

# Shari'ah Governance Quality and Environmental, Social and Governance Performance in Islamic Banks. A Cross-Country Evidence.

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## Abstract

**Purpose:** The paper examines the impact of Shari'ah governance quality on environmental, social, and governance (ESG) performance in Islamic banks.

**Design/methodology:** The study's sample consists of 66 Islamic banks from 14 countries over 2015-2019. The research uses the Heckman model, which is a two-stage estimation method to obtain unbiased estimates, as ESG scores are only observable for 17 Islamic banks in Eikon Refinitiv database at the time of the analysis.

**Findings:** The analysis shows that Shari'ah governance has a beneficial role to achieve ESG performance. It also shows that enhanced profiles of Shari'ah supervisory boards' attributes are more efficient than the operational procedures to promote ESG performance. In addition, the analysis shows that enhanced Shari'ah supervisory boards' attributes strengthen the bank's corporate governance framework while sound-designed procedures increase the bank's social activities by emphasizing their roles to ensure Shari'ah compliance. Finally, the analysis sheds light on the failure of Shari'ah governance to promote environmental performance.

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**Originality:** The research complements the governance-banks' ESG performance literature by examining the role of Shari'ah governance. The research also extends the literature on Islamic banks' sustainability by pointing to the Shari'ah governance failure to enhance environmental performance and thus, achieve Maqasid al-Shariah regarding the environment.

**Practical implications:** The research provides policy insights to Islamic banks' stakeholders to promote social and governance performance in the Islamic finance industry through improving Shari'ah governance practices. However, raising environmental awareness is imminent among all actors implicated in the Shari'ah governance processes to help overcome the anthropogenic risks.

### **Keywords**

Environmental Performance; Social Performance; Governance Performance; Corporate Governance; Shari'ah Governance; Maqasid al-Shari'ah.

**JEL:** G21, G34, Q56

## **1. Introduction**

Environmental, Social and Governance (ESG) banks' performance refers to how banks integrate environmental, social, and governance activities into their business models. Banks' environmental performance refers to how banks are directly involved in environmental protection actions both inside the organization and with their clients and business partners, as called "cleaner production" (Bătae et al., 2021; Dragomir, 2018; Gangi et al., 2019). Banks' social performance is related to the concept of banks' corporate social responsibility (CSR) which implies not harming the interests of banks' stakeholders. Banks' governance performance shows banks' commitments and effectiveness in following best corporate governance practices (Bătae et al., 2021). The best scenario for banks to achieve higher ESG performance would be implementing corporate governance standards of the highest quality while reducing environmental impacts and engaging in social responsibility programs (Bătae et al., 2021). The ESG performance literature is more abundant for conventional banks (CBs) (e.g., Azmi et al. 2021; Bătae et al. 2021; Birindelli et al. 2018; Paltrinieri et al. 2020). Besides, as corporate governance and sustainability performance are complementary to strengthen stakeholders' relationships, empirical studies are increasingly

examining corporate governance characteristics' and ESG performance relationship with a focus on board characteristics (Birindelli et al., 2018; Husted and Sousa-filho, 2019; Shaukat et al., 2016) and audit committees attributes (Del Giudice and Rigamonti, 2020; Pozzoli et al., 2022). Overall, the empirical results show a positive effect of corporate governance mechanisms on ESG performance.

With regards to Islamic banks (IBs), although their corporate governance is similar to conventional corporate governance in its structural and functional nature, Islamic norms and values' essentialization makes it distinct. The Shari'ah governance framework is exclusively unique to Islamic financial institutions (IFIs), which objective is to ensure that business operations conform to Shari'ah (Fatmawati et al., 2022; Mannai and Ahmed, 2019). It includes the Shari'ah supervisory board (SSB), which is central to ensuring that operations comply with Shari'ah principles through directing, reviewing, and supervising activities. It also involves internal processes designed to lead to the best Shari'ah supervision (e.g., Shari'ah review, Shari'ah audit, and Shari'ah risk compliance). SSBs must coordinate and interact with these functions within IBs to discharge their responsibilities effectively.

The relationship between Shari'ah governance mechanisms and IBs' ESG performance has been less investigated in the literature. Indeed, the existing literature on IBs' sustainability focuses mainly on IBs' sustainable disclosure (e.g., Aribi and Gao 2010; Haniffa and Hudaib 2007; Hassan and Harahap 2010; Maali et al. 2006; Mallin et al. 2014; Platonova et al. 2018; Sayd et al. 2011). However, empirical studies on IBs' ESG performance are mainly descriptive (Zafar and Sulaiman, 2019) despite the emergence of ESG performance measures in the industry. To the best of our knowledge, the study by Qoyum et al. (2022) is the first to investigate the effect of the Islamic label on the ESG performance of listed Shari'ah-compliant firms in Indonesia and Malaysia, but a cross-country evidence studies investigating IBs' ESG performance are still rare. Previous studies mainly examined IBs' financial performance (e.g., Beck et al., 2013; Mobarek and Kalonov, 2014; Olson and Zoubi, 2017; Toumi, 2019; Yanikkaya et al., 2018). However, nowadays, investors are increasingly manifesting interest in non-financial aspects of their investment decisions and consider ESG performance as a risk measurement (Broadstock et al., 2021), particularly after the recent COVID-19 pandemic (Broadstock et al., 2021; Gregory, 2022).

Besides, to the best of our knowledge, Jan et al. (2021) study is the first attempt to conceptualize a framework to establish the nexus of Islamic corporate governance and sustainability performance in Islamic financial institutions. The existing empirical studies dealing with Shari'ah governance focus on IBs' sustainability disclosure. Indeed, these studies mainly investigate the beneficial role of Shari'ah supervisory boards (SSBs) attributes such as SSBs size, qualifications, and reputation (e.g., Mallin et al., 2014; Sayd et al., 2011; Sencal and Asutay, 2020), and Shari'ah audit function characteristics (El-halaby and Hussainey, 2015) in promoting CSR/ethical disclosure. The literature lacks, thus, an examination of Shari'ah governance's effect on ESG activities integration and, thus, ESG performance.

In addition, the literature ignores investigating the effect of Shari'ah governance quality, considering more extensive SSBs' attributes and internal operational procedures' characteristics although the existence of a rich literature dealing with the best Shari'ah governance practices (see e.g., Fatmawati et al., 2022; Zulkifli & Asutay, 2019). Several Shari'ah standards-setting bodies and regulators continue further developing Shari'ah governance standards to accompany IFIs in implementing robust Shari'ah governance systems within their institutions (see for instance: AAOIFI, 2005; BNM, 2009, 2019; IFSB-10, 2009). However, most empirical studies have examined Shari'ah governance's contribution to sustainability/CSR/ESG profiles primarily focusing on SSBs' attributes. For instance, Sayd et al. (2011) provide evidence that larger SSBs belonging to diverse boards with doctorate qualifications and international reputations increase CSR disclosure in IBs. Similarly, Mallin et al. (2014) find a positive association between the SSB size and CSR disclosure. Few studies have examined the roles of other key elements involved in the Shari'ah governance system (Fatmawati et al., 2022). There is a lack of empirical literature exploring Shari'ah governance quality that considers SSBs attributes and the key functionalities or organs that support SSB members in fulfilling their duties and responsibilities.

This study aims to fill these gaps and, thus, empirically investigates the Shari'ah governance quality and IB's ESG performance association. We also complement the existing literature by empirically examining its effect on IBs' environmental commitments (ENV\_Performance), social responsibility initiatives (SOC\_Performance), and governance practices (GOV\_Performance), by considering each dimension separately. We generate a Shari'ah governance index through content analysis of IBs' annual reports that consider a set of Shari'ah governance practices related to SSBs attributes and internal operational procedures supporting SSBs. ESG performance-related data are

extracted from the Refinitiv database. The study's sample consists of 66 IBs from 14 countries over the 2015-2019 period (330 bank-year observations). As the ESG scores are only observable for 17 IBs (from 66 IBs) at the time of the analysis, we run the Heckman model, which is a two-stage estimation method that corrects bias and obtains unbiased estimates with missing dependent variables (Heckman, 1976).

The analysis offers three important findings. First, an enhanced Shari'ah governance quality promotes the overall IB's ESG performance. Second, the findings show that enhanced profiles of SSBs' attributes are more efficient than the internal operational procedures to promote IBs' overall ESG performance. Third, when considering the three pillars separately, the findings reveal that enhanced SSBs' attributes help implement corporate governance standards of the highest quality (GOV\_Performance) while sound-designed internal procedures appear to increase IB's capacity to integrate social activities (SOC\_Performance). However, an insignificant association of Shari'ah governance quality with IBs' environmental performance (ENV\_Performance) is found.

The study contributes to the existing knowledge in several ways. First, the research complements the study of Qoyum et al. (2022), which is the first study investigating the effect of the Islamic label on the ESG performance of Shari'ah-compliant listed firms in Indonesia and Malaysia. We extend the literature by examining ESG performance for an international sample of IBs. The research also complements the studies on Islamic finance and social responsibility that largely investigate the influence of Islamic values on the social responsibility behaviors of Shari'ah-compliant firms and their stakeholders (SSBs, shareholders, customers, etc.) (see Shu et al., 2022 for a systematic literature review).

Second, the study builds on the existing literature dealing with banks' corporate governance and ESG performance (Birindelli et al., 2018; Pozzoli et al., 2022) and adds new insights into Shari'ah governance's effect on IBs' ESG performance. We empirically provide evidence on the beneficial role that could play the Shari'ah governance mechanisms in promoting IB's ESG performance (and each of the three dimensions: ENV\_Performance, SOC\_Performance, and GOV\_Performance). Shari'ah governance actors could, thus, effectively cooperate with the board of directors and the other committees (audit, sustainability, etc.) to accompany IBs in their ESG strategies.

Third, the research extends the literature by investigating the effect on ESG behaviour of SSBs attributes, which are widely mobilised in the Shari'ah governance literature (Ajili and Bouri, 2018; Farag et al., 2018; Mallin et al., 2014; Sayd et al., 2011), and IBs' internal organizational arrangements, which are ignored in the most empirical studies on Shari'ah governance quality. We shed light on how internal procedures for Shari'ah supervision quality may positively affect IBs' ESG behavior, by emphasizing their roles to ensure Shari'ah compliance by detecting the Shari'ah non-compliant income.

Fourth, we contribute to the literature by pointing to the Shari'ah governance mechanisms' failure to enhance environmental performance (Kamla et al., 2006; Mergaliyev et al., 2019), which reveals the existence of weaknesses to fulfill *Maqasid al-Shari'ah* regarding the environment. The Shari'ah governance system should stimulate IBs to be directly involved in environmental protection actions both inside the bank and with their stakeholders, as the need to care for the Earth and the environment is repeatedly demanded in the *Holy Book*, the *Quran*. The current practices of Shari'ah governance do not help overcome the anthropogenic risks, which is a global call to reduce human impact on the Earth system.

The paper is structured as follows. Section 2 presents the literature review and develops the research hypothesis. Section 3 describes the research design. Section 4 presents the empirical findings and the discussion. Section 5 concludes the paper.

## **2. Shari'ah governance, *Maqasid al-Shari'ah* framework, and ESG performance: Literature review and hypothesis development**

Religion exerts a powerful influence in shaping personal values and behaviors (e.g., Gundolf and Filser, 2013) and influence business social responsibilities (e.g., Brammer et al., 2007). From this perspective, IBs' ESG performance could be explained in light of the Islamic moral economy (IME), which primary objective is to develop an economic system based on Islamic religious values and beliefs to fulfill the higher purposes of Islamic law, commonly known as *Maqasid al-Shari'ah* (Asutay, 2007, 2013). The Islamic religious values and beliefs, according to the Holy Book, the *Qur'an*, *Hadith*, and Shari'ah law (Islamic law), determine the relationship between humans and

*God*, between humans and the natural environment, and between humans and society (Azmat and Subhan, 2022; Kamla et al., 2006; Shu et al., 2022).

The higher purposes of Shari'ah can be summarized as sustaining and developing the value of human life, the human self, society, and the physical environment (Azmat and Subhan, 2022; Mergaliyev et al., 2019; Sencal and Asutay, 2021). The ultimate objective consists of serving the interests (*jalb al-masalih*) of all human beings and saving them from harm (*daf al-mafasid*). Whatever action is taken and whatever is done should be in line with all stakeholders' well-being. This implies that IBs should sustainably conduct their operations with social and environmental positive impact consequences by essentializing and adopting sustainable development practices (Khan and Badjie, 2022; Mergaliyev et al., 2019). Guided by IME values, IBs are, thus, expected to endogenize ESG issues in their provision of Islamic financial services (Sairally, 2015) as they are likely to be more sensitive to human well-being (Paltrinieri et al., 2020). IBs have to fulfill multidimensional objectives and satisfy both the “form”, the Shari'ah legal rulings, and the “substance”, the social and moral requirements of the Islamic worldview (Asutay, 2012). Sairally (2015) argues that ESG is an integral part of Maqasid al-Shariah, thus, ESG and Shari'ah compliance objectives should be achieved by IFIs at the same time.

The Shari'ah governance framework is a product of the IME referring to “a set of institutional and organizational arrangements through which Islamic financial institutions ensure that there is effective independent oversight of Shari'ah compliance over the issuance of relevant Shari'ah pronouncements, dissemination of information and an internal Shari'ah compliance review” (IFSB-10, 2009). SSB is a central component to ensuring compliance with Shari'ah law through directing, reviewing, and supervising activities (Fatmawati et al., 2022). It represents an internal regulatory authority that validates IBs' operations by verifying their legitimacy. The Islamic corporate governance framework also includes organizational arrangements and internal processes designed for better Shari'ah supervision and assistance to SSBs (e.g., Shari'ah review, Shari'ah audit, Shari'ah compliance, Shari'ah training) (Fatmawati et al., 2022). Previous literature has affirmed that the effectiveness of Shari'ah governance mechanisms depends on their characteristics and attributes (BNM, 2019; Fatmawati et al., 2022; IFSB-10, 2009; Khatib et al., 2022; Shafii, Supiah, et al., 2013; Zulkifli and Asutay, 2019), even in the field of corporate social responsibilities (Bukhari et al., 2020; Chouaibi et al., 2021; Mergaliyev et al., 2019; Sayd et al., 2011).

The primary role of Shari'ah governance is to achieve the ultimate Shari'ah compliance objective claimed by IBs' environment. Still, also its aspirational role is to demonstrate that IBs operate to fulfill the ethical expectations of the IME foundations and Maqasid al-Shari'ah (e.g., Sencal and Asutay, 2020). Indeed, the first principle of Islamic corporate governance refers to the unitary and complementary nature of Islamic knowledge and existence is *tawhid* (God's oneness and sovereignty) (Asutay, 2007, 2013). Accordingly, Islamic corporate governance within the IME frame and substance essentializes the interests and rights of all stakeholders. It necessitates a balance between such rights and responsibilities, as well as, considering their priorities (Sencal and Asutay, 2020). The second axiom is *tazkiyah*, and for corporate governance, this implies that individuals and other stakeholders are expected to grow without creating imbalances between the interests of all the involved stakeholders (Asutay, 2013; Sencal and Asutay, 2020). *Al-adl* (justice) is another fundamental axiom of IME, referring to socio-economic justice and beneficence to establish equilibrium between the interests of all the stakeholders in an intergenerational and intragenerational manner. For Islamic corporate governance, this means granting the right to whom it belongs, with the rights of all entities being defined in Islam. Thus, corporations are expected to establish relationships with all the stakeholders within a justice framework (Asutay, 2013). The principle of *al-ihsan* (beneficence) complements *al-adl* to achieve higher goals in terms of moral values through which a "good society" is aimed at.

Shari'ah governance is a stakeholder-oriented system with the SSBs conducting an auxiliary function to ensure Maqasid al-Shari'ah expectations. Being the methodological base of IME, Maqasid al-Shari'ah are expected to be pursued by SSBs members in their Shari'ah decision-making along with *maslahah* (public interest) to serve the interests of the larger stakeholders (Dusuki and Abdullah, 2007; Sencal and Asutay, 2021). Furthermore, actors involved in the Shari'ah governance framework are expected to act as stewards, motivated to behave under the spirit of vicegerency (*khilafah*). The latter is a core theological concept that stresses divine appointment and accountability, which raises an issue of responsibility regarding human actions (Zafar and Sulaiman, 2019). It promotes preserving society's well-being and interests and the collective dimensions of human life by considering all the stakeholders as *amanah* or trust from God (Asutay, 2007, 2013). Consequently, following the higher objectives of Shari'ah, actors involved in the Shari'ah governance processes are expected theoretically to enhance IBs' environmental

commitments, social responsibility initiatives, and governance practices, and thus IBs' ESG performance.

Furthermore, from an agency theory perspective, Shari'ah governance consists of monitoring mechanisms dealing with Shari'ah-related agency problems that could arise between IBs stakeholders, from an agency theory perspective (Basiruddin and Ahmed, 2020; Toumi et al., 2012). To ensure Shari'ah compliance, SSBs introduce an additional governance layer resulting in a dual governance structure within the corporate governance system. SSBs are represented at the board level and dispose of consultative and supervisory functions (Mollah et al., 2017). SSBs' members are employed to alleviate agency problems about Shari'ah compliance and ensure transparent information between IBs' managers and stakeholders by overseeing the effectiveness of management's practices. The monitoring and advising roles of SSBs, when performed effectively, lead to better IBs' governance performance. Furthermore, the internal procedures for Shari'ah supervision support SSBs in fulfilling their responsibilities. The Shari'ah audit, Shari'ah review, and other internal procedures are important pillars of a good Shari'ah governance framework that help improve the quality of financial reporting, the audit and review processes, and Shari'ah decision-making processes in IBs (Fatmawati et al., 2022; Khatib et al., 2022; Mannai and Ahmed, 2019; Shafii, Abidin, et al., 2013; Yasoa et al., 2020), which lead to better IBs' global governance performance.

Taken together, Shari'ah governance mechanisms are likely to enhance IBs' environmental, social, and governance practices. Accordingly, we test the following hypothesis:

*Enhanced Shari'ah governance quality promotes IB's ESG performance.*

### **3. Research design**

#### **2.1. Data and sample**

From the initial list of IBs extracted from the Refinitiv Eikon database, 66 IBs are retained for our study based on the availability of Shari'ah governance practices-related information. We deleted from the initial sample IBs not publishing their annual reports or the names of their SSBs. To gather Shari'ah governance practices-related information, we merged primary hand-collected data from 330 IBs' annual reports of the 66 IBs and secondary data from the Refinitiv Eikon

database. For IBs' ESG scores, data are extracted from the Refinitiv Eikon database. At the time of the analysis, ESG scores are available only for 17 IBs (from 66 sampled IBs). The final sample of the study consists of 66 IBs (330 bank/year obs.) from 14 countries over 2015-2019, where ESG performance scores are only observable for 17 IBs, which justifies the use of the Heckman model as it is explained in section 3.2. Table 1 shows the number of observations in each country in our sample and Table 2 shows the variables' measurement and source of data.

[Tables 1 &2]

### 3.2. Model specification and variables

As the dependent variable,  $ESG\_Performance_{i,t}$ , is not observed for all 66 sampled IBs as explained in section 3.1, we run the Heckman selection model (Heckman, 1976) to obtain unbiased estimates with missing measures outcomes. The Heckman model is a two-stage estimation method. The first stage performs a probit analysis on a selection equation (Eq.2). The second analyses an outcome equation based on the first stage binary probit model (Regression equation – Eq.1).

The model assumes thus that there exists an underlying regression relationship expressing the  $ESG\_Performance_{i,t}$ :

$$ESG\_Performance_{i,t} = \alpha_0 + \alpha_1 ShGovQ_{i,t} + \sum_{j=1}^J \alpha_j X_{i,t} + u_{1i,t} \quad (\text{Regression equation}) \quad (Eq.1)$$

Where,

$ESG\_Performance_{i,t}$  is the ESG score for the bank i at time t

$ShGovQ_{i,t}$  is the measure for the Shari'ah governance quality index for the bank i at time t

$X_{i,t}$  are the control variables for the bank i at the time t;  $\alpha_j$  are the parameters to be estimated

$u_{1i,t}$  is a normally distributed error term with mean zero and standard deviation  $\sigma$  to be estimated.

However, ESG scores are not available for all 66 IBs, but only for 17 IBs. ESG scores are observable when the IB disclose sufficient public information about their ESG activities and the Eikon database assigns to it an ESG score, and hence there exists an expression of ESG score ( $ESG\_Observable$ ) being observed if:

$$\beta_0 + \sum_{j=1}^J \beta_j Z_{i,t} + u_{2i,t} > 0 \quad (\text{Selection equation}) \quad (Eq.2)$$

Where,

$Z_{i,t}$  are the observable characteristics relative to the ESG disclosure;  $\beta_j$  are the parameters to be estimated;  $u_{2ij}$  is a normally distributed error term with mean zero and standard deviation equal to one.  $\text{corr}(u_1, u_2) = \rho$ .  $\rho$  is a correlation parameter between the error terms to be estimated. When  $\rho \neq 0$ , the Heckman model provides consistent and asymptotically efficient estimates for all the parameters in the model.

ESG\_Performance<sub>i,t</sub> is the proxy of the ESG performance of an IB  $i$  at the time  $t$ . ESG scores are calculated based on verifiable reported data in the public domain (more than 500 measures) grouped into ten categories and three pillars, environmental (ENV), social (SOC), and governance (GOV) (Refinitiv, 2021). ENV score measures a firm's commitment and effectiveness toward reducing environmental emissions in its production and operational processes, its capacity to reduce its customers' environmental costs and burdens, and its capacity to reduce the use of materials, energy, or water. SOC score measures the firm's commitment to being a good citizen, protecting public health, and respecting business ethics, its capacity to produce quality goods and services, integrating the customer's health and safety, integrity, and data privacy, and its effectiveness in respecting fundamental human rights conventions. GOV score reflects a firm's practices to communicate that it integrates economic (financial), social, and environmental dimensions into its day-to-day decision-making processes, its effectiveness towards following best corporate governance practices, and its effectiveness towards equal treatment of shareholders (Refinitiv, 2021). As additional analyses, we also regress ENV\_performance, SOC\_Performance, and GOV\_Performance on ShGovQ.

ShGovQ<sub>i,t</sub> is a proxy of *Shari'ah* governance quality of an IB  $i$  at the time  $t$ . Based on the literature on *Shari'ah* governance (Fatmawati et al., 2022; Mannai and Ahmed, 2019; Nawal et al., 2013; Zulkifli and Asutay, 2019) and reports published by the *Shari'ah* standards-setting bodies (AAOIFI, 2005; BNM, 2009, 2019; IFSB-10, 2009). Overall, 17 indicators are collected to assess IBs' ShGovQ divided into two groups: those related to SSBs' attributes and the others related to the organizational arrangements' characteristics. Each indicator is scored on a dichotomous basis, taking the commonly used method of giving the indicator a score of 1 or 0 in the empirical literature (e.g., Sencal and Asutay, 2021a; Al-Malkawi, Pillai and Bhatti, 2014; Mollah et al., 2017; Ajili and Bouri, 2018). A value of one indicates adherence to the attribute, and zero otherwise (Al-Malkawi et al., 2014). As additional analyses, we consider two additional sub-indexes measuring the quality

of Shari'ah governance. We mobilise *ShGovSSB*, which is a sub-index constructed based on SSBs' attributes, and *ShGovOARR*, which is a sub-index constructed based on the organizational arrangement indicators. We calculated Cronbach's alpha coefficients for the reliability of the indexes. The Cronbach's alpha coefficients vary between, 0,66 and 0,7, which is indicating acceptable internal reliability.

Following prior research, we control for board size (BOD) (Birindelli et al., 2018; Gangi et al., 2019; Husted and Sousa-filho, 2019), capital structure (EQTA) (Birindelli et al., 2018; Crespi and Migliavacca, 2020; McBrayer, 2018), profitability (ROE) (Ashraf et al., 2021; Birindelli et al., 2018; Biswas et al., 2018; Crespi and Migliavacca, 2020; Reverte, 2009), bank experience (EXP\_ (Biswas et al., 2018; McBrayer, 2018), risk (RISK) (Manita et al., 2018) and bank size (TA) (Birindelli et al., 2018; Biswas et al., 2018). Besides, as the primary role of Shari'ah governance is to identify the Sharia'h non-compliance in IBs, we also control the Sharia'h non-compliant income (SNCI). For macroeconomic variables, we control for domestic product growth (GDP) (Birindelli et al., 2018), Human development index (HDI) and CO2 emission level (CO2) (Ashraf et al., 2021).

### **3.3.Descriptive and correlation analyses**

Table 3 presents the descriptive analysis and Table 4 shows the correlation analysis. The average IBs' ESG performance is 25.64. The highest score is 59.16, while the lowest is zero. The mean of the ENV\_Performance score is 3,55 while the means of SOC\_Performance and GOV\_Performance are 22,09 and 22,13 respectively. On average, IBs are likely to privilege engaging in social activities and improve governance practices instead of engaging in environmental protection actions. However, ESG, ENV, SOC, and GOV scores are considered relatively low on average as scores range between 0, indicating poor relative performance, and 100, indicating excellent relative performance.

For ShGovQ, the average value is 54%, ranging between 29% and 94%, revealing a considerable difference in IBs' Shari'ah governance practices. When splitting the index into two sub-indices, the average ShGovSSB quality is observed to vary between 20% and 90%, with an average of 60%. However, IBs appear to have, on average, a lower ShGovOARR quality (47% versus 62% for SSBs attributes). On average, IBs pay more attention to SSBs' attributes.

The correlation between the ESG\_Performance and its dimensions is positive. Similar results are observed for ShGovQ, which appears to be positively correlated with the ESG score and its three dimensions. A negative correlation is also observed between ShGovSSB and ESG score, which could be driven by the negative correlation between ShGovSSB and the ENV score as seen in Table 4. We further observe that ShGovSSB and ShGovOARR are slightly negatively correlated. This result could reveal a substitution effect between SSBs attributes and the internal procedures. If an IB reinforces the internal procedures (e.g., Shari'ah audit/review, SSBs' meetings, SSBs' attendance), it will probably pay less attention to SSBs' profiles. This could be observed in a centralized Shari'ah governance scheme in the presence of a national SSB supervising internal SSBs at the IBs' level (Hamza, 2013).

[Tables 3&4]

#### 4. Empirical results

Table 5 shows our findings. The coefficient of ShGovQ is significantly positive in the regression equation at the 5 % level (Model 1). The findings suggest that IBs with enhanced Shari'ah governance quality are more likely to integrate environmental, social, and governance concerns into their business models. The result provides evidence for accepting the hypothesis stipulating that IBs with a high-quality Shari'ah governance framework stimulate IBs to endogenize ESG issues in providing Islamic financial services. Furthermore, as shown in models 3-6 in Table 5, we separately consider two sub-indices that measure the Shari'ah governance quality differently: the ShGovSSB and ShGovOARR. The findings show differences regarding the effect of both sub-indices on ESG performance. When considering the regression equations, ShGovSSB is observed to increase IBs' ESG performance (Model 3) at the 5% level of significance, whereas ShGovOARR appears to have an insignificant effect on it (Model 5). The findings show that favorable organizational arrangements, designed to support SSBs in their missions (e.g, Shari'ah review, control, and audit), appear not to be associated with IBs' ESG performance. However, SSBs appear to outperform these internal procedures in this area.

The findings are in line with the empirical literature dealing with SSBs' attributes and sustainability. Bukhari et al. (2020) found, for instance, a significant and positive relationship between SSBs pressure and IBs' CSR activities adoption. Besides, the Shari'ah qualification of the

majority of SSBs members could improve their ability to operationalize Islamic moral principles into banking practices (Safiullah and Shamsuddin, 2018). Indeed, academic qualification is associated with cognitive ability, skill base, and risk attitude (Hambrick and Mason, 1984). Shari'ah qualification can enable SSB members to be more aware of Maqasid al-Shariah and, thus, accurately evaluate the ESG risk implications of Shariah-compliant products and provide guidelines to develop internal processes for ESG risk. Furthermore, Reputable SSBs members belonging to diverse boards are more likely to embrace more experiences and interact with other Shari'ah scholars having different skills and knowledge (Sencal and Asutay, 2020), which is likely to favor discussing the world's current challenges, Maqasid al-Shari'ah, and *maslahah* issues. This would increase their awareness of ESG issues and impact the Shari'ah decision process and improve the quality of ex-ante Shari'ah screening regarding ESG matters of financing policies.

[Table 5]

To deepen the analysis, we provide complementary results and we regress ENV, SOC, and GOV performance separately on Shari'ah governance quality indicators as shown in Tables 6, 7 and 8 to study separately their impacts on each dimension.

[Tables 6&7&8]

As shown in Table 6, the ShGovQ increases the IB's governance rating level significantly at the 1% level (Model 5). The same result is observed when considering ShGovSSB in Table 7 (Model 5). To ensure Shari'ah compliance, SSBs introduce an additional governance layer resulting in a dual governance structure within the modern corporate governance system (Mollah and Zaman, 2015; Shibani and De Fuentes, 2017; Toumi et al., 2012). On the one hand, it includes the boards of directors, who protect the shareholders' interests; on the other hand, it includes the SSBs that oversees the IB's overall Shari'ah compliance to satisfy the IB's stakeholders' expectations and protect their interests. SSBs members have consultative and supervisory functions (Mollah et al., 2017) and thus provide additional checks and balances on the corporate governance framework that ensure proper transparency about the Islamicity of financial transactions and their relevant disclosure (Mollah and Zaman, 2015). From the agency theory perspective, the monitoring and advising roles of SSBs, when performed effectively, lead to better governance. Farag et al., (2018) revealed that the dual board structure in IBs lowers agency costs by adding a new layer of monitoring of banks' operations, which permits aligning the interests of managers, shareholders,

and depositors and promotes best governance practices in IBs. Elnahass et al. (2022) found that large SSBs with financially qualified and highly reputable Shari'ah scholars are likely to promote higher financial reporting quality in IBs, promoting best governance practices related to communication with outside investors.

However, we did not find evidence on the association between ShGovQ and IBs' environmental and social engagement (Models 1 and 3, Table 6). The same results are observed when considering ShGovSSB in Table 7 (Models 1 and 3). Enhanced profiles of SSBs did not promote IBs' effectiveness towards reducing environmental impact and integrating social activities. These results are consistent with the literature dealing with the social and environmental failure of IBs (Kamla and Rammal, 2013; Platonova et al., 2018; Sencal and Asutay, 2020; Zafar and Sulaiman, 2019). SSBs members tend to pay more attention to being legally compliant with Shari'ah rather than being proactive in becoming socially responsible and environmentally impactful (Sairally, 2015; Sencal and Asutay, 2020).

Table 8 reports results on the impact of ShGovOARR on ENV, SOC, and GOV performance. ShGovOARR appears to promote the IB's social activities significantly at the 1% level (Model 3), showing that sound-designed procedures enhance IB's effectiveness to integrate social activities but not its effects on environmental and governance integration (Models 1 and 5). The operational procedures bring additional checks, audits, and controls processes added to those traditionally performed by corporate governance mechanisms to ensure Shari'ah compliance and manage the SNCI resulting from diverse sources, such as selling unapproved products or violations of SSBs pronouncements in products and processes (Oz et al., 2016). The literature mainly focused on the Shari'ah audit function's effectiveness to ensure generating income under Shari'ah guidelines established by the regulators and SSBs (Ghani et al., 2019; Khatib et al., 2022; Shafii, Abidin, et al., 2013; Yasoja et al., 2020). Failure to comply with such guidelines gives rise to transactions declared void, and the related income is not recognised in the IB's book and is allocated to charities (Basiruddin and Ahmed, 2020; Sani and Abubakar, 2021). Thus, enhanced organizational arrangements, such as strong Shari'ah audit/review and Shari'ah risk management departments, are expected to better detect higher Shari'ah violations, implying higher amounts allocated to charities, which promote IBs' social activities integration.

Furthermore, IBs work on the principle of social justice and are therefore required to disclose information about their social engagements to their stakeholders, such as Zakat, Qard al-hasan, charity, treatment of SNCI, and other social practices including societal development, training, and research (Shu et al., 2022). Such information that partially points to the IB's social engagement is available in the Shari'ah annual reports that disclose Shari'ah auditing information to the public (Khatib et al., 2022). El-halaby and Hussainey (2015) argued that there is a positive significant association between the existence of a Shari'ah department and the CSR disclosure level. In the same vein, previous studies report that there is a positive association between ESG disclosure and ESG performance (e.g., Aureli et al., 2020), which provides strong evidence that firms adopting good sustainable disclosure practices are likely to have better sustainable performance. In consequence, IBs having robust Shari'ah auditing processes are likely to better disclose information on IB's social activities integration, which points to better social performance.

Furthermore, providing Shari'ah training and continuous education is another internal process involved in the Shari'ah governance system to keep up with developments in the banking industry and to improve Shari'ah governance actors' skills and expertise in effectively discharging their responsibilities (Fatmawati et al., 2022). Enhanced Shari'ah knowledge equals effective Shari'ah monitoring and supervision (Shafii, Supiah, et al., 2013). Thus, Shari'ah knowledge, that could be gained through training is likely to support Shari'ah auditors/reviewers to better assess the Shari'ah non-compliance, which would increase the amounts allocated to charity funds, promoting thus IBs' social performance.

In the same vein, since the SSBs shall meet regularly to better monitor Shari'ah compliance, their meeting frequency and attendance could significantly affect IBs' social performance. Conducting regular meetings improves the communication and interactions between Shari'ah governance actors (Fatmawati et al., 2022), which could increase the probability of Shari'ah non-compliance detection in IBs and thus the amounts allocated to IBs' social activities at the end of the process.

Our results further point to an insignificant association of Shari'ah governance indexes with IBs' environmental performance (Model 1, Tables 6-7). The findings are consistent with the rare studies dealing with the environmental failure of IBs (Kamla et al., 2006; Mergaliyev et al., 2019). The Shari'ah governance framework seems to be ineffective in reducing the environmental impact

of IB's activities (e.g., reducing IB's customers' environmental costs and burdens, reducing the use of materials, energy, or water, and finding more eco-efficient solutions. This is in line with the studies arguing that SSBs members tend to pay more attention to being legally compliant with Shari'ah rulings in all their banking operations rather than being proactive in becoming environmentally impactful (Sairally, 2015; Sencal and Asutay, 2020). Despite the dynamic growth of the Islamic finance industry and regulators' efforts to improve Shari'ah governance quality at the IBs' level, the current practices still do not emphasize the environmental practices and cleaner production and failed, thus, implement Maqasid al-Shari'ah related to environmental impact areas into its processes.

Among bank-level control variables, RISK coefficients are positive and significant suggesting that more stable IBs are likely to integrate ESG activities into their business model (Models 1, 3, and 5, Table 5). The findings join the existing empirical literature (Gillan et al., 2021). We also find a positive association between SNCI level and ESG integration (Models 1,3 and 5, Table 5), suggesting that IBs detecting higher SNCI are more likely to have greater ESG ratings. Besides, the equity ratio is observed to be significantly negative, suggesting that highly leveraged IBs are more likely to integrate ESG activities into their business model (Models 1 and 3, Table 5). The finding aligns with Ashraf et al. (2021) results. With growing investors' interest in sustainability responsibility, the non-social responsible firms bear a higher financing cost when issuing equity capital (Eliwa et al., 2021). The results also evidence a negative association between the human development index HDI and IBs' ESG performance. The finding is consistent with Ashraf et al. (2021) results. The result suggests that IBs working in low human development environments may engage in more ESG activities to compensate for the community's weaknesses and use their sustainable engagement as a signaling mechanism to stakeholders. The results also show a negative association between CO2 emissions and IBs' ESG performance. The finding aligns with Ashraf et al. (2021) and suggests that IBs in countries characterized by a higher level of environmental degradation due to human activities and natural processes may not integrate ESG activities.

## 5. Conclusion

The research investigated the impact of Shari'ah governance quality on IB's ESG, ENV, SOC, and GOV performance for 66 IBs from 14 countries over 2015-2019 using the Heckman

model, a two-stage estimation method, as ESG scores are available only for 17 IBs at the time of analysis. We developed an extensive Shari'ah governance index including SSBs' attributes and IBs' internal organizational arrangements for Shari'ah supervision. We provide evidence that best practices of Shari'ah governance enhance IBs' ESG performance. We also find that SSBs' attributes strengthen IBs' corporate governance framework while well-designed internal procedures appear to promote IB's effectiveness and capacity to integrate social activities. Finally, we find an insignificant effect of Shari'ah governance quality on IBs' environmental performance.

Several implications emerge from this research. ESG performance has become increasingly prominent worldwide, and IBs must react to remain competitive and ahead of stakeholders' ethical and sustainable expectations. IBs' stakeholders shall be more conscious of the crucial role of Shari'ah governance in promoting social and governance performance. Reconsidering the role of Shari'ah governance could help IBs remain competitive and respond to global issues. However, Awareness-raising efforts should be undertaken by Shari'ah standard setting-bodies to shape and raise the awareness of IBs' governance system actors to consider ecological and environmental issues in their Shari'ah decision processes. While IBs have successfully mobilized financial resources, they remain subject to criticism because they are not fulfilling the Maqasid of Shari'ah and human and social well-being as identified by IME's transformational framework (Mergaliyev et al., 2019). Their current practices have been strongly criticized as not being truly Islamic (Sencal and Asutay, 2020). To compete with conventional financial institutions, they have oriented their strategies toward financial objectives rather than sustainable objectives (Mergaliyev et al., 2019). Following Maqasid al-Shari'ah regarding the environment, IBs must be directly involved in environmental protection actions both inside the bank and with their clients and business partners since the need to care for the Earth and the environment is repeatedly demanded in the Holy Book, the Quran (Benhamza, 2016; Kamla et al., 2006). In the last years, sustainable development has become a strategic objective and since the launch of the UN Sustainable Development Goals (SDGs) in 2015, the global community has had a new framework to address the most urgent global problems. We have entered, into what scientists called the Anthropocene, which refers to a new geological period that began at the end of the 18th century with the industrial revolution, and in which Humans have become a major geological force capable of influencing the Earth's evolution (Crutzen and Stoermer, 2021). Climate change, and other human and non-human consequences it entails (biodiversity loss, ocean acidification, water scarcity, air pollution, etc.), marks the

beginning of a new temporal sequence, both geological and historical. Meeting the Anthropocene challenges requires a profound transformation of corporations and their management and governance systems so that they cooperate better with the Earth system (Bebbington et al., 2019; Jabot, 2022). Reconsidering, thus, the role of the Shari'ah governance framework could help overcome the environmental failure of IBs and cooperate with the global community to meet the Anthropogenic challenges. Policymakers and governance standards-setting bodies for the Islamic finance sector should enhance Shari'ah governance practices towards more environmentally friendly practices.

Finally, our study presents a major limitation. The existing databases providing companies' ESG-related information still do not offer sufficient data to conduct an international study with a larger sample of IBs having ESG scores for a more extended period. In fact, despite the development of ESG rating institutions that accompanied an interest in sustainability indicators (e.g., S&P Global Ratings, Bloomberg, Refinitiv), information on ESG scores for institutions offering Islamic financial services is still rare. Furthermore, future researchers could explore the issue of the centralised Shari'ah governance schemes and investigate how it could contribute to IBs' ESG performance.

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<b>Table1: The countrywise distribution of the sample.</b>			
Country	Observations	IBs	ESG scores obsevable for :
Emirates	30	6	3
Bahrain	75	15	
Saudi Arabia	20	4	4
Kuwait	25	5	3
Oman	10	2	
Qatar	20	4	3
Bangladesh	30	6	
Indonesia	30	6	2
Jordan	5	1	
Pakistan	20	4	
South Africa	5	1	
Tunisia	5	1	
Malaysia	45	9	2
Maldives	5	1	
Total	330 Observations	66 IBs	17 IBs

<b>Table2: Variables definitions</b>			
<b>Variables_names</b>	<b>Explanations</b>		<b>Sources / References</b>
ESG_Performance	ESG score of the bank i at the year t		Refinitiv Eikon
ENV_Performance	Environmental score of the bank i at the year t		Refinitiv Eikon
SOC_Performance	Social score of the bank i at the year t		Refinitiv Eikon
GOV_Performance	Governance score of the bank i at the year t		Refinitiv Eikon
ESG_Observable	A binary variable. It takes one if the ESG score is observable of the bank i at the year t		Refinitiv Eikon
ENV_Observable	A binary variable. It takes one if the E score is observable of the bank i at the year t		Refinitiv Eikon
SOC_Observable	A binary variable. It takes one if the S score is observable of the bank i at the year t		Refinitiv Eikon
GOV_Observable	A binary variable. It takes one if the G score is observable of the bank i at the year t		Refinitiv Eikon
ShGovQ	The overall Shari'ah governance index of the bank i at the year t		
ShGovSSB	The Shari'ah governance index including the SSBs attributes.		
	SSB_Shari'ah_qualification	It takes one if more than 50% of SSB members of the IB have at minimum a bachelor's degree in Shari'ah, zero otherwise	IFSB, AAOIFI, BNM Author's calculation from Refinitiv Eikon
	SSB_banking&finance_qualification	It takes one if there is one member at least among the SSB members of the IB is banking and finance qualified	IFSB, AAOIFI, BNM Refinitiv Eikon
	SSB_experience	It takes one if more than 50% of SSB members of the IB have experience in issuing fatwas, documents, Sukuk and funds	IFSB, BNM Author's calculation from Refinitiv Eikon
	SSB_cross-membership	It takes one if at least one member among the SSB members of the IB serves no more than one IB and one Takaful company	BNM Refinitiv Eikon
	SSB_reputation	It takes one if the number of actual and former positions of SSB members of the IB is superior than the median of the sampled Shari'ah scholars on the Refinitiv Eikon database	IFSB, BNM Author's calculation from Refinitiv Eikon
	SSB_independence	It takes one if all SSB members of the IB are not executive directors or senior officers	IFSB, AAOIFI, BNM Primary data/annual reports
	SSB_gender diversity	It takes one if there is a female among the SSB members of the IB	IFSB Primary data/annual reports
	SSB_nationality diversity	It takes one if there is a mix of nationalities among the SSB members of the IB	IFSB Author's calculation from Refinitiv Eikon
	SSB_change	It takes one if the SSB composition in total changed annually	AAOIFI Primary data/annual reports
	SSB_size	It takes one if the SSB size is limited between 3 and 8	IFSB, AAOIFI, BNM Primary data/annual reports
ShGovOARR	The Shari'ah governance index including the internal organizational arrangements items.		
	Internal_Shari'ah_audit/review_unit	It takes one if there is an internal Shari'ah unit or department	IFSB, AAOIFI, BNM Primary data/annual reports
	Shari'ah_risk_management_unit	It takes one if there is a department for Shari'ah risk management	BNM Primary data/annual reports
	Shari'ah_training	It takes one if the bank provides Shari'ah training for its employees	BNM

		Primary data/annual reports
SSB_secretary	It takes one if the SSB has its secretariat	IFSB, BNM Primary data/annual reports
Public_disclosure_the_Shari'ah_report	It takes one if the IB discloses the Shari'ah report	AAOIFI, IFSB, BNM Primary data/annual reports
Meeting_attendance	It takes one if SSB members attend 75% of the SSB meetings in a year	BNM Primary data/annual reports
Meeting_frequency	It takes one if the SSB holds a minimum of six meetings per year	IFSB, BNM Primary data/annual reports
BOD	ln (board_of_directors_size) of the bank i at the year t	Primary data/annual reports
EQTA	Equity/assets of the bank i at the year t	Refinitiv Eikon
EXP	ln (age) of the bank i at the year t	Primary data/annual reports
ROE	Return_on_equity of the bank i at the year t	Refinitiv Eikon
RISK	$[(Return\_on\_asset + Equity\_ratio)/SD(Return\_on\_asset)]$ of the bank i at the year t	Refinitiv Eikon
TA	ln (Total_assets) of the bank i at the year t	Refinitiv Eikon
SNCI	ln (Shariah_non-compliant_income) of the bank i at the year t	Primary data/annual reports
GDP	Country_GDP_Growth_rate at the year t	World Bank Database
HDI	Country_Human_development_index at the year t	Human development data center - UNDP <a href="http://hdr.undp.org/en/data">http://hdr.undp.org/en/data</a>
CO2	Country_CO2_emission at the year t	<a href="https://ourworldindata.org/co2-emissions">https://ourworldindata.org/co2-emissions</a>

<b>Table3: Descriptive_statistics.</b>					
Variables	IBs	Mean	SD	Min	Max
ESG_Performance	17	25,64	12,50	0	59,16
ENV_Performance	17	3,55	3,73	0	15
SOC_Performance	17	22,09	14,53	0	47
GOV_Performance	17	22,13	14,38	0	46
ESG_Observable	66	0,12	0,32	0	1
ENV_Observable	66	0,12	0,32	0	1
SOC_Observable	66	0,12	0,32	0	1
GOV_Observable	66	0,12	0,32	0	1
ShGovQ	66	0,54	0,12	0,29	0,94
ShGovSSB	66	0,60	0,14	0,2	0,9
ShGovOARR	66	0,47	0,23	0	1
RISK	66	3,94	2,15	0,70	38,89
EXP	66	2,94	0,64	1,10	4,45
EQTA	66	0,19	0,20	0,01	0,92
ROE	66	0,09	0,15	-1,33	0,61
BOD	66	2,13	0,39	0,69	3,04
SNCI	66	6,11	6,05	0,00	18,93
TA	66	9,13	3,73	1,61	24,27
GDP	66	3,57	2,26	-4,71	8,15
HDI	66	0,77	0,10	0,45	0,89
CO2	66	4,71	1,15	0,26	6,47

Tabl4 : Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.ESG_Performance	1																
2.ENV_Performance	0,56***	1															
3.SOC_Performance	0,14	-0,06	1														
4.GOV_Performance	0,78***	0,40***	0,02	1													
5.ShGovQ	0,22	0,10	0,06	0,28	1												
6.ShGovSSB	-0,5***	-0,42***	0,18	-0,22	0,63***	1											
7.ShGovOARR	0,54**	0,40***	-0,08	0,39***	0,74***	-0,06	1										
8.RISK	0,28**	0,24	-0,50***	0,33***	0,04	-0,02	0,07	1									
9.EXP	-0,17	0,02	-0,45***	-0,19	-0,13**	-0,06	-0,12**	0,11**	1								
10.EQTA	-0,34***	-0,31**	-0,34	-0,19	-0,15***	0,13**	-0,31***	-0,16***	-0,10**	1							
11.ROE	-0,02	0,25**	0,02	0,25**	0,08	-0,05	0,15***	0,18***	0,011**	-0,32***	1						
12.BOD	0,31**	0,26*	-0,09	0,10	-0,03	0,16***	-0,17***	0,08	0,24***	-0,15***	0,27***	1					
13.SNCI	0,36***	0,14	-0,17	0,31**	0,14***	0,02	0,16***	0,08	-0,02**	-0,12**	0,004	-0,004	1				
14.TA	0,20	0,46***	-0,16	0,39***	-0,10**	0,21***	0,05	0,08	-0,13**	-0,28***	0,18***	-0,12***	-0,03	1			
15.GDP	-0,21	-0,17	0,05	-0,10	0,08*	-0,09*	0,19***	-0,09*	-0,04	-0,20***	0,18***	0,04	0,22***	0,17***	1		
16.HDI	-0,28**	-0,15	0,02	-0,03	0,08*	0,29***	-0,14***	0,10**	-0,03	0,25***	-0,27**	-0,06	-0,12**	-0,09**	-0,46**		
17.CO2	0,04	0,24	-0,11	0,16	-0,01	-0,29***	0,24***	0,10**	0,08*	-0,29***	0,08	-0,30***	0,007	0,38***	0,10**	-0,08**	1

<b>Table5: ESG_determinants</b>						
	(1) ESG_Performance	(2) ESG_Observable	(3) ESG_Performance	(4) ESG_Observable	(5) ESG_Performance	(6) ESG_Observable
ShGovQ	51.89** (26.24)	-1.63 (2.26)				
ShGovSSB			52.01** (22.34)	-0.01 (2.07)		
ShGovOARR					13.47 (13.33)	-1.17 (1.28)
RISK	4.01*** (1.65)	0.36* (0.23)	4.75*** (1.81)	0.34* (0.22)	3.87** (2.01)	0.35* (0.22)
EQTA	-202.55* (113.23)	3.81** (1.94)	-292.16** (132.28)	4.18** (2.07)	-132.54 (104.11)	3.04 (2.59)
ROE	19.19 (31.49)	7.81 (7.18)	40.23 (32.90)	8.13 (5.81)	15.88 (33.94)	7.35 (5.75)
EXP	-8.97*** (2.43)	0.15 (0.32)	-9.16*** (2.47)	0.12 (0.31)	-9.53*** (2.61)	0.15 (0.32)
SNCI	1.56*** (0.28)		2.11*** (0.39)		1.33*** (0.38)	
HDI	-706.11*** (202.12)	11.74 (36.79)	-540.82*** (184.79)	16.13 (36.49)	-728.80*** (199.81)	19.41 (37.82)
CO2	-37.94* (21.53)	1.54 (4.20)	-24.21 (19.66)	1.66 (4.03)	-42.13** (21.61)	2.17 (4.18)
BOD		4.76*** (1.78)		5.04*** (1.75)		5.09*** (1.78)
TA		1.05*** (0.29)		1.10*** (0.29)		1.00*** (0.33)
GDP	-0.67 (0.48)	0.02 (0.10)	-0.53 (0.43)	0.01 (0.10)	-0.72 (0.45)	0.01 (0.10)
Constant	853.82*** (266.26)	-43.00 (52.61)	625.66** (250.86)	-49.30 (51.39)	911.07*** (265.77)	-53.53 (52.78)
Dummy_Country	Yes		Yes		Yes	
Observations	307		307		308	
Wald_Chi2	244.1***		262.0***		244.7***	
Wald test of indep.eqns.	2.41**		0.13**		0.29**	

Robust\_standard\_errors\_in\_parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<b>Table6: ENV, SOC and GOV performance_determinants (1)</b>						
	(1) ENV_ Performance	(2) ENV_ Observable	(3) SOC_ Performance	(4) SOC_ Observable	(5) GOV_ Performance	(6) GOV_ Observable
ShGovQ	3.85 (12.83)	-4.65*** (1.53)	10.85 (34.33)	-4.54*** (1.47)	112.74*** (44.90)	-5.05*** (1.48)
RISK	1.11 (1.11)	0.05* (0.03)	-11.00*** (1.89)	0.05 (0.03)	10.23*** (2.04)	0.05* (0.03)
EQTA	-41.99 (26.39)	-1.12* (0.66)	-418.90*** (80.01)	-1.13** (0.56)	-144.79 (164.70)	-0.83 (0.55)
BOD		2.93*** (0.66)		2.82*** (0.53)		2.79*** (0.58)
ROE	39.76** (19.37)	3.75** (1.69)	-111.62*** (43.12)	3.70** (1.44)	130.22** (59.36)	4.59*** (1.56)
EXP	-0.00 (1.09)	0.24 (0.29)	9.19*** (3.05)	0.21 (0.26)	-18.23*** (3.42)	0.32 (0.28)
TA		0.18*** (0.04)		0.16*** (0.03)		0.17*** (0.04)
SNCI	-0.07 (0.10)		-1.88*** (0.31)		1.89*** (0.39)	
HDI	-115.18** (55.86)	11.66*** (2.11)	-137.65 (229.62)	11.23*** (1.89)	-732.66*** (265.69)	11.41*** (1.91)
CO2	1.48* (0.84)	0.53*** (0.13)	30.79 (21.74)	0.51*** (0.11)	-47.45* (27.41)	0.54*** (0.12)
GDP	0.19 (0.75)	-0.25*** (0.06)	0.49 (0.74)	-0.24*** (0.06)	-1.23 (0.87)	-0.27*** (0.07)
Constant	86.93* (49.73)	-19.70*** (3.26)	68.59 (286.53)	-18.76*** (2.70)	876.60** (361.78)	-19.29*** (2.99)
Observations	308		308		308	
Dummy_Country	Yes		Yes		Yes	
Wald_Chi2	37.57***		315.2***		180.1***	
Wald test of ind.eqns	0.49*		4.34*		2.03*	

Robust\_standard\_errors\_in\_parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table7: ENV, SOC and GOV performance \_determinants (2)**

	(1) ENV_ Performance	(2) ENV_ Observable	(3) SOC_ Performance	(4) SOC_ Observable	(5) GOV_ Performance	(6) GOV_ Observable
ShGovSSB	15.47 (15.75)	-1.26 (1.39)	-29.97 (42.03)	-0.13 (1.10)	125.81*** (38.99)	-0.07 (1.10)
RISK	1.32 (1.80)	0.04 (0.03)	-7.54*** (2.51)	0.04 (0.03)	9.03*** (2.04)	0.04 (0.03)
EQTA	-87.95* (51.62)	-1.00 (1.11)	-167.66 (148.89)	-0.81 (0.57)	-308.70** (137.78)	-0.78 (0.57)
BOD		2.72*** (0.84)		2.25*** (0.47)		2.25*** (0.47)
ROE	26.51 (26.74)	3.33* (2.00)	-54.20 (37.12)	4.03*** (1.39)	108.73** (51.53)	4.09*** (1.41)
EXP	-0.46 (1.49)	0.19 (0.37)	-3.57 (3.10)	0.34 (0.26)	-15.22*** (2.65)	0.35 (0.26)
TA		0.19*** (0.07)		0.18*** (0.03)		0.18*** (0.03)
SNCI	0.01 (0.31)		-0.26 (0.61)		1.88*** (0.51)	
HDI	-130.11* (73.22)	11.89*** (2.29)	284.09** (134.21)	11.63*** (2.00)	-303.70*** (83.11)	11.77*** (2.00)
CO2	1.69 (1.60)	0.48*** (0.13)	-2.65 (3.78)	0.51*** (0.12)	6.54*** (2.40)	0.51*** (0.13)
GDP	0.37 (1.23)	-0.23*** (0.06)	-0.43 (0.80)	-0.25*** (0.06)	-0.31 (0.64)	-0.25*** (0.06)
Constant	99.65 (74.99)	-20.68*** (2.97)	-104.59 (98.85)	-20.58*** (2.83)	190.46*** (64.41)	-20.80*** (2.85)
Observations	308		308		308	
Dummy_Country	No		No		No	
Wald_Chi2	39.98***		114.2***		119.3***	
Wald test of ind.eqns	0.31*		0.56*		0.99*	

Robust\_standard\_errors\_in\_parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

<b>Table8: ENV, SOC and GOV performance _determinants (3)</b>						
	(1) ENV_ Performance	(2) ENV_ Observable	(3) SOC_ Performance	(4) SOC_ Observable	(5) GOV_ Performance	(6) GOV_ Observable
ShGovOARR	-1.95 (5.26)	-2.47*** (0.75)	35.15*** (14.63)	-3.16*** (0.74)	10.80 (12.93)	-2.74*** (0.92)
RISK	1.01 (0.70)	0.05 (0.03)	-6.73*** (2.56)	0.06* (0.03)	8.70*** (2.38)	0.05* (0.03)
EQTA	-53.42* (30.64)	-1.68*** (0.64)	-75.00 (153.17)	-1.86*** (0.56)	64.16 (85.45)	-1.74*** (0.65)
BOD		2.67*** (0.52)		2.44*** (0.49)		2.78*** (0.54)
ROE	47.13*** (14.47)	3.86*** (1.38)	-132.90** (60.68)	4.58*** (1.34)	189.71 *** (45.68)	4.09*** (1.43)
EXP	0.25 (0.78)	0.30 (0.28)	-4.98 (3.33)	0.22 (0.24)	-14.18*** (2.64)	0.31 (0.27)
TA		0.18*** (0.04)		0.16*** (0.05)		0.19*** (0.04)
SNCI	-0.01 (0.08)		-0.92 (0.70)		0.98*** (0.33)	
HDI	-110.95*** (39.03)	10.02*** (1.87)	398.46** (155.11)	10.28*** (1.69)	-47.13 (174.13)	10.19*** (1.93)
CO2	2.56** (1.34)	0.53*** (0.13)	-14.93*** (5.30)	0.48*** (0.10)	-1.26 (3.42)	0.55*** (0.13)
GDP	-0.13 (0.43)	-0.26*** (0.06)	2.67** (1.12)	-0.25*** (0.05)	-0.67 (0.85)	-0.27*** (0.07)
Constant	79.40** (34.83)	-19.37*** (2.94)	-157.39 (111.82)	-18.23*** (2.87)	26.40 (137.84)	-19.82*** (3.10)
Observations	308		371		308	
Dummy_Country	No		No		No	
Wald_Chi2	48.41***		68.82***		163.1***	
Wald test of ind.eqns	0.04*		3.52**		1.62*	

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1