

## The Effect of FDI and Corruption on Human Development in OIC Countries

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**Abstract.** *This study aims to see the direct and indirect effect of FDI and corruption to Human Development in OIC Countries. Nine countries are selected representing the medium to very high human development category in OIC Countries (Egypt, Indonesia, Jordan, Malaysia, Morocco, Kazakhstan, Kyrgyzstan, Turkey, and Tunisia). Using a combination of path diagram and panel data analysis, the result of this research indicates corruption has both direct and indirect effect through economic growth to human development in OIC countries, while economic growth and FDI restrictiveness have a direct effect.*

**Keywords:** *Foreign Direct Investment, Corruption, Human Development, OIC*

**Abstrak.** *Penelitian ini bertujuan untuk melihat pengaruh langsung dan tidak langsung dari investasi langsung luar negeri (FDI) dan korupsi terhadap pembangunan manusia di negara-negara OKI. Dalam hal ini, 9 negara dipilih yang merepresentasikan kategori tingkat pembangunan manusia menengah dan tinggi di antara negara-negara OKI (Mesir, Indonesia, Yordania, Malaysia, Maroko, Kazakhstan, Kirgistan, Turki, dan Tunisia). Dengan menggunakan kombinasi diagram jalur dan analisis data panel, hasil penelitian menunjukkan bahwa korupsi berpengaruh terhadap tingkat pembangunan manusia di negara-negara OKI baik secara langsung maupun tidak langsung melalui pertumbuhan ekonomi. Sementara itu, pertumbuhan ekonomi dan pembatasan FDI memiliki pengaruh langsung.*

**Keywords:** *Investasi Langsung Luar Negeri, Korupsi, Pembangunan Manusia, OKI*

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## Introduction

The questions arise due to the assumption that the economic growth will be followed by human development. The UNDP has launched the proximate and more appropriate way to see the development of social and economic, as known as the Human Development Index. However the question still remains, whether some of the determinants of economic growth, namely foreign direct investment (FDI) by transnational corporations also significantly influence the human development. One of the core tools to transfer resources from developed and developing country are transnational corporation which also make FDI as its main vehicle. Eventhough the original literature on productivity spillovers still have some biased on it, it is believed that the increasing of FDI has an impact of improvement in the economic and productivity of the host economy. (Mortimore, 2004)(Fine & Gray, 1999; Mortimore, 2004; Sharma & Gani, 2004)

Foreign direct investment has a potential to make a real contribution to economic growth through escalating the human development by increasing the quality and productivity of human resources, supporting the technology and transferring the technology-plan. Having impacts to the community in terms of social and economic aspects, foreign direct investment plays a role in one's development. The social aspects include reducing poverty and increasing welfare especially for developing countries. Foreign direct investment also has an impact in developing skills and improving technical progress. Moreover, in economic aspects it can also achieve economic goals in creating jobs (Assadzadeh & Pourqoly, 2013; Kustituantto & Istikomah, 1999).

Though some empirical studies found out the positive impacts of FDI, it cannot be denied that FDI might also be 'harmful'. It could expose domestic firms to greater competition. There are possibilities of miss in important analytical point that caused domestic firms to force out of the industry (Moran, Graham, & Blomström, 2005)

Though the effect of FDI is still ambiguous, the FDI policy have an important role in determining the impacts of FDI to the development. There is a significant role of FDI policy in term of extracting the benefit. It has to be balance between attracting FDI with FDI policy and maintaining extraction of capital inflow in any form. Therefore, the conceptual benefit of FDI are in some way attached with FDI policy regime (Reiter & Steensma, 2010; Sumner, 2005).

Along with the FDI, this study will also discuss the impact of corruption to the human development. Several studies connecting the relation between corruption to FDI and Human development (Akçay, 2006; Al-Sadig, 2009; Reiter & Steensma, 2010). According to Akçay (2006), As a symptom of deep institutional weakness, corruption leads to more than an ineffective economy but also social and political outcomes. Corruption can obstruct the human development, less corruption will also increase the human development.

Meanwhile, Habib & Zurawicki (2002) found a relation between corruption and FDI. They said, *"Understanding the pernicious role of corruption to FDI is important since it heightens uncertainty and raises costs. Moreover, it creates distortion to both company and the host country."* Corruption affects the flow of FDI in one's country. FDI has a tendency to decline due to the corruption. High level corruption is mostly associated with unfavorable institution and government. Thereby, the studies find a negative long-run impact of corruption has an impact to FDI (Egger & Winner, 2005). It will affect the investors perception to the business, which disturbing the inflow and the utilization of FDI. (Akçay, 2006; Al-Sadig, 2009; Habib & Zurawicki, 2002)

Corruption and foreign direct investment (FDI) are jointly linked as the foreign investors may consider corruption morally wrong and stay away from the country. Moreover, it makes the economic turn to a difficult to manage, risky, and costly . As the form of misappropriation of public funds, corruption taken part in decreasing of health and longevity of individual by reducing amount of public goods and services. Furthermore, corruption has a two-way negative causal with development (Blackburn & Sarmah, 2008; Habib & Zurawicki, 2002)

The frustrating effects of corruption has made corruption to be the center-stage of development (Pradhan, 2012). While the World Bank claims corruption as “the single greatest obstacle to economic and development.” However, the theoretical and empirical work is still needed.

OIC countries face 'development dilemma', this includes the scarcity of non-equity foreign financing, the debt burden, and some internal factors. With this happening, OIC countries see FDI as a 'whole-package' solution. This is because the use of FDI can solve capital, technology, managerial capabilities and market access problems. Although some literature doubts the efficacy of FDI in solving problems in least developed countries. This does not reduce the attractiveness of FDI as a development solution in OIC countries.. (Zeinelabdin, 1998).

This study uses 9 OIC countries (Malaysia, Indonesia, Egypt, Jordan, Kazakhstan, Kyrgyzstan, Turkey, Tunisia, Morocco) which represent OIC in the range of human development category medium to very high human development. Medium to very high human development category is considered appropriate to use FDI as an instrument of development. A set of least developed countries is considered more appropriate to use Official Development Assistance (ODA) to improve development (Kosack & Tobin, 2006; Unceta, Gutierrez, & Amiano, 2010; Zeinelabdin, 1998).

Realizing FDI as an important tool for enhancing growth and development, as other developing countries, the OIC members are also seek to enhance the inflow of FDI. However, the tradeoff caused by FDI to OIC countries are still not valid (Dabour, 2000).

Various attempts were made to attract FDI. According to the OECD, some OIC countries are increasingly open to the use of FDI as a development-tool kit, even though the FDI restrictiveness index (an index that measures the level of openness and ease of countries in welcoming FDI) OIC countries are still below 50%. The differences between policy and restrictiveness in each country also may affecting the FDI inflow to the country and its impact to the

development of one's country. (Dabour, 2000; Majeed & Ahmad, 2010; Reiter & Steensma, 2010).

In addition, corruption also has a major impact to the human development (Al-Sadig, 2009) including in the OIC countries. The level of corruption in the OIC countries is quite high. According to Transparency International, 9 OIC countries (Jordan, Tunisia, Egypt, Morocco, Indonesia, Turkey, Kazakhstan, and Malaysia) are getting better year by year. The highest achiever in CPI, means lower corruption in one's country, is Malaysia. However, OIC country achievement in the corruption perception index is still low with an average achievement below 50%. Whereas 5 countries with the highest CPI levels, namely New Zealand, Finland, Switzerland and Singapore, have an average value of over 85%. This proves that the level of corruption in OIC countries is getting better but still needs to be greatly improved.

Several studies have discussed the relation between FDI, corruption and human development (Dabour, 2000; Ortega et al., 2014; Reiter & Steensma, 2010; Sharma & Gani, 2004). For instance, Reiter & Steensma (2010) studied those relationship in the developing countries. However, there is no any research discusses specifically the impact of FDI and corruption to the human development in OIC countries. Dabour (2000) only discussed the role of FDI to the economic growth of OIC. In addition, previous research only sought the direct effect relationship provided by FDI and Corruption to human development. However, it is needed to determine the actual effect of FDI and corruption on human development, whether it is direct effect or indirect effect. In this study, the intermediate variable is economic growth (Ghosh, 2006; Ranis et al., 2000; Sen, 1999; Suri et al., 2011)

This paper attempts to empirically examine the impact of FDI and corruption on human development in OIC countries. In addition, the effect of Economic growth on human development will also be tested as the basis to find the indirect impact of FDI and corruption on human development.

## Literature Review

### Human Development

At the beginning, several studies focused on the quantitative achievement of economic growth, financial institutions, and any other quantitative economic performance. However, to attain economic development (or moreover, human development) the increase of national income needs to be accompanied by the improvement in the improvement in quality of life in various aspects (Wibowo, 2019)

Since 1970 economic development begun to redefine. The new outlook of economic development is no longer only about creates a high growth of Gross National Product (GNP), rather is an effort to eliminate or reduce poverty level, income inequality and providing employment to sustain the economy development. In line with these objective, the main purpose of economic development is to achieve the human development. (Hanafi, 2018; Todaro, 2004)

The definition of human development is wider than some definition of well-being that related to material or aspects that publicly provided. It covers the fullest sense in the matters of public and private, economic, social, and spiritual. Human development means to reduce poverty and enhance well-being (Alkire, 2002)

Fukuda-Parr (2003) said, "*Human development is a process of enlarging people's choices*". It covers a long and healthy life, education, access to resources and a decent standard of living.

While Sen (2000), emphasized human development in a boarder scope, human development meant to integrate a variety context of human life as a people, their well-being and their freedom. Human development means to achieve value capabilities; health, nutrition, and resource development ("human capital development". Development is about removing obstacle to enhance human loves by expanding range of possibility for a person. The adding 'sustainable' prefix, before human development making the definition

is getting wider, human development is more than enabling people to lead long, healthy educated live but also make sure the future generation can doing so (Neumayer, 2012).

UNDP started to recognize that human development isn't based from accumulating income and generating wealth, it is far more than that. The measurements of human development began to emerge, one of the most widely use is Human Development Index (HDI) by UNDP. According to UNDP, "The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: along and healthy life, being knowledgeable, and have a decent standard of living".

According to Faqihudin (2010), As a composite index, HDI includes three fields of human development, a basic needs of human being: health sector (life expectancy), knowledge (education), economic (decent living using GNI per capita as its proxy):

a) Life expectancy at birth

Human development is valued as an effort to enlarge choices, it must first strive to make sure the human development can reach a long and healthy life. Actually, there are many indicators that can be used to measure life span, but with consideration of global availability of data, life expectancy indicator birth is selected. Number infant mortality (IMR) is not used for this purpose because of that indicator is considered insensitive for industrialized countries that have developed.

b) Knowledge

Considering the importance of knowledge as the fundamental element of human development. Human Development Index are using literacy rates and average length of school. The indicator of literacy rates can be obtained from the ability of a person to read and write. While the calculation of average length of school is done in stages. At The beginning is calculated by the length of school for each individual using the pattern of relationships between these variables. At the stage next the aggregate length of school average is calculated.

c) A decent standard of living

Considering the availability of data, UNDP using Adjusted Real GDP per capita as its indicator. Unlike the indicators for the other two HDI elements, indicators decent living standards are recognized as input indicators, not impact indicators, so it is actually not suitable as an element of HDI. Even though UNDP is still maintaining it because other suitable indicators are not globally available.

HDI is one way to measure the quality of life of the population. Quality of life is reflected in the education, health and economic capabilities of the community as seen from the level of income. The higher the level of community education will make it easier to get better jobs and earn income so that people easily access health. Low public health causes low productivity, low productivity results in low community income. Low income causes people to not be able to access education and health due to limited costs, this causes the level of community welfare will decrease. One of the advantages of the Human Development Index (HDI) or the Human Development Index (HDI), reveals that a country/region can do much better at a low income level. (Sasana, 2009)

However, the human development has often been misinterpreted as only constructed by three factors in HDI, narrowly: literacy and schooling, life expectancy and adjusted income. This may cause human development has little to offer. Other factors may apply in influencing the concept of human development. Therefore, other indicators may have a direct or indirect effect in leading economic development and social welfare (Azam, 2016; Fukuda-Parr, 2003).

The concept of human development has also been taught in Islam. The achievement of human welfare in Islam also covers economic welfare. However, in Islamic human welfare seen from two sides, namely worldly life and eternal after life. Prosperity in Islam also recognizes the existence of "the specific positive utility of the individual driving factors ". In this case, Islam does not deny individuals to fulfill certain desires such as marriage, career, clothing, food, etc. Islam regulates identifying options; benefits and risks that



can provide temporary satisfaction and cause long term harm to "spiritual matters and ethical existence" also on overall human welfare. (Shaikh, 2000)

In Islam, the term *tazkiyyah* is closely related to human development. There is a broad understanding in this matter. However, it can be said that human development in Islam leads to "growth and purification" of the relationship between humans and Allah. In Islam, humans and Allah are the center of development. So, Islam does not separate between worldly aspects and spiritual aspects. The welfare of human development can be achieved by maintaining human dignity through establishing social justice. (Relief, 2014)

### **Impact of FDI on Human Development**

In both individual and national needs, Islam teaches the existence of "doctrine of collective duties" (*Fard kifayah*), the need to fulfill and protect the needs of every Muslim and Ummah. So, the external economic relation needs to be carried out to meet this need. The purpose of the need for external economics is to remove any obstacle to obtaining these rights. In transactions, Islamic countries need to carry out transactions according to sharia and avoid things that are detrimental to the ummah. (Siddiqi, 1992)

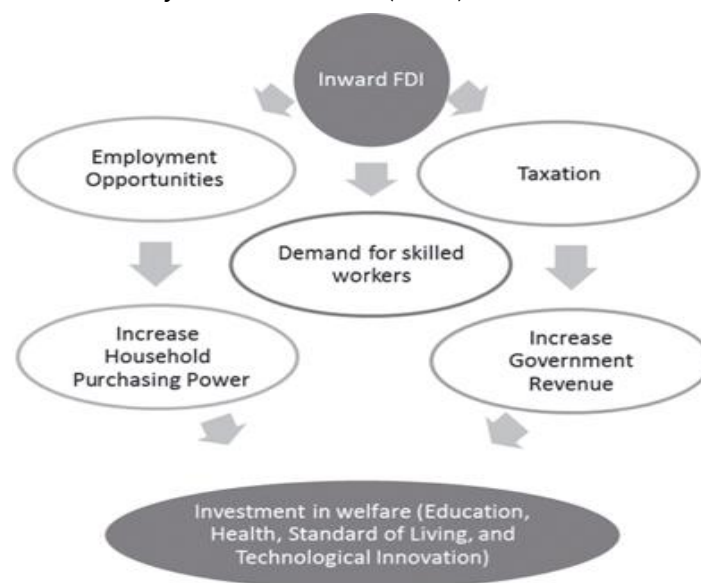
The OIC country is also looking for ways to get FDI inflow. FDI inflow is used as an addition to domestic saving and investment that benefits financial resources in the country. FDI also has an important role to play in achieving the target of sustaining high rates of economic growth, increasing employment, and increasing the standard of living in the country. Most of the OIC countries are developing countries, this is also the reason why FDI is used as one of the financial resources of OIC countries. (Dabour, 2000) As an important factor of increasing the economic growth in developing country, foreign direct investment has been totally proven. Foreign direct investment gives the opportunity in investment beyond the level of domestic savings can achieve. It can attract capital, technology, and competitiveness of the host country. Moreover, foreign direct investment also has a linkage between security, political stability and social welfare (Samimi, Moghaddasi, & Azizi, 2011).

Foreign direct investment (FDI) can be relied by host economies to improve the development and competitive position in global environment. FDI is corresponded to the welfare improvement in the host country. There is assumption that in addition of the increasing of purchasing power and spillover effect, FDI will transfer stronger social welfare functions: increasing education and life expectation (Jensen, 2006; Lehnert et al, 2013)

According to Noorbakhsh et al. (2001), FDI is more than just a finance and employment tools. For developing country, means to acquiring skills, technology, organizational and managerial practices. Foreign direct investment is actually approved has a linkage with human capital. Therefore, to maximize the FDI inflow the developing country needs to pursue the FDI by using FDI policy.

Some of current literature is focus on the linkage between FDI and economic development in an overly narrow view. The purpose of development is to enabling individuals to achieve their legitimate aims in life. As the FDI inflow affecting the economies and human capital, the FDI policies can strategically use FDI and prioritize state's objectives in human development. (Reiter & Steensma, 2010; Sen, 2000)

The path of FDI's influence on human development that will increase overall welfare is described by Lehnert et al ,(2013):



*Figure 1 The Path of FDI to Human Development*

Figure 1 means that FDI is promoting development through three channels: household, labor market, and government. The increase of FDI increases the household income and purchasing power “by driving the need for skilled workforce”. Government’s revenue is also increasing through taxation. Therefore, the governments can keep maintaining the social welfare; health care, increasing literacy, and standard of living.

### **Impact of Corruption on Human Development**

Corruption comes from Latin “corruption” or “corruptus” later appears in many European languages such as English and French, namely “corruption”, in Dutch “corruptive” which means bribery.

Islam prohibits corruption, the scope of corruption is very wide because the basic principle of prohibiting corruption is justice (“adl). One of the verses that prohibit corruption is:

وَلَا تَأْكُلُوا أَمْوَالَكُمْ بَيْنَكُمْ بِالْبَاطِلِ وَتُدْخِلُوا بِهَا إِلَى الْحُكَّامِ لِيَأْكُلُوا فَرِيقًا مِّنْ أَمْوَالِ النَّاسِ بِالْإِثْمِ وَأَنْتُمْ تَعْلَمُونَ

“And let not one of you eat the treasure of the other part of you by way of inaccurate and (do not) you bring (the affairs) of that property to the judge, so that you can eat a portion of the property of others by (way of committing) sin, even though you knowing” (QS Al-Baqarah-188)

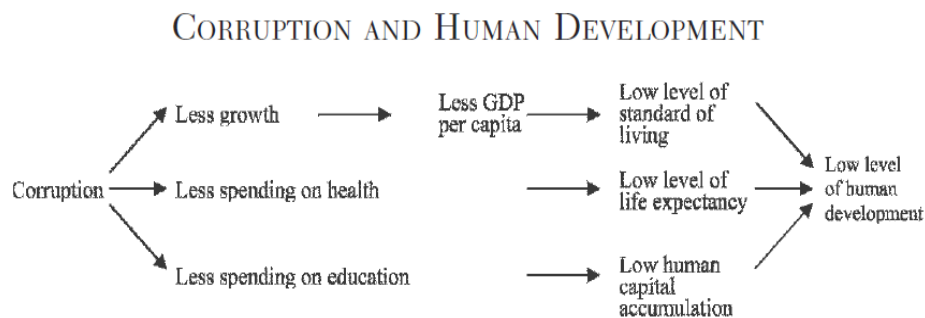
Thus, in Islam, corruption is an act of "abuse of trust, power, authority and prowess whether it is judicial, administrative, political, financial or social that emasculates societal harmony” (Abuarqub, 2009; Jabbar, 2013). Al-Maqrizi condemned corruption and argued that it stimulates an increase in the market price or inflation (Akbar & Faizin, 2019).

Corruption is the misuse of public power for private benefit. Means, public official has a direct responsibility for the provision of a public services. Corruption is an abuse of public office for personal gain and can result in a high cost economy and hamper economic growth. Corruption will interfere with the mechanism of income and wealth transmission, resulting in income inequality and increasing poverty, corruption can also affect innovation and disrupt

human capital due to reduced government performance in the public sector. (Hanafi, 2018; Rose-Ackerman, 2013)

Corruption generally indicates a structural weakness of institutions national authorities and an inability of public authorities to exercise rigorous control over the acts of civil servants and economic operators. It can lead to selflessness of the country's donors when it leads to the dissipation of aid to development and thus cause a decrease in financial assistance from the International community (Lemaire, 2003)

As a symptom of deep institutional weakness, corruption leads to inefficient economic, social, and political outcomes. Many economic damages caused by corruption such as obstruct foreign and domestic investment, reduce economic growth, promotes inflation, depreciates currency. Social sectors also have damages due to corruption, misallocation and reduce education and health expenditure, increase inequality and infant mortality rates. Moreover, it distorts the fundamental role of government. The more corrupt countries tend to have levels of human developments, it retards all of the aspects of human development. The relation between corruption and human development is described by Akçay (2006), as a following:



*Figure 2 The Path of Corruption to Human Development*

Shleifer & Vishny (1993) said, the effect of corruption to public goods can be described in the simplest way.

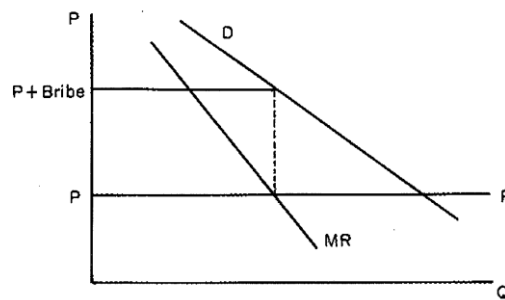


Figure 3 Corruption With Theft

The corruption without theft means the corruption occurs when the government “turns over the price of the official price of the good to the government”.  $P$  is the marginal cost of providing the goods, the official government price. However, due to the corruption, when the citizens want to access certain goods or services it is needed to give bribe to the corrupt government. Therefore, the price will increase from  $P$  to  $P + \text{bribe}$ . To sum up, corruption will increase the cost of service and goods.

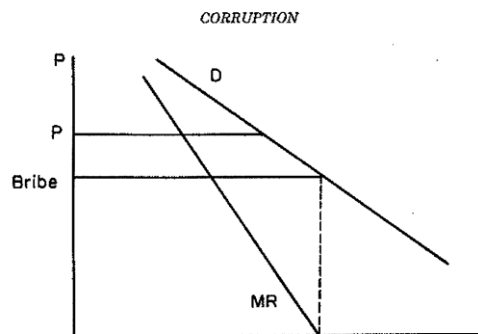


Figure 4 Corruption Without Theft

The second is corruption with theft. In this case, there is no turn over in price. However, they're simply “hides the sale”. The consumers may pay for the price or bribe, which is lower than the price. The marginal cost of to the official is zero. However, the corrupt government didn't decrease the quantity as they seeking for more profit. Therefore, they reduce the quality of public goods and services. In conclusion, the corruption with theft will decrease the quality of public goods and services. Sen (1999) said, corruption is “rightly regarded as one of the major stumbling blocks in the path to successful economic progress”.

### Economic Growth to Human Development

Economic growth has an important role in human development. There are lots of study which discussing about the economic growth. Sen (2000) said, "Income growth clearly strikes one as the main contributor to directly increasing the capabilities of individuals and consequently the human development of a nation since it encapsulates the economy's command over resource".

According to Ranis et al., (2000), GDP is an instrument in achieving a wider range of capabilities. As GDP also has a strong impact on health and literacy outcomes, through private or government expenditure. Sharma & Gani (2004) argued that GNP contributes to human development mainly through household and government activity; civil society, community organization and NGOs (nongovernmental organizations). The same level of GNP may differently affect the improvement of human development based on their allocation among institutions.

Ghosh (2006) said, "human development is the central objective of human activity and economic growth potentially a very important instrument for achieving it". The economic growth has an indirect link to human development through trickle-down effect and occurrence of poverty. When the poverty is low, which caused by higher income per capita or more equal distributed, the household expenditure on human development related items is expected to be high. The economic growth and the government spending on human development-related activities may lead on an improvement in human development.

Islam defines economic growth as a matter with a broader meaning. Economic growth is a continuous development of production factors that can properly contribute to human welfare. This is because in Islam economic growth includes the growth of material and spiritual aspects. Thus, economic development according to Islam is multi-dimensional, which includes both quantitative and qualitative aspects. The goal is not merely welfare material world, but also the welfare of the hereafter. Both according to Islam are integrated together. (Aziz, 2012; Muttaqin, 2018)

However, in several studies stated that economic growth has no impact on human development. According to Kuncoro (2003), Economic growth has always been a key point in the success of development in developing countries with the assumption that only with high economic growth can solve development problems. This has led to the insight that the success of development can only be measured by the increase in per capita income.

Economic growth does not necessarily have an automatic link with human development. There have been many observations in various societies that economic growth does not have a trickle-down effect. It must be realized that the accumulation of wealth is not always the reason for the achievement of several human choices. "In fact, individuals and societies make many choices that require no wealth at all. A society does not have to be rich to afford democracy. A family does not have to be wealthy to respect the rights of each member. A nation does not have to be affluent to treat women and men equally. Valuable social and cultural traditions can be—and are—maintained at all levels of income" (Ul Haq, 1995). Therefore, there is a need to study whether economic growth has an effect on human development in 9 OIC countries.

## **Method**

This research uses quantitative and qualitative approaches. The quantitative approach uses path diagram and panel data regression. It aims to estimation of the value of Y on the basis of the values X1, X2, X3 and Z where the pattern of the corresponding relationship is a pattern of causal relationships between variables with the aim of proving the truth of direct or indirect influence between internal factors, external factors and student achievement, the authors decide to take the title "The Effects of FDI and Corruption to Human Development in 9 OIC Countries". In addition, this study uses a qualitative approach through content analysis of the three variables to strengthen the research.

The flows of this research are described using path diagram. In the first equation there are three exogenous variables and one endogenous variable. FDI

Inflow, FDI Restrictiveness Index, and Corruption Perception Index become exogenous variables while GDP becomes an endogenous variable. In the second equation, GDP as an exogenous variable and the Human Development Index as an endogenous variable. The combination of path diagram and panel regression has been applied by Berrington, et al( 2006). The path diagram enables this research to see the direct and indirect effect, while panel regression is used to analyze the data. Therefore, the equations are:

$$Z = \beta X_1 + \beta X_2 + \beta X_3 + e \dots\dots\dots (1)$$

Z = GDP (proxy of economic growth)

X<sub>1</sub> = FDI inflow

X<sub>2</sub> = FDI Restrictiveness Index

X<sub>3</sub> = Corruption perception index

e = residue

Therefore,

$$Y = \beta X_1 + \beta X_2 + \beta X_3 + \beta Z + e_2 \dots\dots\dots (2)$$

Y = Human Development

Z = GDP (proxy of economic growth)

X<sub>1</sub> = FDI inflow

X<sub>2</sub> = FDI Restrictiveness Index

X<sub>3</sub> = Corruption Perception Index

e = residue

At this point, GDP (economic growth) can be called as intervening variable.

## Data

The data used in this scientific paper is a secondary panel data obtained from Statistics, Economic and Social Research and Training Center for Islamic Countries (SESRIC), Organization for economic Co-operation and Development (OECD) data, and Transparency International with a period of 11 years (years 2008-2018) relating to 9 OIC countries (Indonesia, Egypt, Jordan,



Morocco, Malaysia, Kazakhstan, Kyrgyzstan, Tunisia, and Turkey). In addition, the authors also conducted a literature study.

### Model Development

This research modifies the previous research conducted by Reiter & Steensma (2010), which only looked at the direct effect of FDI and corruption to human development and conducted analysis using panel regression. Thus, this research builds a model by combining path diagrams and regression panels (Berrington, et al, 2006), in order to explain which variables have a direct or indirect effect on human development.

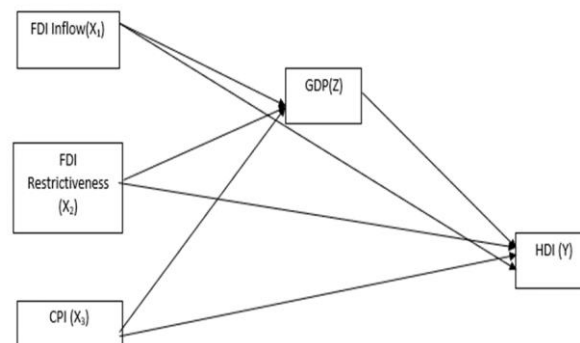


Figure 5 Model Development

There are two substructures, the first substructure where the GDP become the dependent variable, while FDI inflow, FDI Restrictiveness Index, and Corruption Perception Index (CPI) become the independent variables. And, the second substructure where human development becomes the dependent variable while GDP, FDI Inflow, FDI Restrictiveness Index and CPI become the independent variables.

### Panel Data Regression

As the aims of this research is to see the direct and indirect effect of FDI and corruption to human development, this research will combine path diagram and panel regression to analyse the data. The path diagram is found to be suitable to examine the direct and indirect effect between variables (Wermuth & Lauritzen, 1990). As the type of data is panel data, therefore panel regression needs to be conducted to analyse the data. Panel data regression

analysis is regression analysis the data structure is panel data. Baltagi (2008) described the benefit of panel regression are: a) able to control individual heterogeneity, b) present a more informative and variative data, reduce collinearity, and increase efficiency as well as degree of freedom, c) able to adapt to dynamics adjustment, d) better to present and compute the components which cannot be detected in pure cross-section and time-series, e) Able to construct more complicated behavioral models.

To choose the best model in a study, statistical considerations are needed. This is indicated by obtaining an efficient allegation. This method is conducted to get an estimate of an efficient model. The panel data test method includes Chow test, Hausman Test and LM Test.

## Results And Discussion

### Results

This section will discuss the results of the framework that was compiled using the path analysis framework. However, the data will be processed using panel regression because it matches the type of data used in this study. Beta coefficients in the path analysis equation were obtained from standardized coefficients that have been calculated using panel data regression. For the first sub-structure, the beta coefficient is obtained using the Fix Effect Model while the second sub-structure uses the Random Effect Model. Therefore, the equation and path diagram formed are:

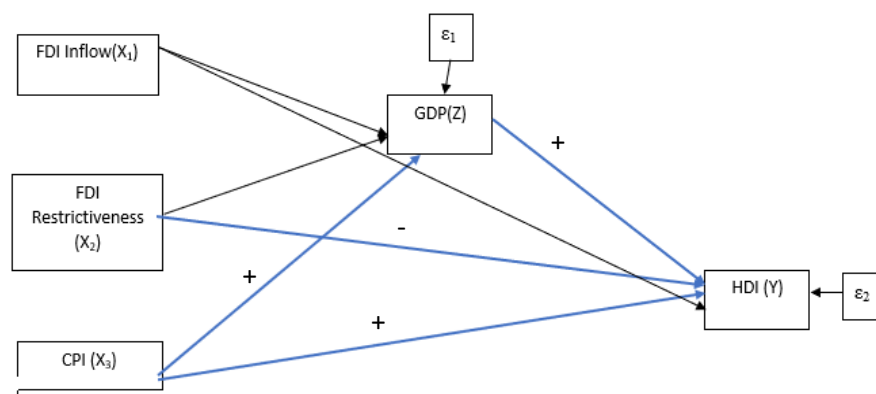


Figure 6 Path Diagram's Result

Notes:

→ : not significant      → : significant

With formula:

$$Z = 0,02017X1 + (-0,12526) X2 + 0,15951X3 + \varepsilon_1$$

$$Y = 0,36013Z + (-0,03351) X1 + (-0,3278) X2 + 0,5172X3 + \varepsilon_2$$

As the formulas are obtained by using panel regression. For the first substructure which the independent variables are FDI inflow, FDI restrictiveness index, and Corruption Perception Index (CPI) and the dependent variable is GDP as a proxy of economic growth, the result shows :

*Table 1 First Substructure's Result*

Variable	PLS	FEM	REM	$\beta$ Coefficient
FDI inflow	1,0856 (0,0000)	0,0222 (-0,277)	0,0539 (-0,0083)	0,02017
FDI Restrictiveness Index	-0,3273 (-0,0741)	-0,0065 (-0,92)	-0,0196 (-0,7593)	-0,12526
CPI	0,860 (-0,0298)	0,948*** (0,0000)	0,8885 (0,0000)	0,15951
Chow Test				396.148234* (0,0000)
Hausman Test				100.877659* (0,0000)

Notes : \*\*\* Significant with alpha 1%    \*\*Significant with alpha 5%  
\*Significant with alpha 10%            ( ) p-value

For the first substructure, Coefficients from FEM is found to be more reliable. The results of the Chow test and Hausman test support the use of FEM as the best model. The only significant variable is CPI. It has a positive relationship with economic growth.

While for the second substructure which the independent variables are GDP, FDI inflow, FDI restrictiveness, and CPI and the dependent variable is HDI has a following result:

*Table 2 Second Substructure's Result*

Variable	PLS	FEM	REM	$\beta$ Coefficient
GDP	-0,01158 -0,2401	0,01801 -0,1793	0,01855* -0,0922	0,36013
FDI inflow	-0,00195	-0,00198	-0,0019	-0,03351

	-0,8608	-0,4372	-0,4551	
FDI Restrictiveness	0,01017	-0,0444	-0,04411***	-0,3277
	-0,5665	(0,000)	(0,000)	
CPI	0,02087	0,1596	0,15833***	0,5172
	-0,5878	(0,000)	(0,000)	
Chow Test				269,587895*
				(0,0000)
Hausman Test				1,764294
				(0,779)

Notes : \*\*\* Significant with alpha 1% \*\*Significant with alpha 5%  
\*Significant with alpha 10% ( ) p-value

In the second substructure, REM is found to be more reliable as the Chow test is significant while the Hausman test is not significant. Therefore, the  $\beta$  Coefficients are obtained from standardized REM results. FDI inflow is the only variable not significantly affect the human development index.

### Robustness Test

To ensure the best model, the heteroscedasticity and multicollinearity test were conducted.

Table 3 Robustness Test

Variable	VIF	1/VIF	Panel EGLS
GDP	3,98	0,2512	-0,013942 (0,000)
FDI inflow	-3,96	0,2523	-0.001468 0.6885
FDI Restrictiveness	1,31	0,7624	0.017043 0.0264
CPI	1,31	0,763031	0.044658 0.0001
Durbin-Watson stat			0.015688

From the multicollinearity test, the mean VIF is below 5 or 10, means there is no multicollinearity. The variables are not correlated to one another. However, the model is still experiencing symptoms of heteroscedasticity. However, according to Pindyck & Rubinfeld (1988) if heteroscedasticity and autocorrelation occur in an equation model, it does not affect the validity of a

model, meaning that the model is still biased and consistent, only the resulting estimator becomes inefficient.

### **Analysis**

This section will be divided into two groups:

#### *First Substructure:*

- *FDI inflow and FDI Restrictiveness Index to Economic Growth (GDP)*

In the Fix Effect Model test, the FDI inflow and FDI Restrictiveness Index variables are not significant, if there is a change (increase / decrease) in the FDI inflow then it will not affect economic growth in the 9 OIC countries which are the object of research.

This result is different from the hypothesis that FDI influences economic growth. According to Wijeweera, et al (2010), FDI inflow provides a positive influence on economic growth in countries with highly skilled labor. They used a stochastic frontier model using panel data for 45 countries from 1997-2004.

FDI and economic growth have a bi-causality relationship if the economy is running optimally, taken place in Finland Denmark, Sweden and Norway. In Norway and Sweden, FDI influences economic growth by increasing productivity and increasing technology and knowledge transfer. However, in Denmark and Finland there is no two-way causality, this is because in Finland and Denmark the dominant company operates is distribution not manufacturing (Irandoust Manuchehr, 2001)

According to Iamsiraroj, (2016), that FDI has an influence on high economic growth by taking 124 countries in the 1971-2010 period. The more a country attracts FDI, the higher the economic growth in that country. This study finds empirical evidence that FDI has a greater positive impact in developing countries than in developed countries. Other determinants in this study are the number of workers, openness to trade and economic freedom. However, this study also found that the effect of FDI on economic growth was not seen in African countries and the Middle East and in the Asian and Australasian countries because FDI cannot be absorbed properly by the host

country and the macroeconomic climate is also an investment climate that is not appropriate.

The difference in the results of this study with previous studies due to differences in conditions and several factors have been submitted by previous studies has a positive impact on the manufacturing sector but is still ambiguous on the services sector (Alfaro, 2003; Wijeweera et al., 2010). In this regard, the 9 OIC countries have different economic main sectors. In Indonesia, Jordan, Malaysia and Turkey, manufacturing sector is among the three leading economic sectors of the country. However, other countries namely Egypt, Morocco and Kyrgyzstan still rely on agriculture as the main economic sector. While Tunisia and Kazakhstan rely on the gas and oil and mining sectors. FDI will be optimally absorbed if the majority of companies are in manufacturing sector (Manuchehr, 2001). The effect of FDI on economic growth will also occur if the transfer of technology and the absorption of human resources are carried out maximally (Liu, 2008).

- *Corruption Perception Index to Economic Growth*

In the Fixed Effect Model test, the Corruption Perception Index variable is significantly positive at the 1 percent real level of economic growth in 9 OIC countries which are the object of research. If the nominal CPI increases 1 percent in a certain period, it will increase economic growth in 9 OIC countries by 0,15951 percent. However, if there is a CPI decrease of 1 percent in a given year, this will affect the decline in economic growth in 9 OIC countries by 0,15951 percent in the same year (*ceteris paribus*).

These results are in accordance with previous studies, an increase in corruption in a country causes a decline in economic growth. Corruption can increase economic inefficiency, reduce political stability, which leads to a decline in economic growth (Akçay, 2006; Iamsiraroj, 2016; Mo, 2001; Reiter & Steensma, 2010; Shleifer & Vishny, 1993).

*Second substructure*

- *FDI inflow to human development*

In the REM test, the FDI inflow variable is not significant at the 1 percent, 5 percent, or 10 percent level. That is, if there is a change (increase / decrease) in the inflow of FDI categorized into the FDI variable, then it will not affect human development in the 9 OIC countries which are the object of research. To sum up, FDI inflow does not have a direct effect to Human Development, as it is not a significant variable.

These results are contrary with research by Lehnert et al., (2013), Noorbakhsh et al. (2001) and Reiter & Steensma (2010). However, Reiter & Steensma (2010) has provided an explanation that FDI might not have an effect on what human development if the level of restrictiveness of a country is still high so that it inhibits FDI.

According to Lehnert et al., (2013), with 175 countries as research objects during the 2007-2017 period, FDI was able to improve the welfare of host countries, including education, health and standards of living. Lehnert stressed that the effect of FDI is specific to directly seeing each component (HDI, Life expectancy, education, GDP, and knowledge index) and is strongly influenced by the role of government. By looking specifically at each component of human development, it is possible to see things that are not visible if measurements are taken in aggregate measurements.

However, the results of this study are also in line with other empirical findings. According to Hussain, et al (2010), that FDI is not a major factor in increasing human development. However, the international competitive environment together with foreign direct investment can play a fundamental role in economic development of Pakistan.

In all, the positive impact of FDI on human development depends on the condition of openness trade, political stability, and very much depends on the country's policy (Sharma & Gani, 2004). Some OIC countries still face the problem of political instability and the investment climate, this makes the absorption of FDI is less than optimal.

- *Corruption Perception Index to human development*

The Corruption Perception Index variable is significantly positive at the 1 percent real level of human development in 9 OKI countries which are the object of research. If the nominal CPI increases 1 percent in a certain period, it will increase human development in 9 OIC countries by 0,5172 percent. However, if there is a CPI decrease of 1 percent in a given year, this will affect the decline in human development in 9 OIC countries by 0,5172 percent in the same year (*ceteris paribus*).

Due to the higher CPI means the perception of corruption in a country is reduced. It can be said, that the better the condition of the country without corruption, the better the development of human development in the country. This finding is in line with other previous researches. Corruption reduces government efficiency in running businesses to improve human development and can cut budget allocations that affect human development (Akçay, 2006; Iamsiraroj, 2016; Reiter & Steensma, 2010; Rose-Ackerman, 2013; Shleifer & Vishny, 1993).

- *FDI Restrictiveness Index to Human Development*

In the Random Effect Model test, the FDI Restrictiveness Index variable is significantly negative at the 10 percent real level of human development in 9 OKI countries which are the object of research. If the nominal FDI Restrictiveness Index increases 1 percent in a certain period, it will decrease human development in 9 OIC countries by -0,3277 percent. However, if there is a FDI Restrictiveness Index decrease of 1 percent in a given year, this will affect the increase in human development in 9 OIC countries by -0,3277 percent in the same year (*ceteris paribus*).

The FDI restrictiveness index explains the policies taken by the state regarding state openness to FDI inflow. The discussion of the FDI restrictiveness index is closely related to economic openness in a country. The results show that the FDI restrictiveness index is significantly negative for human development. The increasing FDI restrictiveness index leads to the



decreasing of a country's human development. These results are in line with Reiter & Steensma (2010)

Trade openness and enforcing fewer restrictions can help improve human development through the income channel. Therefore, higher restriction will decrease the human development. Similar results were also found in Shepherd & Pasadilla (2011) ,the high restrictive policy environment gave a negative correlation to human development. These results are in line with the statement “more restrictive policies result in higher services prices of basic goods and services for consumers” .

At the time of the Prophet Muhammad, the prophet supported economic openness. This can be seen from the absence of trading restrictions on the market. The prophet kept the market running according to Islamic law. However, no market boundaries were made directly, the market mechanism was allowed to run as it is (Sukanto, 2012).

- *Gross Domestic Product to Human Development*

In the Random Effect Model test, the GDP variable is significant at 10 percent affect human development in the 9 OIC countries which are the object of research. If the nominal GDP increases 1 percent in a certain period, it will increase human development in 9 OIC countries by 0,36013 percent. However, if there is a GDP decrease of 1 percent in a given year, this will affect the declining in human development in 9 OIC countries by 0,36013 percent in the same year (*ceteris paribus*).

This result states that economic growth has a positive effect on human development in 9 OIC countries. These results are accordance with previous research that economic growth has a positive correlation with human development (Elistia & Syahzuni, 2018; Ghosh, 2006; Maqin, 2017; Ranis et al., 2000)

However, this empirical result is inversely proportional to Ul Haq (1995) research, which states that economic growth has no effect on human development. Even so, the quality of income distribution can have an effect.

The influence of economic growth on human development is explained in more detail by Ghosh (2006); the effect of economic growth on human development can occur if it is supported by the government, which from the beginning gave attention to human development. The object of study is 15 major Indian states during 1981-200, the results found that there was a strong relationship between economic growth and human development. There are two cycles that occur: vicious circle (low economic growth and low human development) and virtuous growth (high economic growth and high human development). Virtuous circles can be achieved if the government focuses on increasing human development by allocating resources to the social sector such as education, health services, sanitation, and drinking. The states that have succeeded in achieving virtuous circles have implemented policies that have focused on human development from the start.

According to Ranis et al. (2000), using cross country of 75 developing countries from 1960-1992. Economic growth and human development have mutual relationships that build each other up, high economic growth becomes an increase in human development, vice versa. Meanwhile, the low level of human development also makes economic growth low. Achieving economic growth for human development needs to be accompanied by policies that support. It cannot be denied that economic growth is one of the important things, but to achieve an increase in human development, an increase in human development needs to be targeted from the start.

As per, human development as a major achievement has been the goal of OIC since its inception. This was followed up by the 10-year OIC Program of Actions, one of which discussed development issues. In point III development issues are discussed in more detail about the targets of achieving higher education, science, and technology. OIC members have seriously made human development as a national achievement.

## **Conclusion**

In the first structure where economic growth becomes the dependent variable, the variable that has a significant effect is the Corruption Perception Index. Whereas FDI inflow and FDI restrictiveness index have no significant effect. Meanwhile, in the second structure where the Human Development Index becomes the dependent variable, the influential variables are economic growth (GDP), corruption, and FDI Restrictiveness. FDI inflow is not significant, so it is not a major factor in human development. Therefore, in 9 OIC countries we can conclude FDI inflow has no direct or indirect effect on human development, while the FDI restrictiveness index has a direct effect on human development. On the other side, corruption has a direct negative effect on human development and also an indirect influence through economic growth on human development

Based on this research, there are several recommendations: for the government, it is better to optimize the economic, political and investment climate of a country before pursuing the inflow of FDI so that FDI can be optimally absorbed. Corruption still needs to be one of the main concerns of the country because it has been proven to have a negative impact on economic growth and human development. To enlarging the scope of this research, the further research is expected to be able to use other indicators that are able to describe the country's investment climate in more detail. In order to capture the influence of foreign direct investment more comprehensively, research needs to be conducted with the scope of state firms.

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