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# WHAT DETERMINES FOREIGN DIRECT INVESTMENT IN MUSLIM COUNTRIES?

**Muhammad Adnan Azzaki**[1*]
**Ibnu Qizam**[2]
**Abdul Qoyum**[3]
[1,3]Sunan Kalijaga State Islamic University, Indonesia
[2]Syarif Hidayatullah State Islamic University, Indonesia
[*1]*Corresponding Email: adnanazzaki96@gmail.com*

**ABSTRACT –** This study examines the influence of institutional quality, green economy policies, and financial development on Foreign Direct Investment (FDI) in Muslim countries. It employed panel data from 2010 to 2020 and is analyzed using the Dynamic Panel Model with the Generalized Method of Moments (GMM), which allows for handling endogeneity problems that often arise in panel data analysis. Statistical testing revealed that most institutional quality indicators, such as Political Stability, Government Effectiveness, Regulatory Quality, and Rule of Law, significantly and positively impact foreign direct investment. Additionally, the green economy, represented by natural resources, human capital, and the overall regulatory environment, also exerts a significant positive effect on foreign direct investment. Similar outcomes were observed in the financial sector's development, which significantly and positively reinforced the relationship between institutional quality and the green economy on foreign direct investment in Muslim countries. These results suggest a positive trajectory for resource management potential that can enhance the investment climate in Muslim countries. The findings offer valuable insights for policymakers in formulating effective strategies to boost capital inflows in Muslim countries. Policymakers are advised to consistently monitor both institutional quality and green economy indicators to discern investor preferences for foreign direct investment inflows.
**Keywords:** Foreign Direct Investment, Institutional Quality, Green Economy, Financial Development

***ABSTRAK – Determinan Apa yang Mempengaruhi Investasi Asing Langsung di Negara-negara Muslim?*** *Paper ini menguji pengaruh kualitas kelembagaan, kebijakan ekonomi hijau, dan pembangunan keuangan terhadap Investasi Asing Langsung (FDI) di negara-negara Muslim. Studi ini menggunakan data panel tahun 2010 hingga 2020 yang dianalisis dengan Model Panel Dinamis dengan Generalized Method of Moments (GMM) yang memungkinkan penanganan masalah endogenitas yang sering muncul dalam analisis data panel. Hasil pengujian statistik menunjukkan bahwa sebagian besar indikator kualitas kelembagaan yang diwakili oleh Stabilitas Politik, Efektivitas Pemerintah, Kualitas Peraturan, dan Supremasi Hukum berpengaruh positif signifikan terhadap penanaman modal asing langsung. Selain itu, ekonomi hijau, yang tercermin pada sumber daya alam, sumber daya manusia, dan peraturan lingkungan secara keseluruhan mempunyai dampak positif yang signifikan terhadap investasi asing langsung. Hasil serupa juga diperoleh pada pengembangan sektor keuangan yang mampu memperkuat hubungan kualitas institusi dan ekonomi hijau terhadap investasi asing langsung di negara-negara Muslim secara positif dan signifikan. Temuan ini menunjukkan tren positif mengenai potensi pengelolaan sumber daya yang dapat menciptakan manfaat bagi iklim investasi di negara-negara Muslim. Temuan-temuan ini juga mempunyai implikasi berharga bagi para pembuat kebijakan dalam merancang strategi efektif untuk meningkatkan aliran modal di negara-negara Muslim. Mereka disarankan untuk terus memantau kualitas kelembagaan dan indikator ekonomi hijau untuk mengidentifikasi preferensi investor terhadap arus masuk investasi asing langsung.*
***Kata Kunci:*** *Investasi Asing Langsung, Kualitas Institusi, Ekonomi Hijau, Perkembangan Keuangan*

## INTRODUCTION

In recent years, the determinants of Foreign Direct Investment (FDI) have been a focal point of analysis for economists and policymakers. This is particularly pertinent for developing nations that rely heavily on FDI inflows as a pivotal source of developmental finance. The infusion of FDI can catalyze economic expansion through the generation of employment, the promotion of economic integration, and the enhancement of infrastructure (Nguyen, 2020). Empirical research conducted by Yang et al. (2014) corroborates the contributory role of FDI in fostering economic growth. This assertion is substantiated by the economic trajectories of countries such as the United States, China, and Singapore, which have effectively capitalized on FDI (UNCTAD, 1996). Adegboye et al. (2020) contend that the primary objective of such investments is to augment living standards by addressing the prospective needs of a country in forthcoming years. They further argue that relying solely on domestic investment for development is untenable due to capital limitations. As a result, it becomes incumbent upon nations to cultivate an environment that is conducive to attracting foreign investors.

Nonetheless, forecasts for 2022 and beyond indicate that developing nations may confront obstacles in securing FDI. This predicament extends to countries within the Organisation of Islamic Cooperation (OIC), a majority of which are categorized as lower middle-income countries (Chaudhry et al., 2021). In light of the instrumental role of FDI inflows in OIC countries for development and hastening economic recovery from global threats and crises, a number of researchers, including Sajilan et al. (2019), Rashid et al. (2016), and Megasari & Saleh (2021), have embarked on studies to discern the factors influencing FDI in these countries. Aziz and Mishra (2016) pointed out that several factors contribute to the low inflow of FDI to Muslim countries during the global crisis. These factors include the absence of an inclusive growth plan leading to ineffective social programs, the unequal distribution of economic rewards due to widespread corruption and inadequate institutions, the triggering of the Arab Spring by an alliance between the ruling class and economic elites (rent-seekers), and the weak institutional strength of Arab economies.

In light of these challenges, this study proposes a novel approach to attract FDI inflows by focusing on two main variables: institutional quality and green economy policies. Institutional effectiveness, which comprises composite variables that explain the conditions and stability within a country, plays a



crucial role in attracting FDI inflows. On the other hand, the green economy, which focuses on the environmental and social concerns of a company in a country, is currently a preference among investors. This trend towards the integration of non-financial characteristics, such as ethical factors and environmental and social concerns, in investment decisions has been noted by Qoyum et al. (2022). This research is unique as it combines three significant issues in attracting FDI inflows. Firstly, it is based on the OLI paradigm theory, which posits that FDI benefits from institutional quality. Secondly, it considers current investor preferences that focus on green economic development, which has a positive impact on FDI. Lastly, it explains how FDI, driven by financial development, can improve institutional quality and accelerate green growth.

The relationship between institutional quality and FDI has been extensively explored in numerous studies. However, this study introduces a novel perspective by examining the relationship between green economy variables and FDI, and constructing a model that incorporates financial development variables as moderating variables. The rationale behind using financial development variables as moderating variables is based on research findings that demonstrate the moderating effect of financial deepening variables on FDI (Yiadom et al., 2023; Nguyen & Lee, 2021; Islam et al., 2020), and studies that highlight the impact of financial development variables as predictor variables on FDI (Pham et al., 2022; Safdar et al., 2021).

FDI is a key source of capital and economic growth for developing countries. However, not all countries attract the same level of FDI, and there are significant variations among Muslim countries in terms of FDI inflows. What factors explain these differences and how can Muslim countries improve their FDI attractiveness? These are the main questions that motivate this study. While the determinants of FDI have been extensively studied, most research has focused on specific countries (Blonigen & Piger, 2019), regions (Gangi & Abdulrazak, 2012; Asamoah et al., 2016), or groups of countries such as the Organisation of Islamic Cooperation (OIC) (Murshed et al., 2022). These studies have primarily concentrated on a limited range of institutional quality indicators, such as political stability and regulatory quality (Mustofa & Sukmana, 2021), or government stability, corruption, democratic accountability, and bureaucratic quality (Sajilan et al., 2019).

Moreover, few studies have examined the impact of the global crisis on FDI inflows in Muslim countries, which face unique challenges and opportunities

in the context of globalization and sustainability. Therefore, this study aims to address this gap by investigating the impact of institutional quality indicators and the green economy on FDI inflows in OIC countries. The findings will contribute to a deeper understanding of investment flows as a vital capital instrument for Muslim countries, providing valuable insights for regulators and future research efforts.

The paper is structured as follows: The first section introduces the research topic and objectives. The second section reviews the relevant literature and formulates the hypotheses. The third section outlines the research methodology and data sources. The fourth section presents and discusses the empirical results. The final section concludes the paper and offers implications and recommendations.

## LITERATURE REVIEW

### Institutional Quality on FDI

The determinants of foreign direct investment (FDI) in Muslim countries are influenced by various factors, including political stability and institutional quality, as highlighted by various world organizations. Mustofa et al. (2021) analyzed the impact of country risk, regulatory quality, and selected macroeconomic factors on FDI inflows into selected Muslim countries. The results indicated that Muslim countries tend to have a moderate level of country risk exposure and a low level of institutional quality. It was suggested that enhancing institutional quality is vital to stimulating foreign investment (Mustofa et al., 2021). The World Bank also underscores the significance of institutional quality in Muslim countries, asserting that good governance is vital for economic growth, human capital development, and social cohesion, and is essential for attracting FDI (Karadag, 2022; Paul & Jadhav, 2020; Ibrahim, 2018).

The eclectic paradigm, or OLI model, proposed by Dunning (2000), serves as a framework for multinational companies in directing FDI to host countries. This model has been expanded in empirical studies to include institutional quality as a component of the 'location' that can attract FDI inflows. North (1994) posits that inefficient institutions lead to higher transaction costs and lower profits, whereas countries with high-quality and reliable institutions can foster economic activity by reducing these costs, thereby increasing productivity and profits.



Empirical studies often utilize the World Bank's Worldwide Governance Indicators as a proxy for institutional quality, with findings indicating that institutional factors have a significant positive impact on FDI inflows (Dumludag, 2009). However, the relationship between political instability and FDI is less clear, with some studies noting a negative impact (Resnick, 2003), while others find no relationship (Bougharriou et al., 2019). Research examining the impact of institutional and political factors on FDI flows from developing countries, including China, has identified significant factors such as the rule of law, political stability, regulatory quality, and control of corruption (Paul & Benito, 2018; Paul & Jadhav, 2020).

Aleksynska and Havrylchyk (2013) discuss how institutional distance can influence FDI, with foreign investors from developing countries preferring to invest in countries with better institutions, thereby gaining access to new technologies and intellectual property protections. Conversely, investments from developing countries into countries with weaker institutions are seen to reduce FDI inflows. The concept of psychological distance suggests that foreign investors are more likely to invest in markets with which they are psychologically familiar, implying that smaller institutional differences between countries encourage FDI, while larger distances discourage it (Bénassy-Quéré et al., 2005). Claessens and Van Horen (2008) found that institutional distance negatively impacts FDI flows into the banking sector.

Given that most Muslim countries are developing nations in need of substantial funding for national development projects, the divergent findings in the literature present a research gap. This gap is addressed by studies that have found both significant (Mustofa & Sukmana, 2021; Mustofa et al., 2021; Aziz, 2018) and insignificant (Sajilan et al., 2019; Megasari & Saleh, 2021) effects of institutional quality on FDI inflows. This discrepancy underscores the need for further research to achieve a consensus on the influence of institutional quality on FDI in Muslim countries.

**Green Economy and FDI**

The integration of a green economy in Muslim countries is paramount for fostering sustainable development, conserving natural capital, creating jobs, enhancing human welfare, and mitigating poverty and inequality (Vaghefi et al., 2015). Given that the economies of Muslim nations are largely dependent on agriculture and natural resources, transitioning to a green economy presents

significant opportunities across these sectors (Wiratama & Safitri, 2023). The adoption of a green economy is also instrumental in curbing environmental degradation and shielding societies from the adverse effects of climate change (UNEP, 2020). Consequently, there is an urgent need to expedite the management of green economic potential in Muslim countries by broadening access to capital and sustainable technological innovation via increased investment. It is thus essential to elucidate the relationship between the green economy and foreign direct investment (FDI) in these countries.

Conceptually, the influence of the green economy on FDI can be examined through the lens of ecological modernization theory, which has emerged in the discourse of sustainable development in response to criticisms of natural resource exploitation and its resulting environmental degradation (Qu et al., 2020). Ecological modernization theory posits that ecological crises can be resolved through technical and procedural innovations, thereby offering a theoretical foundation for promoting green economic practices, including green growth (Lorek & Spangenberg, 2014), and green technology (Bonds & Downey, 2012). Within this framework, enhancements to environmental regulations are viewed as the principal mechanism for transitioning towards a green economy—a stance supported by the United Nations Environment Programme (UNEP), which considers state policies and actions via environmental regulations as indicators for measuring a green economy (Ryszawska, 2017). In support of this, research by Kim and Rhee demonstrated that stringent environmental regulations can significantly attract FDI inflows across 120 developing countries.

Additionally, the European Environmental Agency (EEA) suggests a regional structure for measuring the green economy that encompasses welfare and social dimensions, including human capital (Ryszawska, 2017). This perspective is corroborated by empirical studies indicating a strong correlation between human capital and the natural environment (Zafar et al., 2019). Human capital is instrumental in adopting green technologies, enhancing societal awareness for environmental preservation, and facilitating the economic system's transformation amidst industrial growth acceleration. Economic theory also acknowledges the pivotal role of human capital in attracting FDI inflows.

The Global Green Growth Institute (GGGI) provides indicators for the green economy, particularly the environmental dimension through natural resources, which are inherently linked to green economy policies. The green economy



endeavors to promote economic growth by judiciously utilizing natural resources, safeguarding the environment, and enhancing resilience to natural disasters, ultimately aiming to minimize pollution and environmental damage (Boehnert, 2016). Natural resources are frequently cited as a key attraction for foreign investors, with studies such as Asiedu and Lien (2011) using panel data analysis to reveal that mineral and oil exports, as proxies for natural resources, are significant in drawing FDI inflows—a finding consistent with Hailu's (2010) research that established a positive correlation between natural resources and FDI.

Although the prevailing literature generally suggests that green economy indicators positively and significantly impact FDI in various developing countries, research on the relationship between the green economy and FDI in Muslim countries remains limited and complex. To date, there is an absence of research explicitly examining the impact of the green economy on FDI within the context of Muslim countries. Some studies reference regions with predominantly Muslim populations, such as the Middle East (Ghanem & Alamri, 2023), emerging countries (Qadri et al., 2023), and the MENA region (OECD, 2023). This research aims to bridge the gap in existing literature by investigating the influence of the green economy through indicators such as natural resources, human capital, and regulatory environment on FDI in Muslim countries.

**The Role of Financial Development**

Financial development enhances the efficiency of capital allocation in host countries by fostering the growth and deepening of financial markets and can moderate the positive relationship between institutional quality and foreign direct investment (FDI). It is imperative for financial development to function in concert with a robust institutional framework to effectively identify investment opportunities, equitably distribute resources, provide substantial financial backing to foreign-funded enterprises, and diminish financing costs and investment risks. Such a synergistic approach bolsters the impact of institutional quality on the attractiveness of FDI (Nasir et al., 2020). Research by Desbordes and Wei (2020) indicates that financial development, via increased access to external financing and indirect support for overall economic activity in both home and host countries, can act as a catalyst for FDI. Consequently, governments are urged to enhance access to external capital by

improving institutional quality if they aim to promote international companies and attract multinational enterprises (MNEs).

Within the scope of this study, a well-developed financial system can modulate the effect of quality institutions and a green economy on foreign investment in Muslim countries. Although the existing literature does not consistently specify Muslim countries, some studies employ samples that include developing or lower-middle-income countries, which encompass Muslim nations (Desbordes & Wei, 2020). For instance, Hunjra et al. (2022) explored the role of financial development in reinforcing the relationship between green economic indicators, such as natural resources, and FDI in 50 lower-middle-income countries. Islam et al. (2020) conducted research on 79 Belt and Road Initiative (BRI) partner countries, many of which are Muslim. Additionally, the World Bank's research has highlighted the pivotal role of financial development in interpreting the impact of FDI on environmental risk, ensuring that FDI contributes to sustainable development goals, as evidenced in Malaysia (Yiadom et al., 2023).

This research endeavors to bridge the gap in the extant literature by positing financial development as a moderating variable that amplifies the influence of institutional quality and the green economy on FDI in Muslim countries. Furthermore, the inclusion of financial development as a variable is predicated on the premises articulated in prior literature, which posits that the presence of a robust financial sector can enhance the efficacy of government policies in augmenting FDI inflows.

## METHODOLOGY

The objective of this research is to ascertain the determinants of foreign direct investment (FDI) by employing indicators of institutional quality and the green economy within Muslim countries. The study utilizes panel data spanning from 2010 to 2020, comprising 32 data points. Secondary data for this analysis was sourced from the World Bank. The data were examined using a dynamic panel model with the Generalized Method of Moments (GMM) method, facilitated by E-Views software. The GMM model is adept at mitigating issues such as variable bias, unobserved panel heterogeneity, and measurement error, while also addressing the lagged endogeneity of the dependent variable within the dynamic panel model (Ahmed & Ahmad, 2020). The GMM estimation



approach is employed to delineate the direct and indirect effects of each independent and moderating variable on the dependent variable.

The requisite minimum sample size is determined in accordance with the central limit theorem, which posits that under certain conditions, the distribution of the mean of a number of independent random variables will approximate a normal distribution, provided the sample size is 30 or greater. A larger sample size will result in the sample mean distribution more closely resembling a normal distribution (Lopez & Weber, 2017). The dependent variable in this study is the inflow of FDI, measured in U.S. dollars. The independent variables encompass data on the conditions of institutional quality, based on the World Bank's world governance indicators, which include voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption.

Data on additional independent variables, which are green economic indicators in Muslim countries, are derived from the World Bank, UNEP, and GGGI, and utilize three primary indicators: state policy (environmental regulations), welfare dimensions (human capital), and environmental dimensions (natural resources). The moderating variable, which serves to alter the direction of the relationship between the independent and dependent variables, is the financial development index. As defined by the International Monetary Fund (IMF), the Financial Development Index measures the development, accessibility, and efficacy of a country's financial institutions and markets, comprising both the Financial Market Index and Financial Institution Index. This research also incorporates three control variables: population, trade openness, and market size.

The GMM estimation model employed in this study demonstrates the direct impact of independent variables and the moderating variable on the dependent variable, resulting in a dynamic function as delineated in the equations below:

$$\text{FDI}_{it} = \beta 1 + \lambda \text{FDI}_{it-1} + \beta 2\text{PS}_{it} + \beta 3\text{VA}_{it} + \beta 4\text{GEit} + \beta 5\text{RQ}_{it} + \beta 6\text{RL}_{it} + \beta 7\text{CC}_{it} + \beta 8\text{NR}_{it} + \beta 9\text{RE} + \beta 10\text{HC}_{it} + \beta 11\text{POP}_{it} + \beta 12\text{TO}_{it} + \beta 13\text{MS}_{it} + \beta 14\text{FI}_{it} + \varepsilon \text{it} \quad (1)$$

Where FDI represents the constant for year t, and the subscripts i and t denote the number of countries and time periods included in the study, respectively. The variables are as follows: FDI = Foreign Direct Investment; PS = Political Stability; VA = Voice & Accountability; GE = Government Effectiveness; RQ

= Regulatory Quality; RL = Rule of Law; CC = Control of Corruption; NR = Natural Resources; RE = Regulatory Environment; HC = Human Capital; POP = Population; TO = Trade Openness; MS = Market Size; FD = Financial Development Index.

The model equations for GMM analysis with interaction Moderated Regression Analysis (MRA) are as follows, with each equation incorporating an interaction term between the financial development index and one of the institutional quality or green economy indicators:

$$FDI_{it} = \beta 1 + \lambda FDI_{it-1} + \beta 2 PS_{it} + \beta 3 VA_{it} + \beta 4 GEit + \beta 5 RQ_{it} + \beta 6 RL_{it} + \beta 7 CC_{it} + \beta 8 NR_{it} + \beta 9 RE + \beta 10 HC_{it} + \beta 11 POP_{it} + \beta 12 TO_{it} + \beta 13 MS_{it} + \beta 14 FI_{it} + \beta 15\ PS*FD_{it} + \varepsilon it \quad (2)$$

Subsequent equations follow a similar structure, with the interaction term (e.g., $\beta$15 VA*FD*it*, $\beta$15 GE*FD*it*, etc.) varying to reflect the interaction between financial development and each of the other independent variables.

## RESULT AND DISCUSSION

### Measurement Model Test Results

The initial phase of this analysis involves selecting the optimal model based on established criteria. Subsequently, hypothesis testing is conducted to evaluate the significance of the relationships between the variables under study. In the context of the Generalized Method of Moments (GMM) modeling, a series of tests are performed to ascertain the most robust results. The comprehensive testing stages include the following: (1) Validity Test (Sargan Test), (2) Autocorrelation Test (Arellano-Bond Test), and (3) Unusual Test.

### Validity Test (Sargan Test)

The Sargan test is utilized to assess the validity of instruments within the GMM model. The decision-making criterion for this test is that if the prob>chi2 value exceeds 0.05, the instrument is deemed valid. Conversely, a prob>chi2 value below 0.05 indicates an invalid instrument. The analysis results indicate that the prob>chi2 value is 0.5784, surpassing the 0.05 threshold. This outcome confirms the validity of the instruments employed in this research.

**Autocorrelation Test (Arellano-Bond Test)**

The Arellano-Bond test is specifically designed for the GMM model to detect autocorrelation. The criteria for this test mirror those of the validity test; a prob>z value in the second order greater than 0.05 suggests the absence of autocorrelation. Conversely, a prob>z value in the second order less than 0.05 indicates the presence of autocorrelation. The data analysis reveals a prob>z value in the second order of 0.9510, which is above the 0.05 benchmark, signifying no autocorrelation in the research model.

**Unusual Test**

The decision-making process for the bias test involves examining if the lag coefficient value of the dependent variable falls between the Pooled Least Square (PLS) and Fixed Effect (FE) estimates. The data estimation results demonstrate that the First Difference Generalized Method of Moments (FDGMM) model does not exhibit bias, as evidenced by the lag coefficient value of the dependent variable (L1.FDI) FDGMM being 0.269, which lies between the PLS (0.3286) and FE (0.1289) estimates. Therefore, the First Difference model is the appropriate choice for use in this research.

Table 1. Sargan and Arellano Bond Test

| Result test | Model 1 (First Difference) | Model 2 (Two-Step GMM) |
|---|---|---|
| Sargan chi sq. | 20,072 | 20,009 |
| Sargan Prob>chi sq. | 0.5784 | 0.5016 |
| AR1 | 0.4493 | |
| AR2 | 0.9510 | |

(Source: processed data, 2023)

**The Effect of Institutional Quality and Green Economy on Foreign Direct Investment**

Upon examination of the results, it is concluded that the first hypothesis is substantiated. The indicators of institutional quality, as embodied by Political Stability, Control of Corruption, Voice and Accountability, Regulatory Quality, Rule of Law, and Government Effectiveness, exhibit a notable direct and indirect influence on foreign direct investment (FDI). This is explicitly delineated in Table 2.

Table 2. Estimation of Dynamic Panel Data Regression (Directly)
Dependent variable: FDI

| Indep. Variable | Model 1 (First Difference) | Model 2 (Two-Step GMM) |
|---|---|---|
| FDI(t-1) | 0.269*** | 0.221*** |
| SP | 4,060*** | -4,950*** |
| CC | 1,440 | -8,860*** |
| VA | -2,530*** | -2,430 |
| RQ | 7,310** | -2,040 |
| RL | 2,050*** | 1,420*** |
| GE | 2,570*** | -2,040 |
| NR | 7,950** | 6316. |
| HC | 2845*** | 4919.0*** |
| RE | 3856** | -8,730*** |
| TO | 2,590*** | 4278 |
| POPs | 7809 | -553,636*** |
| Ms | -79,292*** | -30794639 |
| FD | 1301 | 3,560 |
| FDI(t-1) FEM* | 0.1289*** | 0.3087*** |
| FDI(t-1) PLS* | 0.3286*** | 0.7189*** |
| Obs | 352 | 352 |
| N | 32 | 32 |
| Instruments | 32 | 32 |

(Source: processed data, 2023)

*Hypothesis 1a*

The findings show that political stability positively impacts Foreign Direct Investment (FDI) in the member nations of the Organization of Islamic Cooperation (OIC). The analysis of equation (1) in Table 4 demonstrates that the political stability variable (SP) significantly and positively influences foreign direct investment at an alpha level of 1% (***). The coefficient of 4.060 suggests that a 1% increase in political stability would result in a 4.060% enhancement in Foreign Direct Investment (FDI). This outcome corroborates the institutional theory, the theoretical framework of this study. As articulated by Yeager (2018), the institutional role in foreign direct investment can be examined using the transaction cost theory, which attributes the costs to market failure. The reduction in transaction costs derived from economic activity signifies efficient institutions and vice versa. Consequently, the formal and informal rules that assure economic actors' transactions or exchanges are fundamental.

Transaction costs in business operations stem from the accumulation of political policies that foreign investors evaluate, as political risks can potentially lead to confiscation or property damage, production disruption, and



operational constraints that can impede investor's business development. As Moosa (2009) noted, investors are unlikely to invest and risk their capital in an unstable environment. This study's conclusion aligns with and supports prior research suggesting that institutional quality, as a proxy for political stability, has a positive and significant effect on Foreign Direct Investment (FDI) (Ajide & Raheem, 2016).

*Hypothesis 1b*

The findings from the dynamic panel regression, as presented in Table 2, reveal that the variable of corruption control (CC) has a positive yet insignificant impact on Foreign Direct Investment (FDI). This suggests that a high level of corruption control neither increases nor decreases the inflow of foreign direct investment. Consequently, the data analysis results do not align with the proposed problems and established hypotheses.

Theoretical and empirical discussions continue to debate this matter. Dahlstrom and Johnson (2007) argue that corruption can be advantageous as it provides investors with some degree of flexibility, aiding them in circumventing prevailing restrictions. Their research posits corruption as a "lubricant," facilitating more efficient and economically viable investment strategies. Similarly, Méon and Weill (2008) suggest that in cases where institutional quality is inferior, corruption may stimulate economic growth.

Nonetheless, the results of the present study could not validate these findings, which formed the basis for the research hypothesis. For instance, a study by Blackburn and Forgues-Puccio (2009) found that corruption actually diminishes economic efficiency by restricting the benefits offered by the government to its citizens. Additionally, the study by Erum and Hussain (2019), arguing that corruption poses a threat to economic growth by hindering the creation of new inventions and private investment, also could not be confirmed.

*Hypothesis 1c*

The data analysis of equation (3) in Table 2 reveals that the variables of Voice and Accountability significantly and negatively impact foreign direct investment (FDI) at an alpha level of 1% (*** sign). The coefficient value of -2.530 suggests that a 1% increase in Voice and Accountability would result in a -2.530% decrease in foreign direct investment. This implies that an enhancement in the value of voice and government accountability could

diminish the inflow of FDI. Hence, the results of the test do not align with the hypothesis formulated in the study.

The results of this test could not validate previous findings, including Jadhav's (2012) research, which discovered an effect of Voice and Accountability on foreign direct investment in BRICS countries. Furthermore, the study by Kurul and Yalta (2017), suggesting that FDI flows considerably benefit from voice and accountability, could not be confirmed.

However, the direction of the findings is consistent with Mengistu and Adhikary's (2011) research, examining the role of governance on FDI inflows. Their study demonstrated that among the six indicators of global governance, only the variables of regulatory quality and voice and accountability had no significant impact on FDI in Asia.

Similarly, Fereidouni et al. (2011) scrutinized MENA countries from 2000-2008, also yielded analogous findings. Voice and accountability variables adversely influenced FDI in both developed and less developed countries. In the context of Muslim nations, FDI also appears to be negatively affected by voice and accountability, as per the results of a study conducted by Uddin et al. (2019). The investigation reveals a disparity between high or low levels of public participation and government accountability in relation to foreign direct investment.

*Hypothesis 1d*

The analysis of equation 4 in Table 2 illustrates that the Regulatory Quality variable significantly and positively impacts foreign direct investment at an alpha level of 5% (** sign). The coefficient value of 7.310 indicates that a 1% increase in Regulatory Quality would result in a 7.310% increase in foreign direct investment. The influence of regulation on FDI is explained by UNCTAD (1996), which suggests that in developing countries, more open trade and investment policies are emerging due to policy reforms aimed not only at improving FDI conditions but also at enhancing general economic conditions and creating a more favorable environment for FDI inflows. Dang and Nguyen (2021) refer to these rules as 'Attraction' factors (institutional factors).

The majority of prior studies report a positive effect of Regulatory Quality (RQ) on foreign direct investment (FDI). Globerman and Shapiro (2003), using



Worldwide Governance Indicators (WGI) data, validate that a significant factor in attracting FDI to the United States is regulatory quality. Consequently, the findings of this study suggest that Muslim countries are endeavoring to follow the trend of developed nations in attracting FDI flows through the liberalization of regulations and the provision of incentives to investors.

*Hypothesis 1e*

The rule of law exerts a positive influence on Foreign Direct Investment (FDI) in Muslim countries. The data analysis in equation (5) in Table 2 demonstrates that the rule of law variable significantly and positively impacts foreign direct investment at an alpha level of 1% (*** sign). The coefficient value of 2.050 suggests that a 1% increase in the rule of law would lead to a 2.050% increase in foreign direct investment. This implies that the legal regulations of governments in Muslim countries (members of the Organization of Islamic Cooperation (OIC)) are instrumental in attaining their FDI inflows.

The 2008 amendment of the OIC Charter marked a significant development for the organization. OIC member nations acknowledge the importance of several global concerns voiced by numerous international organizations, including the United Nations (UN), the World Bank, and others. The OIC realizes that good governance in governmental contexts is a key element in efforts to enhance the welfare of Muslims. As stipulated in Article 2, paragraph 6, all OIC members are obligated to support and promote good governance, particularly the rule of law at all levels of state life.

To achieve the OIC's shared objective, specifics and details are articulated in the document The OIC-2025: Program of Action. The OIC has established 18 policy priority action programs to accomplish the common goals applicable from 2016 to 2025. Notably, the OIC also published an Implementation Plan document elaborating on the various action programs. Several of the work programs and implementation plans designed align closely with the institutional quality developed by the World Bank. The firm stance of the members in amending the OIC charter can normatively encourage the implementation of various aspects of the good governance index.

*Hypothesis 1f*

Government Effectiveness positively impacts Foreign Direct Investment (FDI) in Muslim countries. The data analysis in equation (6) in Table 2 reveals that

the Government Effectiveness (GE) variable significantly and positively influences foreign direct investment at an alpha level of 1% (*** sign). The coefficient value of 2,570 indicates that a 1% increase in Government Effectiveness would lead to a 2,570% increase in Foreign Direct investment (FDI). This test's results corroborate previous findings, including the research conducted by Alam et al. (2017). They found a significant effect of government effectiveness on foreign direct investment access in 81 countries globally with high, middle, and low income.

This study also confirms the findings of Gangi and Abdulrazak (2012). Their study demonstrated that of the six World Bank governance indicators (WGI), three variables - voice and accountability, government effectiveness, and rule of law - significantly impact foreign direct investment. The findings of the current study suggest that the effectiveness of governance, as a measure of government performance, has a positive impact on FDI flows in Muslim countries. Consequently, it can be inferred that Muslim countries need to adopt institutional reforms that can enhance their institutions' quality, in addition to economic reforms. These conditions can reflect a healthy investment climate and greatly assist in attracting more FDI.

**The Effect of The Green Economy on Foreign Direct Investment**

The second hypothesis posits that the Green economy, as represented by Natural Resources, Human Resources, and Environmental Regulations, has a significant positive effect on foreign direct investment. The ensuing discussion elaborates on each of these variables:

*Hypothesis 2a*

The data from Table 2 demonstrates that the Natural Resources (NR) variable significantly and positively impacts foreign direct investment at a 5% significance level (** sign). The coefficient value of 7,950 indicates that a 1% increase in natural resources will lead to a 7,950% increase in Foreign Direct investment (FDI). This suggests that an augmentation in the quantity or rental value of natural resources would enhance the volume of foreign direct investment. The results of the data testing are consistent with the hypotheses and problem statements developed in this study.

These findings successfully depict the phenomenon that is prevalent in almost all Muslim countries, which own some of the world's most abundant natural



resources. Depending on the type of natural resource assets, the wealth of natural resources in Muslim countries can act as either a curse or a blessing. Natural resources can serve as a boon and facilitate a transition to a green economy by promoting the greening of agricultural and forestry sectors. Moreover, they can aid in minimizing the exploitation of the fossil resource sector (oil, gas, coal) through a shift towards renewable energy.

*Hypothesis 2b*

The analysis reveals that the Human Capital (HC) variable significantly and positively influences foreign direct investment at a 1% significance level (*** sign). The coefficient value of 2,845 suggests that an increase in Human Capital by one unit will result in a 2,845 unit increase in Foreign Direct Investment (FDI). The study provides an overall representation of the Muslim countries during the observation period, which may not be indicative of the individual conditions in each country.

Human capital, particularly in terms of knowledge and technology output, is a crucial pillar in several Green Economy Indexes (GEI). Implementing innovation in higher education can directly affect innovative infrastructure and provide a technical foundation for human resources to achieve the key strategic indicators of a country's development.

Human capital has been widely discussed from various perspectives, including economics, ecology, management, and psychology, and at different levels—individual, corporate, and country (Zafar et al., 2019). Goldin (2016) defined human capital as the productive investments made by humans in enhancing their knowledge and skills. Mina (2007) refined the definition of human capital to include education and training, which are essential investments in human capital, especially for host countries, as they can serve as a productive resource in attracting FDI inflows. In the context of Muslim countries, a recent study by Noorbakhsh et al. (2001) confirmed that human capital positively affects investment and economic growth in high-income countries but does not have a significant correlation in low-income countries. However, general theoretical literature on FDI regards human capital as a key factor in increasing FDI inflows (Sabir & Khan, 2018).

*Hypothesis 2c*

The results indicates that the Regulatory Environment (RE) variable

significantly and positively affects foreign direct investment at a 5% significance level (** sign). The coefficient value of 3,856 suggests that a one unit increase in the Regulatory Environment will lead to a 3,856 unit increase in Foreign Direct Investment (FDI). This implies that enhancing the effectiveness of government regulation, as a means of reducing CO2 emissions, will increase foreign direct investment. Environmental regulation forms part of the transition to a green economy, which is poised to be a new source of economic growth in the future. Consequently, the green economy policies of a country are an important consideration for investors when making investment decisions.

This finding aligns with the fundamental stakeholder theory, which posits that companies, in addition to focusing on shareholders, have responsibilities towards various stakeholders, including customers, suppliers, the government, society, and the environment. As noted by Qoyum et al. (2022), investors are increasingly concentrating on the environmental and social concerns of a company in a country. Companies that fail to be environmentally and socially responsible may face lawsuits and potentially destroy shareholder value in the long run. Investors place significant importance on the protection of their assets, and many seek to contribute to social change by investing in companies with commendable Environmental, Social, and Governance (ESG) practices. The integration of non-financial characteristics, such as ethical factors and environmental and social concerns, has become a dominant trend in investment decisions. In addition, these results corroborate previous findings, including research by Shehzad et al. (2021), which suggests that countries with environmental and social responsibilities can create a breakthrough in attracting global investors.

**The Role of Financial Development in Moderating the Institutional Quality and Green Economy**

The third hypothesis was accepted, based on the results indicating that Financial Development (FD) amplifies the effect of institutional quality on Foreign Direct Investment (FDI) in Muslim countries. The discussion of this third hypothesis refers to the interpretation of the data processing results in Tables 3 and 4. A regression equation was formed using the interaction between the independent variables of institutional quality (SP, CC, VA, RQ, RL, GE) and green economy (NR, HC, RE) on the moderating variable, financial development (FD).



The results of the interaction between the six institutional quality variables (SP, CC, VA, RQ, RL, GE) and financial development mostly show positive coefficient values. The variables SP, CC, RQ, and RL each have a significant probability value at a 1% alpha level. In contrast, the interaction with VA and GE variables resulted in negative and insignificant coefficient values (Table 3).

Table 3. Institutional Quality Interaction and Financial Development

| **Indep. Variable** | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
|---|---|---|---|---|---|---|
| FDI(t-1) | 0.265*** | 0.2701*** | 0.272*** | 0.243*** | 0.274*** | 0.260*** |
| SP | 3,990*** | 4.0508*** | 4,080*** | 3,620*** | 3,930*** | 4,220*** |
| CC | -1,210 | 2.8908 | 9510 | 6278 | 4,220 | 1,640 |
| VA | -2,730*** | -6,380** | -2,370*** | -2,790*** | -1,660 | -2,730*** |
| RQ | -9,470 | -8,280 | -4,810 | -1,340 | -8030 | -8,230* |
| RL | -2,220*** | -1,580* | -2,440*** | -8,160*** | -1,990** | -2,570*** |
| GE | 2,900*** | 2,360** | 3,050*** | 3,020*** | 2,220 | 2,720*** |
| NR | 8,700 | 3,190 | 8,700* | 5,870 | 3,210 | -2,680 |
| HC | 2936*** | 3432* | 27014** | 3288*** | 2572 | 2567** |
| RE | 2842.86** | 25.64 | 312.08** | 299.03 | 4609.59 | 256.83 |
| TO | 2,330*** | 1,800* | 2,050** | 8075 | 6838 | 2,220*** |
| POPs | -3639 | -1204 | -6354 | 2017.8 | 6476.7 | -1075 |
| Ms | -77.97*** | -36.13 | -101.49*** | -73.226*** | -77.186*** | -84.165*** |
| FD | 3304 | -324.1 | -4114 | 7523 | 1365 | 6525 |
| FD*PS | 4.2200*** | | | | | |
| FD*CC | | 1,200*** | -3,850*** | | | |
| FD*VA | | | | 1,650*** | | |
| FD*RQ | | | | | 9.170** | |
| FD*RL | | | | | | 4,080 |
| FD*GE | | | | | | |
| FDI(t-1) FEM* | 0.3099*** | 0.3129*** | 0.3260*** | 0.3177*** | 0.3294*** | 0.318*** |
| FDI(t-1) PLS* | 0.7093*** | 0.7198*** | 0.7943*** | 0.7884*** | 0.8296*** | 0.746*** |
| Obs | 352 | 352 | 352 | 352 | 352 | 352 |
| N | 32 | 32 | 32 | 32 | 32 | 32 |
| Ins. Rank | 34 | 32 | 34 | 33 | 32 | 33 |
| Sargan chi sq. | 23,433 | 16,231 | 19,470 | 18,741 | 17,315 | 21,910 |
| Sargan Prob >chi sq. | 0.2187 | 0.5074 | 0.4270 | 0.4078 | 0.4331 | 0.2359 |
| AR1 | 0.9221 | 0.7666 | 0.3804 | 0.7578 | 0.9369 | 0.4368 |
| AR2 | 0.9859 | 0.9928 | 0.8780 | 0.9602 | 0.9995 | 0.9736 |

(Source: processed data, 2023)

Based on the aforementioned test results, Financial Development (FD) exhibits potential moderating status, which is to say, it has the capacity to moderate by affecting the strength of the relationship between the independent and dependent variables. This implies that a high level of Financial Development (FD) could potentially increase inflows of foreign direct

investment by enhancing institutional quality. Moreover, as a country's financial development increases, so does its institutional quality. Various studies also indicate the positive moderation impact of financial development on Foreign Direct Investment (FDI) (Djankov et al., 2003).

Djankov et al. (2003) explain that a society that adheres to contracts in financial services will facilitate smoother and more efficient transactions (both saving and borrowing) within banks. Therefore, healthy financial conditions not only augment the confidence of foreign investors, who can utilize these banking services, but also contribute to the improvement of the host country's financial development (Ibrahim & Kamri, 2017).

Table 4. Interaction of Green Economy and Financial Development

| **Indep. Variable** | **Model 1** | **Model 2** | **Model 3** |
|---|---|---|---|
| FDI(t-1) | 0.278*** | 0.2621*** | 0.2868*** |
| SP | 3,110*** | 4.10008*** | 3.9800*** |
| CC | 3,240 | 5831 | 1210 |
| VA | -1,580* | -3,010*** | -1,500 |
| RQ | -1,650* | -7,170** | -1,570* |
| RL | -2,190*** | -2,260*** | -1,820** |
| GE | 2,140* | 2,990*** | 2.7500** |
| NR | 3,220 | 8,960* | 7.8200 |
| HC | -2,150*** | 2675** | 25000 |
| RE | 3112.13 | 4155.48*** | 4243.20 |
| TO | 8982 | 3,400*** | 4822 |
| POPs | -8277 | -69681.6 | -6952 |
| Ms | -112.43*** | -80.477*** | -100.91*** |
| FD | 2108 | -2827 | 7458 |
| FD*NR | 6,730*** | | |
| FD*HC | | 2621.15** | |
| FD*RE | | | 2.6208** |
| FDI(t-1) FEM* | 0.3418*** | 0.3286*** | 0.3287*** |
| FDI(t-1) PLS* | 0.8101*** | 0.8195*** | 0.8191*** |
| Obs | 352 | 352 | 352 |
| N | 32 | 32 | 32 |
| Instrument Rank | 32 | 33 | 33 |
| Sargan chi sq. Sargan | 19,630 | 20,590 | 17,351 |
| Prob >chi sq. AR1 | 0.2935 | 0.3005 | 0.4990 |
| AR2 | 0.0961 | 0.7422 | 0.7695 |
| | 0.8197 | 0.9810 | 0.9874 |

(Source: processed data, 2023)

The final hypothesis was accepted based on the results indicating that Financial Development (FD) can significantly and positively moderate all the green economy indicators—Natural Resources (NR), Human Capital (HC),



and Regulatory Environment (RE)—on Foreign Direct Investment (FDI) in Muslim countries. This hypothesis discussion refers to the interpretation of the data processing results in Table 4. The Moderated Regression Analysis (MRA) test of the NR, HC, and RE variables on FDI, with financial development as a moderating variable, is significant at both 1% and 5% alpha (α) levels.

Based on the test values, the NR, HC, and RE variables are in potential moderating status, signifying that they have the potential to become moderating variables by influencing the strength of the relationship between the independent and dependent variables. This implies that with high Financial Development, there is a potential to increase FDI inflows through an increase in NR, HC, and RE. Concurrently, NR, HC, and RE will increase along with the increase in Financial Development (FD).

These findings provide an overview of the role of financial development on FDI in Muslim countries, a concept that is complex and continuously evolving. This aligns with several recent studies examining the impact of financial development, technological innovation, environmental governance, and FDI in Arab countries. Ju et al. (2023) emphasize the necessity for financial development to bolster environmental protection and simultaneously direct FDI positively in terms of environmental protection to ensure economic sustainability. Other studies focus on the potential of Islamic finance in driving sustainable development through FDI inflows. This research underscores the role of Islamic finance in supporting the green economy and highlights the relationship between environmental issues and economic performance (Syarifuddin, 2022).

## CONCLUSIONS

This study underscores the pivotal role of capital flows in the development of Muslim countries, a majority of which are developing nations. It explores the interplay between institutional quality, the green economy, and foreign direct investment (FDI), with financial development serving as a moderating variable. The findings reveal a robust relationship between institutional quality, proxies of the green economy, and the role of financial development in FDI inflows. These results advocate that investors meticulously evaluate these conditions prior to making investment decisions.

The study suggests that Muslim nations should prioritize enhancing their institutional quality, which is often compromised by issues such as corruption, democratic voting rights, and freedom of speech. Additionally, the research recognizes the considerable potential within the green economy sector of Muslim countries. Considering that most Muslim countries are rich in natural resources, there is an urgent need for policies that diversify the economy towards renewable energy, a sector currently preferred by global investors.

Moreover, the study encourages Muslim governments to work closely with financial institutions, especially central banks, to improve the stability of the financial system and create a favorable investment environment. Despite its insights, this research has its limitations. Future studies should explore the effect of other factors on FDI flows in Muslim countries, including innovation and technical readiness, public debt, interest rates, and culture. Future research should also increase the sample size and lengthen the observation period for a more thorough understanding of the dynamics involved. This study lays the groundwork for a more in-depth exploration of the complex relationship between institutional quality, the green economy, and FDI in Muslim countries.

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