings of Cieřlik and Goczek (2018). They further, documented that corruption adversely affects both growth and investment through the channel of uncertainty. Bayar (2016) also demonstrated a positive relationship between control of corruption and economic growth.

The results also revealed that executive constraints have negatively impacted the economic growth of the sampled countries. In the estimated model, the coefficient of executive constraints variables is negative but however, it is insignificant statistically. The insignificant relationship between executive constraints and economic growth could be explained by the fact in the sampled countries, executive constrains are not too high. It means that countries selected for this study have moved towards a freer regime and hence only few constraints may be present for the executive. Hence, this could be one of the possible explanations for the insignificant negative relationship between executive constraints and economic growth in OIC member countries.

As far as the relationship between political constrains and economic growth is concerned, the empirical analysis revealed that political constraints are harmful for economic growth. The coefficient

of the political constraints in the estimated model is although negative but statistically insignificant. It means that although political constraints could be partly blamed for the poor and sluggish growth of these countries. The existing political systems in these countries is mostly outdated and hence significant reforms are needed to make it workable. Moreover, the huge population of developing countries is also uneducated and hence they are unaware of the worth of their vote. Further, the presence of bribes coupled with the loopholes in the political system are indeed major hurdles for the growth of these countries. Therefore, the introduction of comprehensive reforms is needed in the existing political systems for the economic growth of these countries.

The findings also showed that both rule of law and government effectiveness which are the main aspects of institutional quality have positively influenced the economic growth of the countries. Barro (1996) reported a positive relationship between rule of law and economic growth. Although statistically both rule of law and government effectiveness are not significant. It is an undeniable fact the rule of law is not prevailing especially in OIC selected countries owing to so many factors. There are various loopholes still existing in these countries due to which the wealthy and powerful segment of the society get benefits while the poor class mostly suffers. These existing loopholes could explain why the current status of the rule of law has not impacted economic growth significantly.

Government effectiveness also could not play any noticeable role in uplifting the growth process of these countries as inferred from the results. Also, governments are busy in safeguarding their own interest instead of national interest especially in these countries. In such circumstances, it is quite logical to think that the relationship between government effectiveness and economic growth may not be significant.

The control variables used in the study such as mean year of schooling and trade openness have played their expected positive role in the process of economic growth. Education is the key factor for long run economic growth as pointed out by Barro (1996) and hence the OIC member countries are suggested to invest heavily on educating their people in order to enhance the process of economic growth in the

long run. Similarly, in literature the positive role of trade openness for economic growth is discussed by various researchers such as Dollar (1992), Frankel and Romer (1999), Tahir and Azid (2015). Hence, the OIC member countries are suggested to enhance the process of trade liberalization so that accelerate their economies in terms of economic growth. History shows that countries where open trade policies are adopted such as Asian Tigers have grown faster than closed economies.

Employment level of the labor force and domestic capital have not had any significant impact on economic growth as revealed by the findings reported in Table 3. Labor force mostly in developing countries in general and in these countries in particular is unemployed owing to insufficient investment and lack of employment opportunities. Similarly, it is also a fact that population growth is quite high in these selected OIC countries as compared to the growth of capital stock and hence the gap between employment opportunities and available labor force widens. In such circumstances, the growing labor force becomes a burden instead of blessing and hence consequently economies suffer. Further, the results also uncovered that the relationship between capital stock and economic growth is positive but statistically insignificant. Capital stock is considered one of the main determinants of economic growth both in the theoretical and empirical literature. The possible reason for behind the observed insignificant relationship between capital stock and economic growth would be that the available capital stock in these countries is not enough to significantly influence economic growth.

Similarly, the earlier insignificant impact of labor force on economic growth up to some extent could be explained by the lack of capital stock in these countries. Therefore, the level of capital stock should be increased at all costs so that to enhance economic growth. To increase the capital stock in the domestic economy, policy makers are also suggested to attract and encourage FDI inflows as they complement domestic capital. Increase FDI inflows would not only solve the problem of lack of capital but would also put these countries on the right track of economic growth.

Moving to the GLS based results reported in the penultimate column of Table 3, it is observed that both political and executive

constraints have entered to the estimated regression model not only significantly but have also maintained their negative coefficients. The insignificant negative impact in fixed effects estimation and significant negative impact in GLS based estimation of executive and political constraints on economic growth is the real indication that they are detrimental for the long run economic growth. Similarly, control of corruption has not only maintained their significance level but also its coefficient signs in the GLS based estimation. Therefore, control of corruption is necessary for improved economic growth of these countries. On the other hand, the observed insignificant relationship between government effectiveness and rule of law in the fixed effects estimation did not alter in the GLS based estimation for the reasons already mentioned.

Similarly, employment level of the labor force again remained insignificant in the GLS estimation like the earlier results. Moreover, like the earlier findings, trade openness again impacted economic growth both positively and significantly. Capital stock unlike the earlier results, entered to the GLS based estimation not only negatively but also significantly. Finally, mean year of schooling has lost both its significance level as well as sign of the coefficient in the GLS based estimation.

The 2SLS based results shown in the final column of Table 3 also supported the results of fixed effects and GLS based estimation. According to results of 2SLS, both executive and political constraints remained negative as far as their impacts on economic growth are concerned. Control of corruption also maintained its statistical significance and direction of relationship with economic growth in the 2SLS estimation. The insignificant impact of government effectiveness did not change with economic growth while rule of law became significant in the 2SLS estimation. Mean years of schooling and trade openness again entered to the 2SLS based estimation both positively and significantly. Lastly, the insignificant positive relationship between capital stock, labor force also did not change in the 2SLS based estimation.

In terms of explanatory power, the estimated models are found to be explaining variation in economic growth reasonably. The value of adjusted R-Squared ranges from 0.273 to 0.461 which is reasonable

particularly in social sciences. Further, the overall fitness of the estimated models is confirmed by value of F-Test and its associated probabilities.

6.0 Conclusion

This paper has tried to explore the potential relationship between different institutional factors and economic growth. A sample of 40 selected countries belonging to the OIC organization are considered in the analysis owing to data availability. Panel data spanning from 2002 to 2018 is collected from reliable sources and used to estimate the specified models and extract results.

It is inferred from the results that institutional factors matter for the economic growth of countries. Control of corruption appeared to be important for the acceleration of economic growth of the OIC member countries. It is a fact majority of the developing countries including OIC countries are suffering from the rising corruption. Therefore, they are suggested to speed up the process of moving towards say no to corruption in order to improve their overall economic growth.

Similarly, both executive and political constraints have casted negative impact on economic growth. It implies that constraints whether political or executive need to be relaxed if the ultimate goal of the OIC member countries is higher economic growth. The prevailing rule of law shall be improved as it is directly related to economic growth. Rule of law provides significant confidence to all stakeholders and hence they are in a much better position to play their due role in improving economic growth.

Similarly, improvement in government effectiveness is also needed as it is directly related to the performance of the economy. The control variables such as trade openness and mean years of schooling have played their expected positive role in economic growth. Moreover, employment level of the labor force and capital stock have impacted economic growth of these countries positively but insignificantly. The study recommends that countries belonging to the OIC shall move towards control corruption and relax constraints related to both executive and political regime and bring improvement in government and rule of law in order to speed up the process of

economic growth. Also, the process of trade liberalization needs to be speed up and further educating the growing population shall also be the focus of policy makers in the goal is to enhance the economic growth in the long run.

6.1 Policy Implications

The policy makers of the OIC countries are suggested to consider the following points while formulating appropriate policies for enhancing economic growth:

- 1) Constraints both executive and political need to be relaxed as they are responsible for the sluggish economic growth as revealed by results.
- 2) Control of corruption shall be the top priority of the policy makers as corruption adversely affects the overall growth process by shattering the confidence of all stakeholders in the economy.
- 3) Improvement both in government performance and rule of law is also required so that to make their relationship significant with economic growth.
- 4) The policy makers are also suggested to pay attention in improving the human capital stock by investing heavily on education of the masses at large.
- 5) The process of trade liberalization shall be enhanced as it will help these countries to achieve higher economic growth.
- 6) Policy makers also suggested to increase the availability of capital stock by attracting foreign capital inflows especially from the advanced countries. Increase inflows would not only complement the domestic capital stock but would also contribute to the economic growth.

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