yönetim ve ekonomi araştırmaları dergisi
journal of management and economics research

Cilt/Volume: 23 Sayı/Issue: 1 Mart/March 2025 ss. /pp. 23-41
S. Yay, Z. Ezanoğlu, R. Akan, http://dx.doi.org/10.11611/yead.1519134

HOW DOES INSTITUTIONAL QUALITY AFFECT ECONOMIC GROWTH? PANEL DATA ANALYSIS FOR G20 COUNTRIES[1]

Assoc. Prof. Serdar YAY (Ph.D.)*

Zeynep EZANOĞLU (Ph.D.)**

Asst. Prof. Recep AKAN (Ph.D.)***

ABSTRACT

The relationship between institutional quality and economic growth has attracted considerable attention in recent years. These studies have been conducted under the umbrella of institutional economics, which has been pioneered by names, such as Douglass C. North, Nobel Prize winner in Economics. Institutional quality is defined as the effectiveness of institutions and the enforceability of rule sets. Regulatory quality is measured by indicators such as the rule of law, control of corruption, judicial independence and protection of property rights. There is an important link between institutional quality and economic growth. In the literature, institutional quality factors have a positive effect on economic growth. This study tested the relationship between institutional quality and economic growth in developing countries and concluded that institutional quality indicators positively affect economic growth.

Keywords: *Economic Growth, Institutional Quality, Panel Data Analysis.*

Jel Codes: *O10, O11, 043, 047.*

1.INTRODUCTION

Institutional economics is a school of economics that has placed rules and institutions, which have been neglected in economic analyses for a long time, at the centre of economics, Its value and importance are gradually increasing (Aktan and Yay, 2019: 50). The number of studies conducted under the umbrella of institutional economics has increased in recent years. The relationship between institutional quality and economic growth has become a major focus of attention since the mid-1990s. Undoubtedly,

[1] This study was supported by Izmir Democracy University Scientific Research Projects Coordination Unit (Project No: HIZDEP.İİBF.-2303).

* İzmir Demokrasi University, FEAS, Department of Finance, İzmir/ Türkiye, E-mail: serdar.yay@idu.edu.tr.

** Independent Researcher, İzmir/ Türkiye, E-mail: zeynepezanoğlu@gmail.com.tr.

*** Ege University, Tire Kutsan Vocational School, İzmir/ Türkiye, E-mail. recep.akan@ege.edu.tr.

Makale Geçmişi/Article History

Başvuru Tarihi / Date of Application : 19 Temmuz / July 2024
Düzeltme Tarihi / Revision Date : 12 Kasım / November 2024
Kabul Tarihi / Acceptance Date : 27 Kasım/ November 2024

Araştırma Makalesi/Research Article

Douglass C. North[2], one of the pioneers of the new institutional economics school and winner of the 1993 Nobel Prize in Economics, is one of the names that have a significant share in the fact that these studies still attract considerabla interest today.

North summarizes institutions as *"the rules of the game played in a society"* and defines them as "constraints that shape the interaction between people and are also created by people". According to North (North, 2010: 9-10), institutions *"structure everyday life, reduce uncertainty and guide human interaction"*.

According to Daron Acemoğlu and James A. Robinson, institutions are the engines of economic growth because they not only give people the freedom to work in the jobs that best suit their abilities but also create markets that provide equal and fair opportunities for them to do so. Institutions also provide a strong foundation for technology and education, which are significant variables in ensuring social welfare. Sustainable economic growth is often accompanied by technological innovations that enable people, land and fixed capital to become more productive. These technological innovations are made possible by institutions. The power of institutions to harness the potential of markets, encourage technological innovation, invest in people and mobilize the talents of many people is vital for economic growth (Acemoğlu and Robinson, 2013: 77-79). Finally, it should be added that while institutions make considerable contributions to important indicators such as economic growth, development and stability, they are also of great importance in terms of preventing informality, smuggling and corruption in the economy (Yay, 2019: 56).

Institutional quality is defined as "the positive development of activities within the sphere of influence of institutions, the effective functioning of institutions and the accuracy and applicability of rule sets". According to North, institutions contain all kinds of constraints necessary to shape people's interactions. Formal institutions created by people, such as the US Constitution and informal institutions, such as customary law, which have evolved spontaneously over time, are included in North's definition of institutions. The activities that individuals are prohibited from doing and the restrictions and permissions on what kind of activities they can engage in under what conditions are related to institutional quality (North, 2010: 10). As it can be understood from here, institutional quality is the framework of interaction between people.

Institutional quality, refers to the quality level of the institutional structure formed by the institutions and which comes together from various variables such as the level of corruption, property rights, freedom of expression, the rule of law, political stability, quality of regulations, eliminating

[2] For some of North's important works related to our subject, the following sources can be consulted: (North, 1989: 1991: 1994: 1997: 1999: 2005). In addition, the following source can be utilised in the Turkish literature on North (Aktan and Yay, 2018).

market failures, reducing transaction costs and minimizing uncertainties, undoubtedly leads to significant effects on economic growth due to many factors (Aygün and Şahbaz Kılınç, 2023: 108).

This study analyses whether institutional quality factors have an impact on the economic growth of developing countries. For this purpose, this study will econometrically investigate whether there is a relationship between institutional quality and economic growth for G20 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russian Federation, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States of America) for the period covering the period 2002-2022 through dynamic panel data analysis using the Generalised Method of Moments (GMM). The variables to be analyzed within the scope of the model are GDP per capita (current USD), inflation, gross domestic investment, openness [(import+export) /GDP] and employment. As indicators of institutional quality, the variables of voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption are used.

2. LITERATURE REVIEW

A review of the literature reveals that there are studies arguing that the relationship between institutional quality and economic growth is positive, negative or there is no relationship between them. Many authors such as Knack and Keefer (1995, 1997), Acemoğlu et al. (2001), Acemoğlu (2003), Rigobon and Rodrik (2004), Acemoğlu and Robinson (2008) and Sobhee (2012) reveal the impact of institutional quality and diversity on economic growth. However, there are also studies that argue that institutional structure does not have a direct impact on the economic performance of countries (Keskin and Yıldırım, 2021). Nevertheless, the vast majority of studies on the relationship between institutional quality and economic growth have found positive findings between institutional quality and growth. In the analysed studies, regulatory quality, the rule of law, control of corruption, independence of the judiciary and protection of property rights are generally cited as parameters of institutional quality.

Knack and Keefer (1995) argue that the elements that constitute institutional quality are the rule of law, bureaucratic quality, level of corruption, security and enforceability of contracts and the risk of expropriation of assets by the government. They also stated that the rule of law is the most important institutional factor affecting growth.

Martin (1997) associates institutional quality with property rights and rule of law. In his study, he concluded that these variables positively affect economic growth.

Knack and Keefer (1998) stated that the institutional environment is important for underdeveloped countries to close the development gap. The advantage of cheap access to advanced technology of underdeveloped economies cannot be utilised due to lack of institutional quality. Lack of

protection of contract and property rights leads to low capital accumulation and foreign investment. The study emphasised that good institutions accelerate economic growth.

Mauro (1995), in his study investigating the relationship between corruption, one of the elements of institutional quality, and economic growth, used data for 41-67 countries between 1960-1985. According to the findings, corruption has a negative impact on economic growth as it reduces investments.

Barro (1996), in his study investigating the determinants of economic growth within the framework of institutional factors, as a result of the analysis made with the data of 100 countries between 1960-1990, it is revealed that the rule of law indicator has a significant effect on growth, but the effect of other indicators is less and some indicators have a negative effect.

Alesina and Perotti (1996) argue that the uncertainty caused by socio-political instability has a negative impact on the level of investment and economic growth according to the findings of the analysis made with the data of 71 countries for the period 1960-1985.

Tanzi and Davoodi (1997) analysed the relationship between corruption and economic growth by using the data of 42-95 countries for the years 1980-1995. According to the findings of the study, it was concluded that the increase in the level of corruption has a negative impact on economic growth due to the increase in large-scale public investments with low productivity and the decrease in the quality of the existing infrastructure.

According to Hall and Jones (1998), investment rates and productivity levels are determined by institutions and government policies related to economic activities. Therefore, the primary and fundamental determinant of economic performance in the long run is social structures, namely institutions and government policies. Moreover, a study by Kneller et al. (1999) showed that regulations in institutions affect the economy.

Bussiere and Mulder (1999), in their study analysing the impact of political instability on economic vulnerability, stated that the level of political polarisation, the effectiveness of the government and its coherence with the executive power, the political regime and the electoral system and electoral processes are important institutional factors affecting the economic structure.

Campos (2000), in his study investigating institutional change in the transition from a centrally planned economy to a market economy, used the concept of institutional quality and five indicators. In the study, data covering the years 1989-1997 for 25 Central and Eastern European and former Soviet Union countries were used. The findings show that the rule of law variable is the most important institutional quality factor affecting per capita income.

Chong and Calderon (2000) investigated the relationship between institutional quality and economic growth by analysing corruption, property rights, bureaucratic quality and other institutional

factors and used 1972-1995 data for 35-110 countries. As a result of the study, it was found that the relationship between institutional variables and growth is strong. According to the results obtained in the study, increasing bureaucratic quality, decreasing corruption level, better protection of property rights and reducing uncertainty affect the level of production and consequently economic growth. It is also emphasised that the effect between institutional quality and growth is more pronounced in countries with lower income levels.

Aron (2000), in his study investigating the relationship between institutional quality, investment and economic growth variables, stated that there is a relationship between the variables, but this relationship is not significant.

Rivera-Batiz and Oliva (2002) show that in developed countries, the rule of law encourages education and supports foreign direct investment and thus affects economic growth.

Acemoğlu et al. (2003) analysed the relationship between institutional quality factors and macroeconomic conditions of countries. The reason for macroeconomic fluctuations is stated as having a weak institutional structure. Lack of protection of property rights, corruption and a high degree of political instability are shown as the salient features of a weak institutional structure.

Alesina and Wagner (2003) stated that it is very difficult to implement exchange rate regimes in countries with low institutional quality in the economic, political and social spheres. This is because weak economic institutions lead to poor economic management and economic instability. This negatively affects monetary stability and exchange rate stability. They also noted that countries with good institutional structures can leave the exchange rate to fluctuate without the need to peg or intervene and their fluctuations are usually less than expected.

Glaeser et al. (2004), in their study on the relationship between political institutional factors and economic growth, used indicators derived from indices of various institutions or individuals such as government effectiveness, autocracy, expropriation risk, legal restrictions on government, independence of the judicial system and proportional representation in governance. They concluded that there is no evidence that institutional variables have a direct impact on economic growth and that human capital is a more important source of economic growth than institutional factors.

Shimpalee and Breuer (2006), in their study analysing the impact of institutional factors on the occurrence of crises, considered 13 different institutional factors. These factors are public order, bureaucratic quality, corruption, government stability, exchange rate regime, capital controls, deposit insurance system, central bank independence, ethnic tensions, internal and external conflicts, financial liberalisation and legal system. Taking these factors into account, they analysed 40 industrialised and developing countries with data covering the period 1984-2002. As a result of the analysis, they found that government stability, legal system, bureaucratic quality and corruption are the most significant institutional factors that increase the probability of crisis. These results suggest that these factors, which

lead to the formation of a weak institutional structure, are likely to cause risk, uncertainty and misallocation of resources, and to increase the likelihood of an economic crisis.

Yapraklı (2008) analysed the effect of institutional structure on economic growth and found that the variables of political stability and rule of law, freedom of expression and transparency and quality of regulations have a negative effect on economic growth, while the variables of prevention of corruption and efficiency of governance have a positive effect on economic growth.

Acemoğlu and Robinson (2008) empirically show that the level of institutional quality is more effective than luck, geography and culture factors in explaining income differences between countries. Research results show that countries with good economic institutions have higher incomes.

Huynh and Chavez (2009) analysed the impact of institutional quality on economic growth using data for 127 countries for the period 1996-2006. As a result of the analysis, they concluded that among the six institutional quality indicators, indicators such as political stability and rule of law, freedom of expression and accountability are largely associated with economic growth. The other indicators (efficiency of governance, quality of regulations and control of corruption) have insignificant effects on economic growth.

Du (2010) investigated the relationship between institutional quality and economic crises. Corruption, bureaucratic quality, property rights and other institutional factors are analysed in this study. The results of the analysis using institutional variable data of 35 countries between 1972 and 2005 reveal the existence of a strong relationship between institutional variables and economic vulnerabilities. The results show that if bureaucratic quality improves, property rights are better protected, corruption is reduced and uncertainty is eliminated, the level of production and hence economic growth is affected. In low-income countries, the relationship between institutional quality and growth is more pronounced.

Osman et al. (2011), in their study on the relationship between institutional quality and economic performance in 27 Saharan African countries in the period 1984-2003, concluded that institutional quality variables are important in the process of economic development. It is stated that the provision of a better institutional infrastructure plays an important role in ensuring economic development and social welfare.

Kilishi et al. (2013) analysed the relationship between institutional quality and economic growth in 36 Sub-Saharan African countries for the period 1996-2010 and found that institutional quality accelerates economic growth. They revealed that regulatory quality and rule of law are the most important institutional determinants of economic growth.

Aytun and Akın (2014) analysed the relationship between institutional quality and economic growth using data from 83 countries between 2000-2010. When analysed according to different income groups, no causality relationship was found in the lower income group, while a unidirectional causality

relationship was found from institutional quality to economic growth in middle income groups. In the high income group, the causality relationship exists in both directions.

Alexiou et al. (2014) analysed the relationship between institutional quality and economic growth in the Sudanese economy for the period 1972-2008 and concluded that institutional quality is an important determinant of economic growth.

Nawaz et al. (2014), in their study investigating the effect of institutional quality on economic growth with data for selected Asian economies for the period 1996-2012, stated that institutions are the determinant of economic growth in the long run in Asian economies, but this effect varies according to the level of development of economies. It is concluded that institutional quality is more effective in developed economies than in developing economies.

Afonso and Jalles (2016) analysed the relationship between institutional quality, public sector size and economic growth for 40 countries for the period 1970-2010. According to the results of their analyses, they found that the effect of institutional quality on economic growth is positive.

Figankaplan (2017) analysed the impact of institutional quality factors on economic growth for 11 countries using data covering the period 1990-2015. The results of the analysis show that the rule of law, protection of property rights and control of corruption variables have a positive relationship with economic growth, while the quality of regulations and judicial independence have a negative relationship with economic growth.

Şahin (2018) analysed the relationship between institutional quality and economic growth for 12 MENA countries (Egypt, Jordan, Morocco, Algeria, Tunisia, Saudi Arabia, Qatar, Oman, Kuwait, Bahrain, Israel, Iraq) using data for the period 2002-2015. The results of the analysis show that there is a relationship between governance quality and economic growth in MENA countries, while there is no relationship between political freedoms and economic growth.

According to the literature review, it can be said that the rule of law is an important institutional determinant of economic growth (Knack and Keefer, 1995; Barro, 1996; Campos, 2000; Huynh and Chavez, 2009; Kilishi et al., 2013). When the relationship between corruption and economic growth is analysed, studies generally conclude that there is a negative relationship (Akçay, 2002; Mauro, 1995; Tanzi and Davoodi, 1997; Yapraklı, 2008; Anderson and Marcouiller, 2000; Faruq, 2011; Knack and Keefer, 1997). Therefore, the economic performance of countries with high levels of corruption is negatively affected. However, Huynh and Chavez (2009) conclude that although the control of corruption is an indicator of institutional quality, it is insignificant or insignificant on growth. Tornell (1997) stated that the enforceability and sustainability of property rights is one of the basic requirements for economic growth. However, Aron (2000) argues that there is no significant relationship between these variables. Glaeser et al. (2004) argue that there is no large-scale evidence that institutional variables have a direct impact on economic growth in general. There are also studies investigating the

relationship between institutional quality and economic crises (Shimpalee and Breuer, 2006; Du, 2010). According to Shimpalee and Breuer (2006), factors that lead to the formation of a weak institutional structure create a basis for economic crises.

In conclusion, many studies show that there is a significant link between institutional quality factors and economic growth. Within the framework of institutional economics, some institutional quality factors have a direct and significant impact on economic growth, while some institutional indicators have a lower level of relationship. There are also studies that detect a negative relationship. However, according to the general literature review, it is concluded that institutional quality factors generally have a positive effect on economic growth.

3. MODEL, DATA, AND METHODOLOGY

In econometric studies, panel data analysis provides the opportunity to work with a larger data set by taking into account the time and cross-sectional dimension, which increases the degree of freedom. Panel data set is defined as the combination of horizontal cross-section observations in a certain period (Yerdelen Tatoğlu 2018: 1; Tarı 2014: 475). Therefore, panel data constitute a group of horizontal cross-section units observed over time (Hill et al. 2012: 538). Increasing the number of observations and degrees of freedom in panel data sets reduces the problem of multicollinearity and increases the reliability of parameter estimates (Baltagi, 2005: 135).

In this study analysing the effects of institutional quality indicators on economic growth, variables covering the period 2002-2022 for G20 countries are used. Economic growth is the result of a combination of many factors, including policy, technology, global trade, demographics and various other factors. Therefore, assessing and forecasting economic growth is a complex process and involves a large number of variables. The variables to be used are compiled from various databases (World Development Indicators (WDI), The Worldwide Governance Indicators (WGI)).

Hypotheses to be tested;

H_0: Institutional quality has no effect on economic growth.

The sub-hypotheses to be used in addition to the main hypothesis are as follows:

H_0^A: Voice and responsibility have no effect on economic growth.

H_0^B: Political Stability, Absence of Violence and Terrorism has no effect on economic growth.

H_0^C: Government Effectiveness has no effect on economic growth.

H_0^D : Regulatory Quality has no effect on economic growth.

H_0^E: Rule of Law has no effect on economic growth.

H_0^F: Control of Corruption has no effect on economic growth.

The definitions and sources of the variables used are shown in Table 1.

Table 1. Description of Variables

Variables	Definition	Source
Gdp	Gross domestic product (per capita) (US$)	worldbank.org (WDI)
Gcf	Gross capital formation (% of GDP)	worldbank.org (WDI)
Inf	Inflation (annual %)	worldbank.org (WDI)
Ex	Exports of goods and services (% of GDP)	worldbank.org (WDI)
Emp	Employment to population ratio, 15+, total (%)	worldbank.org (WDI)
X1	Voice and Accountability	worldbank.org (WGI)
X2	Political Stability and Absence of Violence/Terrorism	worldbank.org (WGI)
X3	Government Effectiveness	worldbank.org (WGI)
X4	Regulatory Quality	worldbank.org (WGI)
X5	Rule of Law	worldbank.org (WGI)
X6	Control of Corruption	worldbank.org (WGI)

The appropriate style should be chosen for equations, theorems and proofs. A panel data model is constructed by adding the lagged values of GDP per capita to the model as the dependent variable. In the model, the effects of institutional quality indicators as well as the main macroeconomic variables will be tested. The econometric model is constructed as follows.

$$lngdp_{i,t} = \beta 0 + \beta 1.lngdp_{i,t-1} + \beta 2.gcf_{i,t} + \beta 3.inf_{i,t} + \beta 4.ex_{i,t} + \beta 5.emp_{i,t} + \beta 6.X1_{i,t} + \beta 7.X2_{i,t} + \beta 8.X3_{i,t} + \beta 9.X4_{i,t} + \beta 10.X5_{i,t} + \beta 11.X6_{i,t} + \varepsilon_i$$

In the equation, i represents country and t represents time. β denotes the coefficients to be estimated, while ε denotes the random error term. The descriptive analysis of the variables is shown in Table 2.

Table 2: Descriptive Analysis of the Variables

Variables	Obs.	Mean	Std. Dev.	Minimum	Maximum
lngdp	399	9.6173	1.1231	6.1502	11.2428
gcf	398	24.6612	6.9268	10.5839	46.6601
inf	377	4.1312	5.3700	-2.0933	72.3088
ex	398	27.1515	10.1935	9.0356	62.1115
emp	371	56.2822	7.2977	39.718	74.43
X1	399	63.0645	28.2494	2.3474	97.5124
X2	399	46.9733	23.7188	3.0150	94.2857
X3	399	69.6635	19.5795	25.9434	97.5609
X4	399	67.2955	22.7181	13.2075	99.5283
X5	399	63.8684	25.1942	12.2641	96.6824
X6	399	63.1790	25.5465	8.4656	96.6507

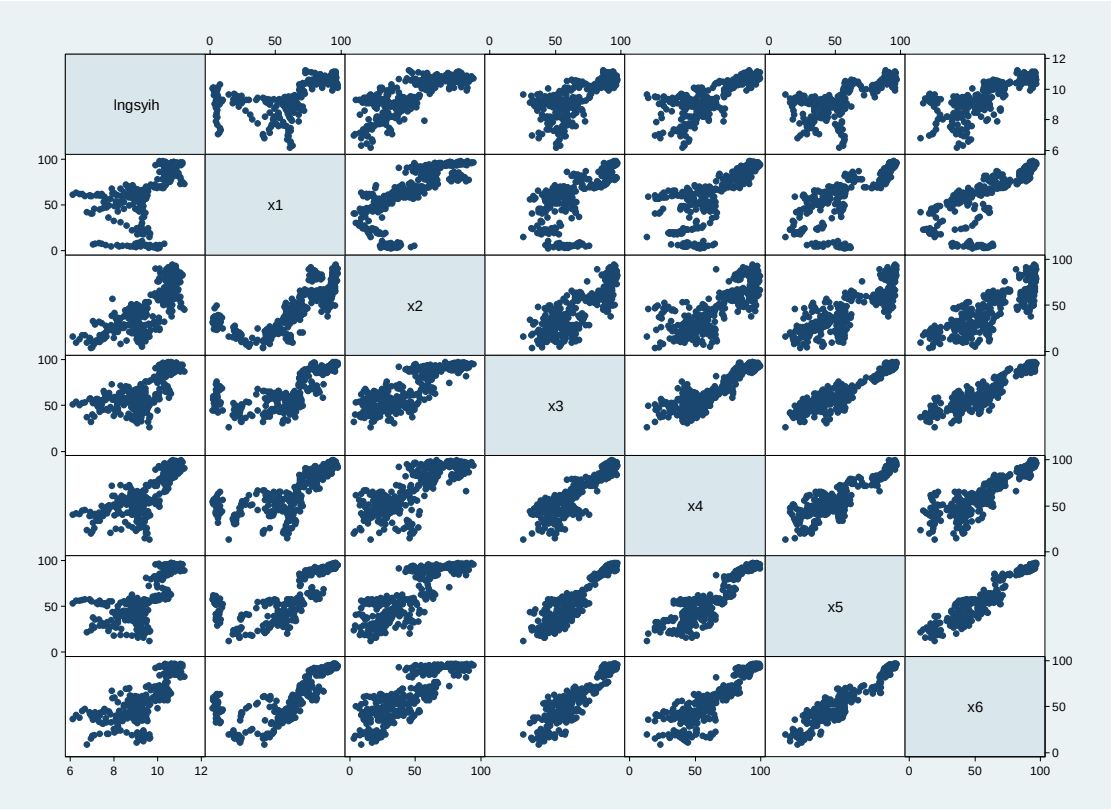
The correlations of the variables to be used in the analysis are shown in Table 3. Since the institutional quality variables will be tested in different equations, the correlations among them are not included.

Table 3. Correlation Analysis

	lngdp	***gcf***	***inf***	***ex***	***emp***
lngdp	1				
gcf	-0.323	1			
inf	-0.392	0.055	1		
ex	0.056	0.074	0.048	1	
emp	-0.001	0.418	-0.171	-0.094	1
X1	0.647	-0.502	-0.330	-0.129	-0.089
X2	0.776	-0.233	-0.461	-0.028	0.127
X3	0.796	-0.124	-0.444	-0.013	0.112
X4	0.851	-.0331	-0.398	0.009	0.017
X5	0.819	-0.218	-0.420	-0.011	0.019
X6	0.810	-0.256	-0.422	-0.046	-0.022

The relationship between the dependent variable and institutional quality indicators is presented in Chart 1.

Graph 1: Correlation Matrix Graph



The correlation matrix between GDP per capita and institutional quality variables (X1, X2, X3, X4, X5, X6) in Graph 1 supports the positive relationship. In this study, Random Effects (RE) and Fixed Effects (FE) methods were used in the preliminary analysis tests for elasticity estimates. The specification test developed by Hausman (1978) was used to choose between RE and FE. As a result of the Hausman test, the null hypothesis stating that the fixed effects model is more appropriate is rejected.

In addition, various tests are required to determine deviations from assumptions in panel data models. Deviations from the assumptions include the presence of autocorrelation, changing variance and inter-unit correlation in the model. Therefore, it is necessary to apply Wooldridge's tests for sequential dependence (Wooldridge, 2002; Drukker, 2003) and Wald's tests for changing variance (Greene, 2000: 598).

Table 4: Tests for Deviation from Assumption

Autocorrelation Test	
Wooldridge test	F(1, 17) = 154.144 Prob > F = 0.0000
Heteroscedasticity Test	
Wald Test $\boldsymbol{X2}$ ($\boldsymbol{p} > \boldsymbol{X2}$)	chi2 (18) = 591.86 Prob>chi2 = 0.0000

The tests for deviation from the assumption are presented in Table 4. The null hypothesis of the Wooldridge test states that there is no first order autocorrelation and this hypothesis is rejected. The null hypothesis of the Wald test, which is used to test for variance, states that the variance does not vary across units and this hypothesis is also rejected. As a result, the autocorrelation and variance tests identified these problems in the model. The correlation between the lagged form of the dependent variable and the error term leads to endogeneity problem (Baltagi, 2005). Due to the existence of endogeneity problem, the results obtained by the pooled least squares method (OLS) may be biased and inconsistent. For this reason, OLS results are not considered valid.

In this study, the hypotheses will be analysed with the Generalised Method of Moments (GMM) method developed by Arellano and Bond (1991). The choice of GMM estimators is important as it solves the problems of dynamic panel bias, endogeneity and fixed effects in modelling. In the GMM method, it is shown that the first difference transformation cannot fulfil all moment conditions. In addition, valid lagged variables are used as fully instrumental variables. In the first stage of this two-stage method, the first difference model is transformed, and in the second stage, the transformed model is estimated by the generalised least squares method (Yerdelen Tatoğlu, 2018). The preference for GMM estimators is important because it solves the problems of dynamic panel bias, endogeneity problem and fixed effects in modelling (Roodman, 2009).

Table 5. The Results of the Two-Step GMM Regression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	***lngdp***	***lngdp***	***lngdp***	***lngdp***	***lngdp***	***lngdp***	***lngdp***	***lngdp***
***lngdp*$_{(t-1)}$**	0.741***	0.708***	0.691***	0.700***	0.708***	0.719***	0.708***	0.718***
	(0.0160)	(0.0380)	(0.0566)	(0.0440)	(0.0360)	(0.0455)	(0.0463)	(0.0385)
gcf	0.0139***	0.0145***	0.0139***	0.00998***	0.0120***	0.0120***	0.0146***	0.0127***
	(0.00261)	(0.00412)	(0.00429)	(0.00375)	(0.00270)	(0.00335)	(0.00498)	(0.00438)
emp	0.00690***	0.00155	0.00115	0.00389	0.00649	0.00333	0.00110	0.00412
	(0.00137)	(0.00420)	(0.00532)	(0.00456)	(0.00731)	(0.00497)	(0.00454)	(0.00647)
ex		0.00845*	0.00897*	0.00646	0.00882**	0.00729	0.00828*	0.00846*
		(0.00478)	(0.00465)	(0.00477)	(0.00435)	(0.00507)	(0.00484)	(0.00493)
inf		-0.00349**	-0.00274*	-0.00163	-0.00273**	-0.00203	-0.00300**	-0.00272**
		(0.00138)	(0.00148)	(0.00148)	(0.00126)	(0.00128)	(0.00140)	(0.00129)
x1			0.00298					
			(0.00182)					
x2				0.00137*				
				(0.000782)				
x3					0.00198			
					(0.00161)			
x4						0.00355***		
						(0.000942)		
x5							0.00225**	
							(0.000990)	
x6								0.00195
								(0.00132)
Constant	1.811***	2.202***	2.196***	2.240***	1.833***	1.845***	2.085***	1.877***
	(0.225)	(0.371)	(0.638)	(0.389)	(0.434)	(0.502)	(0.450)	(0.398)

Observation	326	309	309	309	309	309	309	309
Number of cno	19	18	18	18	18	18	18	18
AR(1) (p)			**-2.5156 (0.0119)**					
Sargan test (p)			**14.6997 (1.0000)**					
Wald-chi2			**279.54 (0.0000)**					

Note: The values in parentheses indicate the standard errors of the variables. * p < 0,10, ** p < 0,05, *** p < 0,01.

The consistency of the GMM estimator depends on the realisation of the assumption of the validity of the instrumental variables and the assumption that the error terms are not autocorrelated. These two assumptions are tested with the AR tests developed by Arellano and Bond (1991) and the Sargan test. Sargan and AR test results are given in Table 5. The AR(1) test tests the null hypothesis "no first order autocorrelation" and the null hypothesis should be rejected (Roodman, 2009). The Sargan statistic used to test the validity of the instrumental variables shows that the instrumental variables are valid. The AR(1) test result of the model is expected to be negative. In the established model, AR(1) and Sargan Test results are as expected.

According to the Arellano-Bond Two-Stage GMM Estimation Results, Gross Domestic Product per capita is positively affected by its one-period lag and this result is statistically significant. Gross capital formation also has a positive and significant effect on GDP per capita. When we look at employment, its effect is positive and significant in model 1. In the following models, the effects of exports and inflation are tested. The effect of exports on GDP per capita is positive and statistically significant. Inflation, on the other hand, has a decreasing effect on GDP per capita. Then, institutional quality variables were added to the model one by one. According to the findings, the effect of institutional quality indicators on GDP per capita is positive, but only Political Stability and Absence of Violence/Terrorism (X2), Regulatory Quality (X4) and Rule of Law (X5) variables are statistically significant. These results indicate that further improvement of institutional quality can increase economic growth. It may point to opportunities to develop new policies and practices to improve institutional quality.

4. CONCLUSION

Studies examining the relationship between institutional quality and economic growth have been found in studies that conduct panel data analyses with the data of certain country groups and studies that examine this relationship with time series analyses. Artan et al. (2017) stated that the effects of institutional quality on economic growth differ according to the institutional indicator used and the country group. Since the impact of institutional quality factors on economic growth differs according to the country groups and the periods examined, no definite judgement can be made. However, studies mostly argue that there is a strong relationship between institutional quality and economic growth. Well-

managed institutions become an important driving force for economic growth. The relationship between economic growth and quality is reciprocal. Economic growth, in turn, encourages well-governed and quality institutions. A growing economy provides a favourable environment for companies to expand and create new opportunities in the country. As a result, institutional quality and economic growth are interactive factors that reinforce each other. Well-managed, quality institutions support economic growth, and strong economic growth encourages quality institutions. Therefore, government and business should endeavour to promote good governance and institutional quality, as this brings significant benefits to both the economy and society.

A good regulatory framework helps businesses to operate efficiently. Regulations that are too complex, unclear or costly may have a negative impact on economic growth. Regulations that are clear, fair and workable can enable businesses to operate more efficiently.

The rule of law states that the law is universally and impartially applied and protected in a country. A good legal system makes it easier for businesses to resolve legal disputes and protect property rights. This leads to greater confidence from investors and businesses. The rule of law includes many key features and factors that support economic growth. Therefore, a strong and effective legal system favours long-term sustainable economic growth.

Corruption can be an important obstacle that can negatively affect economic growth. It distorts competition in business, leads to misallocation of resources and can reduce business efficiency. Controlling corruption can help businesses operate more transparently and fairly. Controlling and reducing corruption does not generally have a negative impact on economic growth; on the contrary, it promotes long-term sustainable growth. The process of controlling and reducing corruption may initially involve some economic costs and challenges. In the long run, however, creating of a clean and transparent business environment fosters economic growth. It increases the confidence of investors and businesses.

In conclusion, the fact that institutional quality has a positive impact on economic growth is a positive finding and such a finding can help guide economic policy and reforms. These results suggest that the country could have a more robust economic future and emphasize the need to take the necessary steps to sustain these positive effects. All of these factors together create a more favourable environment for business and encourage investment, innovation and entrepreneurship. Therefore, improving and protecting these factors can stimulate economic growth and support sustainable development. However, each country has its own specific conditions and challenges, so the impact of these factors may differ depending on the country's specific context.

REFERENCES

Acemoğlu, D. (2003) “Root Causes: A Historical Approach To Assessing The Role of Institutions in Economic Development”, Finance and Developments, June, 27-30.

Acemoğlu, D. and Robinson, J. A. (2008) "The Role of Institutions in Growth and Development", World Bank Working Paper, No: 10.

Acemoğlu, D. and Robinson, J. A. (2013) "Ulusların Düşüşü", (Çev. F. R. Velioğlu), İstanbul: Doğan Kitap.

Acemoğlu, D., Johnson, S. and Robinson, J. A. (2001) "The Colonial Origins of Comparative Development: An Empirical Investigation", The American Economic Review, 91(5): 1369-1401.

Afonso, A., and Jalles, J. T. (2016) "Economic Performance, Government Size and Institutional Quality", Empirica, 43: 83-109.

Akçay, S. (2002) "Corruption and Economic Growth: Across-National Study". Ankara Üniversitesi Siyasal Bilgiler Fakültesi Dergisi, 57(1): 1-13.

Aktan, C. C. and Yay, S. (2018) "Nobel Ekonomi Ödülü Sahibi Douglass C. North'un İktisat Bilimine Katkıları: Yeni İktisat Tarihi ve Kurumsal İktisat", Hukuk ve İktisat Araştırmaları Dergisi, 10(2): 62-82.

Aktan, C. C. and Yay, S. (2019), "Kurallar ve Kurumlar". Ankara: Seçkin Yayıncılık.

Alesina, A. and Perotti, R. (1996) "Income Distribution, Political Stability and Investment", European Economic Review, 40(6): 1203-1228.

Alesina, A. and Wagner, A. (2003) "Choosing and Reneging on Exchange Rate Regimes", NBER Working Paper, No: 9809.

Alexiou, C., Tsaliki, P., and Osman, H. (2014) "Institutional Quality and Economic Growth: Empirical Evidence from the Sudanese Economy.", Economic Annals, 9: 119-137.

Anderson, J. E. and Marcouiller, D. (2000) "Insecurity and the Pattern of Trade: An Empirical Investigation", NBER Working Paper, No: 7000.

Arellano, M. and Bond, S. (1991) "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations", Review of Economic Studies, 58, 277-297.

Aron, J. (2000) "Growth and Institutions: A Review of the Evidence", The World Bank Research Observer, 15(1): 99-135.

Artan, S., Hayaloğlu, P., and Demirel, S. K. (2017) "Gelişmiş ve Gelişmekte Olan Ülkelerde Kamu Kesimi Büyüklüğü, Kurumsal Kalite ve Ekonomik Büyüme İlişkisi", İşletme ve İktisat Çalışmaları Dergisi, 5(3): 1-9.

Aygün, E. and Şahbaz Kılınç, N. (2023) "Kurumsal Kalite ve Ekonomik Büyüme İlişkisi: Ekonometrik Bir Uygulama", Ekonomi İşletme Siyaset ve Uluslararası İlişkiler Dergisi, 9(1): 107-125.

Aytun, C., and Akın, C. S. (2014) "Kurumsal Kalite ve Ekonomik Büyüme: Panel Nedensellik Analizi", Çukurova Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 18(1): 89-100.

Baltagi, B.H, (2005) "Econometric Analysis of Panel Data", New York: John Wiley and Sons Inc.

Barro, R. J. (1996) "Determinants of Economic Growth: A Cross-country Empirical Study", NBER Working Paper, No: 5698.

Bussiere, M. and Mulder, C. (1999) "Political Instability and Economic Vulnerability", IMF Working Paper, No: WP/99/46

Campos, N. F. (2000) "Context is Everything: Measuring Institutional Change in Transition Economies", World Bank Policy Working Paper, No: 2269.

Chong, A. and Calderon C. (2000) "Causality and Feedback between Institutional Measures and Economic Growth", Economics and Politics, 12(1): 69-81.

Drukker, D. M. (2003) "Testing for Serial Correlation in Linear Panel-data Models", The Stata Journal, 3(2): 1-10.

Du, J. (2010) "Institutional Quality and Economic Crises", The Review of Economics and Statistics, 92(1): 173–179.

Faruq, H. A. (2011) "How Institutions Affect Export Quality", Economic Systems, 35: 586-606.

Figankaplan, T. (2017) "Ekonomik Büyüme ve Kurumsal Kalite İlişkisi: Bir Panel Veri Analizi", BDDK Bankacılık ve Finansal Piyasalar Dergisi, 11(1): 65-91.

Glaeser, E. L., La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. (2004) "Do Institutions Cause Growth?", Journal of Economic Growth, 9: 271-303.

Greene, W. (2000) "Econometric Analysis", New York: Prentice-Hall.

Hall, R. and Jones, C. (1998) "Why Do Some Countries Produce So Much More Output Per Worker Than Others?", The Quarterly Journal of Economics, 114 (1): 83-116.

Hausman, J. A. (1978) "Specification Tests in Econometrics", Econometrica, 46: 1251–1271.

Hill, R.C., Griffiths, W.E. and Lim, G.C. (2011) "Principles of Econometrics", USA: John Wiley and Sons Inc.

Huynh, K., P. and Chavez, D., T. (2009) "Growth and Governance: A Nonparametric Analysis", Journal of Comparative Economics, 37 (1): 121-143.

Keskin, İ., and Yıldırım, E. (2021) "Kurumsal Kalite ve Dışa Açıklık Ekonomik Büyümeyi Nasıl Etkiler? Sermaye ve İşgücü Maliyetleri Işığında Gelişmiş Ülkeler Üzerine Panel Veri Kanıtları", Journal of Research in Economics, 5(2): 146-171.

Kilishi, A. A., Mobolaji, H. I., Yaru, M. A., and Yakubu, A. T. (2013) "Institutions and Economic Performance in Sub-Saharan Africa: A Dynamic Panel Data Analysis", Journal of African Development, 15(2): 91-119.

Knack, S. and Keefer, P. (1995) "Institutions and Economic Performance: Cross Country Tests Using Alternative Institutional Measures", Economics and Politics, 7(3): 207-227.

Knack, S. and Keefer, P. (1997) "Does Social Capital Have an Economic Pay off? A Cross-Country Investigation", The Quarterly Journal of Economics, 112(4): 1251-1288.

Knack, S. and Keefer, P. (1998) "Why Don't Poor Countries Catch Up? A Cross National Test of An Institutional Explanation", Center For Institutional Reform and The Informal Sector, 590-602.

Kneller, R., Bleaney, M. and Gemmell, N. (1999) "Fiscal Policy and Growth: Evidence from OECD Countries", Journal of Public Economics, 74: 171-190.

Martin, S. X. (1997) "I Just Ran Two Million Regressions", American Economic Review, 87(2): 178–183.

Mauro, P. (1995) "Corruption and Growth", The Quarterly Journal of Economics, 110(3), 681-712.

Nawaz, S., Iqbal, N., and Khan, M. (2014) "The Impact of Institutional Quality on Economic Growth: Panel Evidence", The Pakistan Development Review, 55(1): 15-31.

North, D. C., (1989) "Institutions and Economic Growth: An Historical Introduction", World Development, 17 (9): 1319-1332.

North, D. C. (1990) "Institutions, Institutional Change and Economic Performance", Cambridge: Cambridge University Press

North, D. C. (1991) "Institutions", Journal of Economic Perspectives, 5(1): 97- 112.

North. D. C. (1994) "Economic Performance through Time", American Economic Review, 84(3): 359-368.

North, D. C. (1995) "Douglass C. North, in: W. Breit and R. W. Spencer (ed.), "Lives of the Laureates: Thirteen Nobel Economists", Cambridge, Mass.: MIT Press. 251-267.

North D. C. (1997) "The Process of Economic Change", UNU World Institute for Development Economics Research Discussion Paper. No: 128.

North, D. C., (1999) "Institutions, Institutional Change and Economic Performance", Cambridge: Cambridge University Press.

North, D. C. (2005) "Understanding the Process of Economic Change", Princeton: Princeton University Press.

North, D. C., (2010) "Kurumlar, Kurumsal Değişim ve Ekonomik Performans", (Çev. G. Ç. Güven). İstanbul: Sabancı Üniversitesi Yayınları.

Osman, R. H., Alexiou, C., and Tsaliki, P. (2011) "The Role of Institutions in Economic Development: Evidence from 27 Sub-Saharan African Countries", International Journal of Social Economics, 39 (1/2): 142-160.

Rigobon, R. and Rodrik, D. (2004) "Rule of Law, Democracy, Openness, and Income: Estimating the Interrelationships", National Bureau Economic Research Working Paper. No: 10750.

Rivera-Batiz, L. A. and Oliva, M. A. (2002) "Political Institutions, Capital Flows, and Developing Country Growth: An Empirical Investigation", Review of Development Economics, 6: 248-262

Roodman, D. (2009) "How to do xtabond2: An Introduction to Difference and System GMM in Stata", The Stata Journal, 9(1): 86-136.

Şahin, D. (2018) "MENA Ülkelerinde Kurumsal Kalite ve Ekonomik Büyüme İlişkisinin Analizi", "İktisadi Yenilik Dergisi", 5(1): 1-9.

Shimpalee, P. and Breuer, J. (2006) "Currency Crises and Institutions", Journal of International Money and Finance", 25 (1): 125-145.

Sobhee, S. K. (2012) "Quality of Institutions and Economic Growth in Developing Economies", Social Sciences Research Network Papers.

Tanzi, V. and Davoodi, H. (1997) "Corruption, Public Investment and Growth", IMF Working Paper. No: 139.

Tarı, R. (2014) "Ekonometri", Kocaeli: Umuttepe Yayınları.

Tornell, A. (1997) "Economic Growth and Decline with Endogenous Rights", Journal of Economic Growth, 2: 219-250.

Wooldridge, J. M. (2002) "Econometric Analysis of Cross Section and Panel Data", Cambridge, Massachusetts: The MIT Press.

Yapraklı, S. (2008) "Kurumsal Yapının Ekonomik Büyümeye Etkisi: Üst Orta Gelir Düzeyindeki Ülkeler Üzerine Bir Uygulama", Ege Akademik Bakış, 8(1): 301-317.

Yay, S., (2019) "Hukuk, Kurumlar ve İktisat", İzmir: SOBİAD Hukuk ve İktisat Araştırmaları Merkezi Yayınları.

Yerdelen Tatoğlu, F. (2018) "Panel Veri Ekonometrisi: Stata Uygulamalı", İstanbul: Beta Yayıncılık.

KATKI ORANI / *CONTRIBUTION RATE*	**AÇIKLAMA / *EXPLANATION***	**KATKIDA BULUNANLAR / *CONTRIBUTORS***
Fikir veya Kavram / *Idea or Notion*	Araştırma hipotezini veya fikrini oluşturmak / *Form the research hypothesis or idea*	Assoc. Prof. Serdar YAY (Ph.D.) Zeynep EZANOĞLU (Ph.D.) Asst. Prof. Recep AKAN (Ph.D.)
Tasarım / *Design*	Yöntemi, ölçeği ve deseni tasarlamak / *Designing method, scale and pattern*	Assoc. Prof. Serdar YAY (Ph.D.) Zeynep EZANOĞLU (Ph.D.) Asst. Prof. Recep AKAN (Ph.D.)
Veri Toplama ve İşleme / *Data Collecting and Processing*	Verileri toplamak, düzenlenmek ve raporlamak / *Collecting, organizing and reporting data*	Assoc. Prof. Serdar YAY (Ph.D.) Zeynep EZANOĞLU (Ph.D.) Asst. Prof. Recep AKAN (Ph.D.)
Tartışma ve Yorum / *Discussion and Interpretation*	Bulguların değerlendirilmesinde ve sonuçlandırılmasında sorumluluk almak / *Taking responsibility in evaluating and finalizing the findings*	Assoc. Prof. Serdar YAY (Ph.D.) Zeynep EZANOĞLU (Ph.D.) Asst. Prof. Recep AKAN (Ph.D.)
Literatür Taraması / *Literature Review*	Çalışma için gerekli literatürü taramak / *Review the literature required for the study*	Assoc. Prof. Serdar YAY (Ph.D.) Zeynep EZANOĞLU (Ph.D.) Asst. Prof. Recep AKAN (Ph.D.)

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazar çıkar çatışması bildirmemiştir.

Finansal Destek: Bu çalışma İzmir Demokrasi Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi (Proje No: HIZDEP.İİBF.-2303) tarafından desteklenmiştir.

Teşekkür: -

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflict of interest to declare.

Grant Support: This study was supported by Izmir Democracy University Scientific Research Projects Coordination Unit (Project No: HIZDEP.İİBF.-2303).

Acknowledgement: -