The Effects of Democracy on Environment Quality Index in Selected OIC Countries

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Abstract

The relationship between democracy and environment has always been controversial. Some scientists found that democracy had a positive impact on reducing environmental disruption. Other scholars claimed that democracy tends to accelerate environmental degradation. Ther are many studies focusing on main determinants of environmental degradation. More recently, democracy is considered to be one of factors affecting environmental quality. This research studies the relationship between democracy and environment quality in selected Organization of Islamic Cooperation (OIC) countries by using panel data model for the period 2000-2010. The results of estimation show that democracy affects environment quality directly in these countries. Moreover, we find that economic growth and trade have positive effect on environmental quality. However, energy consumption and population have negative effect on environment in selected OIC countries.

1. Introduction

Global warming has emerged as one of the greatest challenges experienced human society. Greenhouse gas emissions (GHGs), especially carbon dioxide emissions, are considered as dominant contributors to global warming. Global warming now presents the greatest potential threat to the climate change. These increasing environmental threats have led scholars and policy makers to debate over reducing greenhouse gases emissions to alleviate the global warming. Many countries have signed the Kyoto Protocol and attempted to decrease the greenhouse gas emission to hinder global warming. This in turn calls for a clear identification of the major determinants of CO2 emissions. The main reason is propagation of greenhouse gases produced by combustion of fossil fuels. CO_2 produced by fossil fuels has the greatest share among the greenhouse gases. Environmental pollution especially air pollution, brings about many environmental, economic, and social problems.

Problem-solving with the aid of science and knowledge has been one of the most efficient methods in this regard. Market failure to overcome environmental problems since natural resources are public properties, so necessitates the government to interfere the assignment of resources. Today, public formations also help government in this regard. Many countries have formed non-governmental organizations (NGO) and developed their protective objections.

On the other hand, these organizations are more powerful in a free and democratic environment with a responsive government. There is democracy spectrum in Islamic countries, ranging from democratic to imperial ones which affects the environment and natural resources differently.

The political and democratic institutions in OIC countries are less developed. Many of the OIC countries are governed by autocratic regimes and the democratic participation of the people is rather low. This prevents the people from exercising their preference for environmental quality and may result in insufficient environmentally-orientated policies. Indeed, these countries have similar democratic and economic situation; therefore, this research has tried to study the relation between democracy and environment quality emphasizing among OIC countries selected by Panel Data method. This paper is organized as follows: The first section deals with the theoretical framework and Review of literature. The

second section is the research method and the third presents the results of the empirical analysis. The Final section provides the conclusion.

2. Theoretical and Experimental Fundamentals
2-1. Environment Pollution and Its Outcomes

Air pollution means the mixture of air with gases, drips, and particles that diminish the air quality. In other words, pollution is harmful materials in atmosphere produced naturally or by human activities (Shafipur, 2008). Vehicles, airplanes, industries, and construction are the main factors of air pollution. Environmental pollution is a main challenge in today's world, so that countries follow organizing environmental problems rather than their internal policies. Industrialization leads to utilization of fossil fuels such as coal, oil, and gas increasingly for production and transportation. Combustion of such fuels releases CO_2 in atmosphere. Thus, countries producing these materials play important roles in polluting the air. According to the material equilibrium principle, in an economic system only a part of energy is converted to goods and services, and the rest is returned to environment as the residue or pollution. Along with the development of human knowledge, human handicrafts affect the shape of waste, residue, pollution gases, etc. directly and indirectly.

Air pollution is a phenomenon of recent century. The most important air pollutants are CO, CO_2, Sox, NOx, unburned hydrocarbons, suspended particles, and NO_3. CO_2 is the most important gas which leads to climate changes and earth heating, so it is recognized as global pollutant (Fetres et al., 2010).

In the recent years, the relation between climate change and human activities has been noticed very much. We can divide such problems into two general categories. The first are the environmental problems and damages including draught, desertification, rising sea water levels, tropical storms, and disease outbreak, which may affect Iran like other countries. The Second are the economic damages mostly in countries dependent to non-renewable energy sources, international decisions and plans such as Kyoto Protocol towards decrement of consumption of fossil fuels. Kyoto Protocol is the second exhibit after Climate Change Convention of 1997, which was executed in 2005. The goal of this protocol is the decrement of greenhouse gases concentration up to 5.2% lower than the level in 1990 during 2008-2012.

The member countries are obliged to decrease greenhouse gases in their countries. After the execution of this protocol, demands for fossil fuels in advanced and obliged countries will be diminished gradually, thus the economies of the dependent countries on fossil fuels are damaged through other channels such as budget, payment balance, and generally decrement of exchange incomes. On the other hand, production costs for pollutant industries will increase in advanced and obliged countries, while these goods are produced in developing countries (Dargahi & Bahrami, 2011).

The most important environmental problem is earth warming and climate changes. Gradual increment of global temperature is mainly due to emissions. Among them, CO_2 has the greatest share with 58.8 percent. The main reason is moving toward industrialization and the utilization of fossil fuels.

According to the anticipation of the international group researching about climate changes, if this trend continues and there is no effort to decrease emission of CO_2, earth temperature will rise to 1.4 to 5.8 up to 2100, which is an unprecedented increment. This phenomenon causes swelling sea levels and severe changes in atmosphere patterns (Fetres et al., 2012).

2-2. The Determinants of Environmental Quality
2-2-1. Growth and the Kuznets Environment Curve
Recent studies based on the Environmental Kuznets Curve (EKC) hypothesis raised an important question with crucial implications for developing countries such as OIC. Improvements in economic growth and welfare can affect the types of technological and financial opportunities used to avoid and manage environmental problems. In this situation, it is interesting to know whether economic growth and environmental preservation can coincide or not.

Environmental quality is often seen as a normal good, if not a luxury one. This means that the income elasticity of demand for environmental quality is larger than zero or even than one. If the income increases, the society pays more attention to the environmental quality Beckerman (1992). In the early stage of economic development, a small portion of excess income is typically allocated for environmental problems, and thus, at this stage, the industrialization process is likely to be accompanied by environmental problems. When GDP per capita

increases and exceeds a certain threshold, the level of pollution typically decreases. This combined effect can result in an inverted U-shaped relationship between GDP per capita and the level of pollution, which was introduced by Kuznets (1955). Figure 1 depicts this relationship graphically.
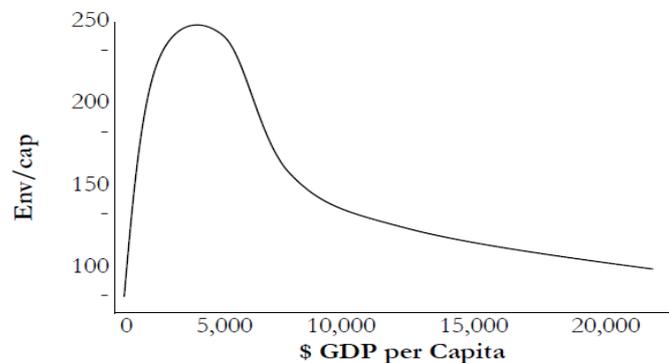

Figure 1. The Environmental Kuznets Curve

The EKC hypothesis indicates that environmental degradation initially exaggerates when a country's per capita income is low, as the economy grows, environmental degradation falls. This results in an inverted U-shaped relationship between environmental degradation and income. Indeed this inverted U-shaped relationship between GDP per capita and various indicators of pollution is referred to as the environmental Kuznets curve (EKC). This hypothesis, which suggests a U-shaped or inverted U-shaped relationship between two variables, implies a non-linear relationship that is applicable to many areas.

2-2-2. Democracy and Pollution

Scholars debate the effects of democracy on environmental degradation both theoretically and empirically. Some theorists have claimed that democracy reduces environmental degradation; others argued that democracy may not reduce environmental degradation or may even harm the environment.

Thus this section discusses the two opposing views regarding the effects of democracy on the environment and the associated empirical evidence. The debate turns on the institutional attributes of political

regimes: The role of public opinion in policy making, interest groups aggregation and representation, state autonomy, social movement mobilization, and the flow of information on environmental problems. Scholars have taken positions in the debate by emphasizing some of these regime's characteristics.

2-2-2-1. Democracy Improves Environmental Quality
According to Schultz and Crockett (1990), Scruggs (1998), Roberts and Parks (2007), Payne (1995), Olson (1993), McGuire and Olson (1996), Lake and Baum (2001), de Mesquita et al. (2003) and Deacon (2009) political rights and freedom of information promote the cause of environmental interest groups, which in turn raises public awareness and encourage the environmental legislation. This effect works through environmental groups and public opinion at large. Information on environmental issues flows more freely, and political rights are more numerous and better protected in a democracy rather than in an autocracy. Environmental groups, therefore, are often more successful for informing people and organizing them to act on environmental problems in a democracy than in an autocracy. While the elite in an autocracy are more educated than the public (as education tends to rise the income), the autocratic regime decision making is more autonomous than that of a democratic government. Environmental degradation may not be reported by the media to the people. In contrast, as democracy allows for free media, environmental problems are more likely to be reported in the news. People in a democracy, therefore, are more likely to be informed about the environment than are members of the elite in an autocracy. Better informed actors, in turn, are more likely to act on environmental problems, raising environmental quality.

A second argument is that democracies are more responsive to the environmental needs of the public than are autocracies (Kotov and Nikitina, 1995). This argument works through electoral accountability and the ability of groups to mobilize socially, achieve political representation, and influence public policy making. Democracies hold regular and free elections, which can bring to power new parties, including those friendly to the environment (e.g., The Green Party in Germany). In an autocracy, the distribution of political power is concentrated, reducing the likelihood that environmentalists will come to power. Thus, environmentalists stand a greater chance of affecting policy

making in a democracy than they do in an autocracy. Of course, this logic implies that people can also freely elect extreme anti environmental parties. Casual observation, however, suggests that such situations do not occur frequently in reality.

A third argument focuses on institutional and ideational features of democracy. According to this argument, democracies are more likely to comply with environmental agreements because they respect the rule of law. This in turn raises environmental quality (Weiss and Jacobsen 1999). Berge (1994) argues that democracies respect economic freedom and, therefore, have market economies. The market, in turn, promotes environmental quality. Gleditsch and Sverdrup (2003) suggest that as democracies respect human life more than autocracies, they are more responsive to life-threatening environmental degradation. They also reason that to the extent that democracies engage in fewer wars, they should have a higher level of environmental quality because wars destroy the environment. Sen (1994) argues that famines promote environmental degradation because they divert attention away from long-run environmental concerns. Famines tend not to occur in democracies because democratic governments are more responsive to the needs of the people. Hence, environmental degradation will be higher in autocracies than in democracies.

A fourth argument expects that the elite in an autocracy will be less pro-environment than the masses or the public at large in a democracy (Congleton, 1992). The logic of this argument relies on the environmental regulation that curtails pollution and waste. With the prevailing technologies and materials, environmental regulation lowers production and consumption, which, in turn, imposes a higher cost on the elite in an autocracy than on the masses in a democracy. This is because the ruling elite in an autocracy hold a much larger share of the national income than most people in a democracy. They are therefore relatively less pro-environment than the masses in a democracy.

A fifth argument observes that environmental degradation develops slowly. Hence, the discount rate and the time horizon of the government are important. Congleton (1992) argues that the masses in a democracy should have less at stake over regime change than the elite in an autocracy. In an autocracy, the elite are tightly linked to the leader. If the leader loses power, the elite may suffer heavy losses or even lose their lives. Facing this possibility, the elite may wish to prevent regime change

by force, and to this end, they allocate more resources to oppression. The elite may also think that the change is inevitable, becoming hedonic. Both actions raise the discount rate and reduce the time horizon of the autocratic government. As a result, the ruling elite in an autocracy will ignore environmental damage expected in the future. If they invest more today to suppress real or potential rebels, they will allocate resources away from environmental issues. If they consume more today, they will ignore environmental degradation that takes a long time to rectify or current activities that will cause damages in the future. In both cases, environmental quality will decline.

In conclusion, more democracy encourages higher environmental quality. Concept Map 1 summarizes these relationships.
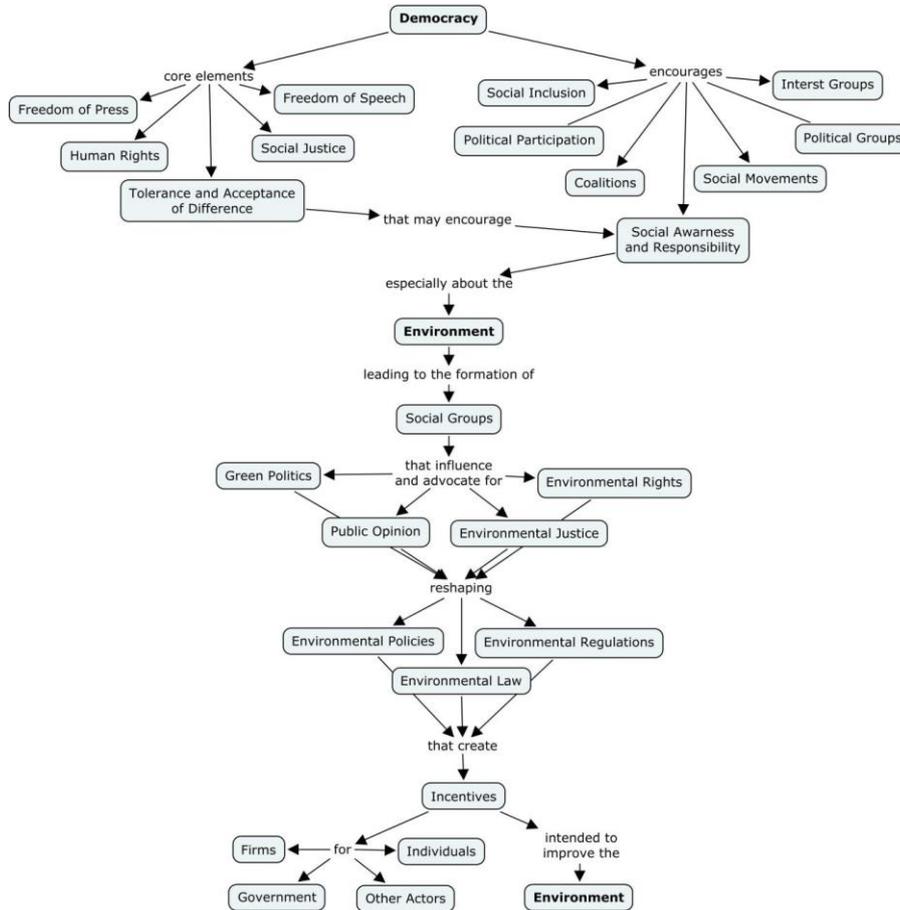
Concept Map 1. Democracy and the Environment: A Comprehensive Approach (Callejas, 2010)

2-2-2-2. Democracy May Worsen Environmental Degradation

The view that democracy may not reduce the environmental degradation or may even increase it relies on several mechanisms.

First, Hardin (1968) warns about the impending hazards of unchecked natural resource exploitation and environmental mismanagement by self-interested individuals and groups. When private property rights of natural resources are not well-defined, as is often the case with ''the commons'' (e.g., clean air, oceans, forests), free individuals or interest groups tend to

over exploit such resources and ignore the damage that their economic actions inflict on the environment. Gleditsch and Sverdrup (2003) note that Hardin's, Tragedy of the Commons, does not encourage confidence in the effect of economic and political freedom on environmental quality.

Second, Paehlke (1996) argues that the great danger for both democracy and the environment is that, while economy and environment are now global in character, democracy functions on only national and local decision levels. Thus, global environmental problems may not necessarily be attended to in a timely manner. Heilbronner (1974) argues that global population growth threatens global environmental quality. Being autonomous decision makers, autocracies can curtail human reproduction, but democracies are held accountable by the public and therefore respect citizen rights, including those involving human procreation.

Third, Dryzek (1987) notes that democracies tend to be market economies where business interest groups have considerable clouts. His argument highlights the asymmetric influence of profit-oriented corporate interests in capitalist democracies. Dryzek (1987) lists countries in which democracy is systematically skewed in favor of corporate interests, while environmental groups have a hard time getting a foot in the door. Corporate interests, in turn, seek to maximize profit, not necessarily to better environmental quality. Thus, democratic leaders accountable to business interests that support their coming to power may not necessarily Value environmental quality. Polyarchy, Dryzek (ibid.) argues will normally yield to the imperatives of the market, if not always to the interests of large corporations. At their corporatist worst, polyarchies degenerate into caricatures of the ideal, with some dire consequences for ecological rationality (Dryzek, 1987).

Fourth, Midlarsky (1998) argues that democracies often experience public policy inaction where environmental degradation is concerned. Democratic leaders have the tendency to please competing interest groups in the public in order to win as many votes as possible. Corporations and environmental groups can fight each other to a standstill, leaving a decision making vacuum instead of a direct impact of democracy on the environment. As a result of budget constraints, democracies may not be responsive to environmental imperatives but to more pressing issues of the economic subsistence of major portions of the voting public (Midlarsky, 1998). In addition, democracy may be reluctant

to alleviate environmental degradation because some groups are expected to benefit (or lose) from environmental policies more than others (Midlarsky, 1998).

3. Literature Review

Carlsson and Lundstrom (2001) in a research titled "political and economic freedoms and environment (Case study: emission of CO_2)" examined the effects of political and economic freedoms on CO_2 emission in 75 countries by DPP for 1975-1991. Their results showed that political and economic freedoms decreased CO_2 emission.

Li and Rioni (2006) in a research titled "democracy and environment destruction" examined the effect of democracy on environment destruction in 143 countries by DPP for 1961-1997. They studied the effect of democracy on five environment indices such as CO_2, NO_2, deforesting, earth destruction, and water pollution. Their findings showed that Democracy had a negative effect on these variables. In fact, democracy led to the decrement of environment destruction.

Bernauer and Koubi (2009), in a research titled "the effects of political organizations on air quality" examined the effect political organizations on air quality in 107 cities of 42 countries by DPP for 1971-1996. Their results showed that democracy had a direct effect on the air quality. Also, government minimization had more effects on improvement of air quality.

Callejas (2010examined the relation between democracy and CO_2 emission in 19 Latin American countries by DPP for 1995-2008. Their results showed that the increment of democracy level led to the decrement of CO_2 emission. In fact, democracy improved environment quality in these countries.

Pejuyan and Lashkarizadeh (2010), in a research titledexamined the effective factors on the environment in some selected countries with different development levels for 1995-2005 by DPP method. The results showed that economic growth led to pollution increment. Also, technology enhancement led to pollution decrement. Variables of political effect also showed decrement of pollutants such as CO_2.

Maddah and Abdollahi (2012), examined the effect of quality of organizations on environment quality for 1996-2007. Their findings showed that Kuznets hypothesis was not valid for these countries and pollution tension towards organization quality was negative and was

equal to 0.24. In addition, energy consumption, trade, and human development level had positive and significant relationships with pollution.

Farzanegan and Markwardt (2012), examined the relation between economic development and democracy with environment in MONA countries by DPP for 1980-2005. Their results showed that improvement of democracy conditions in these countries improved the environment. Also, more free organizations had most effects on the improvement of environment conditions in comparison with global conditions.

You et al. (2015), in a research titled "democracy, financial opening level, and global CO2 emission: Heterogeneity of emission" examined the relation between democracy and financial opening degree with CO2 emission in four groups of countries by DPP for 1985-2005. The results showed that democracy had a heterogeneous effect on CO2 emission. In the group with higher CO2 emission, democracy related with lower CO2 emission. But financial opening level did not affect the CO2 emission.

4. Empirical Formulation and Analysis
4-1. Stipulated Model
The model was stipulated according to the study of Callejas (2010) which focused on the effect of democracy on environment quality in the selected countries of Islamic Conference including: Albany, Azerbaijan, Bangladesh, Cameron, Brondy, Algeria, Egypt, Indonesia, Iran, Jordan, Kazakhstan, Lebanon, Malaysia, Nigeria, Pakistan, Senegal, Syria, Togo, Turkmenistan, Tunis, Turkey, Yemen, Kirgizstan, Tajikistan, Uzbekistan, Ecuador, Gabon, Kuwait, Oman, Qatar, and Saudi Arabia for 2000-2010periods:

$$LEPI_{it} = \alpha_1 + \alpha_2 LDEMO_{it} + \alpha_3 LGDP_{it} + \alpha_4 LPOP_{it} + \alpha_5 LTR_{it} + \alpha_6 LENU_{it} + \varepsilon_{it}$$

$LEPI_{it}$: Logarithm of environment quality index in country i at year t. This index is measured by 22 sub-indices in 10 environmental areas including climate change, which has four items of CO_2 per capita, CO2 per GDP, CO2 Emission per Electricity Generation, and Renewable Electricity. This index ranges between zero (worst case) and 100 (best case).

LDEMO$_{it}$: Is a Logarithm of Freedom House/Polity index for democracy for a given country in a given year. This index includes two sub-indices of civil freedom and political rights, which were published by Freedom House Institution for countries since 1972 up to now. In this research, the average of these two indices was used as democracy index, with range of 1-7, which 1 is the freest and 7 is the most non-free countries. According to this index, countries were divided into 3 groups. The index domain of free countries is 1-2.5, for relative countries is 2.5-5.5, and for non-free countries is 5.5-7. In this research, democracy index is reversed because it is between 1-7, which 1 is the best and 7 is the worst conditions of democratic situation. This reversion helps the analysis of relation between democracy and environment quality. This variable has been discussed in the studies of Farzanegan and Markwardt (2012), You et al. (2015), Callejas (2010), and others.

LGDP$_{it}$: Logarithm of real GDP in country i at year t. GDP is sum of money of all produced goods and services during a year whose effect is often considered by emphasizing Kuznets Curve in Empirical researches.

LPOP$_{it}$: Is a logarithm of measure for population size for a certain country in a given year.

LTR$_{it}$: Logarithm of trade in country i at year t. This is the ratio of total imports and exports to GDP. This was used in many studies including Khalil and Inam (2006) and Fetres et al. (2012).

LENU$_{it}$: Logarithm of energy consumption in country i at year t, which is oil equivalent energy per capita of each person in a country. It was used in studies of Ciao et al. (2010), Hamit Hagar (2010), and Feters et al. (2012).

ε_{it}: Is an error term for each unit of analysis. The data for GDP, population and trade, and democracy variable are taken from the report of Freedom House and YCELP[1] (2012).

4-2. Stationary of Variables

Before estimation, stationary of time series data is examined, because non-stationary data in econometric estimations produces invalid regression and results. Stationary of variables are examined by Levin-Lin (Table 1) and Im, Pesaran and Shin unit root test (Table 2).

Table 1: Results of Unit Root Test by LLC Test

Variable	Name	Test conditions	t-Statistic	Probability
Logarithm of environment quality index	LEPI	With intercept and Trend	-8.72	0.0000
Logarithm of democracy index	LDEMO	With intercept	-12.17	0.0000
Logarithm of real GDP	LGDP	With intercept and Trend	-5.06	0.0000
Logarithm of population	LPOP	With intercept and Trend	-13.99	0.0000
Logarithm of trade	LTR	With intercept and Trend	-5.87	0.0000
Logarithm of energy per capita	LENU	With intercept and Trend	-5.39	0.0000

Regarding to Table 1, we see that p-value for statistic in Levin, Lin, and Chu Test is less than 0.01 for all variables. Thus, stationary of variables is accepted. In other words, all variables are stationary in level.

Table 2: Results of Unit Root Test by IPS Test

Variable	Name	Test conditions	t-Statistic	Probability
Logarithm of environment quality index	LEPI	With intercept and Trend	-2.79	0.0000
Logarithm of democracy index	LDEMO	With intercept	-4.08	0.0000
Logarithm of real GDP	LGDP	With intercept and Trend	0.14	0.5560
d(Logarithm of real GDP)	d(LGDP)	With intercept and Trend	-3.01	0.0013
Logarithm of population	LPOP	With intercept	-5.49	0.0000
Logarithm of trade	LTR	With intercept and Trend	-1.98	0.0233
Logarithm of energy per capita	LENU	With intercept and Trend	-0.004	0.4982
d(Logarithm of energy per capita)	d(LENU)	With intercept and Trend	-4.90	0.0000

Regarding to Table 2, we see that p-value for statistic in IPS Test is less than 0.01 for LEPI, LDEMO, LPOP variables and p-value of LTR is less than 0.05. Thus, these series are stationary. But LGDP and LENU are not stationary in level of series but stationary of these series are proved in 1st difference.

4-3. Panel or Mixed Model Identification Tests

Before estimation, the type of DPP estimation must be determined. Therefore, firstly F Test is used to determine single or multiple intercepts for each country (Table 2). According to Table 2, F statistic is 674 with probability of 0.0000; thus each section must have a separate intercept. In other words, the model is as panel data.

Hausman test is to employ to compare the fixed and random effects estimates of coefficients (Table 3). According to Table 3, Hausman test p-value is 0.0003, which indicates that the model must be estimated by fixed effects.

Table 3: F and Hausman Tests

Test	Statistic	Probability
F	674	0.0000
Hausman	23	0.0003

In panel data, when the number of sections is more than the number of periods, there may be Heteroscedasticity variance of components (Table 4). According to Table 4, Chi-square probability is near zero and the model is estimated by Generalized Least Square (GLS) method.

Table 4: Results of Heteroscedasticity Test

Test	Statistic	Probability
LR	510	0.0000

4-4. Cointegration Test

According to the results of IPS unit root test in Table 2, as well as LGDP and LENU are I (1). Therefore we analyzed the cointegration with the Kao panel co-integration test. The result of this test is shown in Table 5.

Table 5: Results of KAO Test

Test	t-Statistic	Probability
KAO	-6.03	0.0000

According to the result of KAO test in Table 5 we concluded the existence of cointegration relationship between variables of estimated models. Therefore we could rely to the results of estimation.

4-5. Autocorrelation Test

The autocorrelation between residuals of estimated model is done by Wooldridge autocorrelation test in panel data models. The null hypothesis of this test is no first order autocorrelation. The obtained results of Wooldridge autocorrelation test in panel data models are shown in Table 6.

Table 6: Results of Wooldridge Autocorrelation Test

Test	F-Statistic	Probability
Autocorrelation test	42.73	0.0000

The results of autocorrelation test (Table 6) showed that the probability of F-stat is less than .01 therefore null hypothesis of this test is rejected and existence of autocorrelation is proven.

4-6. Results of stipulated model estimation

The results of stipulated model estimation by panel data method with fixed effects are shown in Table 7. Also, Heteroscedasticity test results are shown in Table 4.

Table 7: Results of Estimated Model in Selected Countries
(Dependent Variable: Environmental Quality Index)

Variable	Name	Coefficient	t statistic	Probability
Intercept	C	3.740	29.5	0.000
Logarithm of democracy	LDEMO	0.761	5.29	0.000
Logarithm of real GDP	LGDP	0.031	3.67	0.000
Logarithm of trade	LTR	0.008	0.91	0.362
Logarithm of energy per capita	LENU	-0.019	-2.14	0.032

Variable	Name	Coefficient	t statistic	Probability
Logarithm of population	LPOP	-0.029	-3.51	0.000
R^2	0.99	F statistic	4462	
Adjusted R^2	0.99	F probability	0.0000	
Durbin-Watson statistic			1.75	

The results can be described as follows:

Democracy logarithm with value of 0.761 has a direct and significant effect on environment quality index. In other words, environment quality will be improved 0.761 by 1% increase of democracy index. In fact, improvement of democracy in the selected countries increases the environment quality. It can be said that countries with democratic systems are more successful in environment protection, and emission will decrease by the increment of environment quality.

Logarithm of GDP with coefficient of 0.031 has a direct and significant effect on environment quality in the selected countries. In other words, environment quality will be improved 0.031 by 1% increase of GDP index. In fact, economic growth in the selected countries increases the environment quality.

Logarithm of trade with coefficient of 0.008 has a direct effect on environment quality in the selected countries but its effects insignificant. In other words, environment quality will be improved 0.008 by 1% increase of trade. In fact, international trade in the selected countries decreases the environment destruction.

Logarithm of energy per capita with coefficient of -0.019 has a negative and significant effect on environment quality in the selected countries. In other words, environment quality will be decreased 0.018 by 1% increase of energy per capita. In fact, more energy consumption in the selected countries increases environment destruction and pollution.

Logarithm of population with coefficient of -0.029 has a negative and significant effect on environment quality in the selected countries. In other words, environment quality will be decreased 0.029 by 1% increase of population. In fact, population increase in the selected countries increases the environment destruction and pollution.

5. Discussion and Conclusion

Controlling pollution and environment quality improvement is one of the important indices of stable development in today's world. Therefore, study of the effects of effective factors on environment is necessary. This research studied the effects of some factors such as democracy, economic growth, trade, energy consumption, and population on environment quality in the selected Organization of Islamic Cooperation countries (OIC) by panel data for 2000-2010. The results indicated the direct effects of democracy, economic growth, and trade on environment quality, and negative effects of energy consumption and population on environment quality. For the direct effect of democracy on environment quality it can be said that information freedom, knowledge of environment-friend groups, and political rights are more in a democratic system, which increases reactions against environment destruction. On the other hand, democracy improves redaction and execution of environment-protective rules. In such a system, government is more responsive to people for environmental problems.

Economic growth concludes optimum usage of scarce natural resources, which produces less waste and pollution and improves environment standards. By income increase, demand for environment-friendly goods is increased. For the direct effect of trade on environment quality, it can be said that the effect of trade freedom on environment can be divided into three scale, combination, and technology effects. The scale effect indicates changes in the size of economic activities; the combination effect indicates changes in produced portfolio; and the technology effect indicates changes in improved technology toward clean technology. Following trade freedom, the scale effect increased environment destruction and the technology effect decreases environment destruction. The impact of combination effect also depends on the relative advantage type. If combination of produced goods of a country moves toward clean goods due to its relative advantage in clean goods, the combination effect affect environment positively.

In addition, energy consumption and population increase environment destruction in the selected countries. It can be described as emission of greenhouse gases has a direct relation with energy consumption, especially fossil fuels. Also, population increment increases demand for goods and services. Therefore, more mines will be extracted to respond

the progressive needs of population. On the other hand, more waste and pollution is produced, which finally leads to environment destruction.

Therefore, countries of Islamic Conference can protect their environment by improvement of democracy in their stable development paths and can prevent environment destruction in their development paths.

Endnote
1. Yale Center for Environmental Law and Policy (YCELP)

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